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The legal concept of shared natural resources

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Abstract:

The aim of this study is to define legal issues related to cross-border mining, the so-called shared natural resources, and to present solutions to problems identified accordingly. The first step will involve an analysis of the concept of shared natural resources, which will be conducted in this paper.

The first section of the paper provides a theoretical basis needed for further discussion. It presents definitions of natural resources and their classification. The second part of the study presents definitions of shared natural resources established in the legal acts, the doctrine of the law, and proposed by author his own definitions. The relation between the concept of mineral and shared natural resources is presented at the end of this paper.

Key words:

Natural resources,

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1. Introduction

Despite the fact of moving gradually away from the traditional energy sources, and reducing the share of the energy from the coal-fired power stations in the energy production, extraction of the other minerals, except hard coal, is still crucial for human existence. Just to mention here at least gas, metal ores, metals, gypsum, sand, precious stones or thermal waters. However it is necessary to keep in mind that geology and Nature do not recognise the national boundaries, which results in the fact that some mineral deposits can lay at the territory of two or more states. This leads to the situation when they are subject to the varied legal regimes. There is also a possibility of them being located outside the sovereignty or jurisdiction of any state.

There are still not well described issues connected with mining. The aim of this study is to define legal issues related to cross-border mining, the so-called shared natural resources, and to present solutions to problems identified accordingly. The first step will involve an analysis of the concept of shared natural resources, which will be conducted in this paper.

The first section of the paper provides a theoretical basis needed for further discussion. It presents definitions of natural resources and their classification. The second part of the study presents definitions of shared natural resources established in the legal acts, the doctrine of the law, and proposed by author his own definitions. The relation between the concept of mineral and shared natural resources is presented at the end of this paper.

2. The concept of natural resources

It is necessary to understand the concept of natural resources to explain the basic terms. They have not been defined in any legal act, therefore it is necessary to refer to the approach presented in the literature. Although it should be noted that it is a very capacious and ambiguous term¹. In a fundamental aspect, they are defined as goods useful to man, including

¹ A. Woś, *Ekonomika odnawialnych zasobów naturalnych*, Warszawa 1995, p. 11.

mineral and rock deposits, water and air resources, plant and animal resources. They are also geographical space with a soil and physiological complex, which includes natural forms of land and landscape values, soil resources, climatic conditions and, according to some researchers, a specific geographical location².

Nowadays, natural resources are defined in a dynamic way, according to which they become components and forces of nature, which can be used in the sphere of material production and the non-productive sphere, in order to satisfy material and spiritual needs of man³.

In the Polish legal system, natural resources are not defined⁴. Of course one should bear in mind any disadvantages associated with the use of legal definitions⁵. On the other hand, in international law, such definitions can be found in legal acts at various levels, where a given understanding is adopted for the purposes of a specific international convention or agreement. However, there is no single binding understanding of the term, just as there is no binding understanding of the environment. In the case of both concepts, the great diversity of their designations makes them, if they are formulated at all, dependent on the purpose and subject matter of the international agreement concerned⁶.

One such example is the Geneva Convention of 29 April 1958 on the continental shelf⁷, where according to Article 2 point 4 of that Convention, the natural resources referred to in these articles consist of the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil. Also in the documents which are not the sources of universally binding law, it is possible to find guidelines on how to understand the

² A. Bogda, C. Kabała, A. Karczewska, K. Szopka, *Zasoby naturalne i zrównoważony rozwój*, Wrocław 2010, p. 27.

³ *Ibidem*, pp. 27-28.

⁴ A. Haładyj, J. Trzewik, *Pojęcie strategicznych zasobów naturalnych – uwagi krytyczne*, Przegląd Prawa Ochrony Środowiska 2014, no. 1, pp. 28-29.

⁵ See among others: A. Bielska-Brodziak, *Kłopoty z definicjami legalnymi* (in:) O. Bogucki, P. Czepita (ed.), *System prawny a porządek prawny*, Szczecin 2008, pp. 159-174.

⁶ K.J. Marciniak, *Morskie zasoby genetyczne w prawie międzynarodowym*, Warszawa 2016, pp. 59-60.

⁷ Official Journal of Laws 1964, item 179.

concept of natural resources, as an example of this is the 2010 World Trade Organization report on trade in natural resources⁸. According to that aforementioned report, these are stocks of materials that occur in the environment, which are both rare and economically useful for production or consumption, both in their raw state and after minimal treatment. However, this is a rather narrow definition⁹ and, as mentioned, is not in a normative act.

Both in the case of Polish and international law sources, it is possible to indicate legal acts which use the term natural resources, but it is not explained. In Poland, these are e. g. the Act of 6 July 2001 on preserving the national character of the country's strategic natural resources¹⁰, the Act of 4 September 1997 on government administration departments¹¹, the Act of 21 March 1991 on maritime areas of the Republic of Poland and maritime administration¹² or the Act of 20 October 1994 on special economic zones¹³. International agreements include conventions: on the Protection of the Marine Environment of the Baltic Sea Area of 9 April 1992¹⁴, on the high seas – done at Geneva on 29 April 1958¹⁵, on biodiversity of 5 June 1995¹⁶, on the prevention of marine pollution by the dumping of waste and other substances, drawn up in Moscow, Washington, London and Mexico on 29 December 1972¹⁷, or in the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa¹⁸.

Some other pieces of legislation also have concepts similar to natural resources or with overlapping designations, such as environmental resources

⁸ World Trade Organization, Trade in natural resources. WTO Geneva 2010, https://www.wto.org/english/res_e/booksp_e/ano.ep_e/world_trade_report10_e.pdf, pp. 5 and 46, access: 03.01.2020.

⁹ J. Osiejewicz, *Globalne zarządzanie zasobami ropy i gazu w perspektywie prawnomiędzynarodowej*, Warszawa 2018, p. 18.

¹⁰ Official Journal of Laws 2018, item 1235, consolidated text.

¹¹ Official Journal of Laws 2019, item 945, as amended, consolidated text.

¹² Official Journal of Laws 2019, item 2169, as amended, consolidated text.

¹³ Official Journal of Laws 2019, item 482, as amended, consolidated text.

¹⁴ Official Journal of Laws 2000, No. 28, item 346.

¹⁵ Official Journal of Laws 1963, No. 33, item 187.

¹⁶ Official Journal of Laws 2002, No. 184, item 1532.

¹⁷ Official Journal of Laws 1984, No. 11, item 46.

¹⁸ Official Journal of Laws 2002, No. 185, item 1538, further referred to as: UNCCD.

from the Act of 27 April 2001 – Environmental Protection Law¹⁹, mineral deposit resources from the Act of 9 June 2011 – Geological and mining law²⁰ or forest resources from the Forest Act of 28 September 1991²¹. The above terms have also not been explained by the legislator.

Moving on to the definitions developed in the literature, it should be pointed out that, according to the approach that can be found in works from many years ago, natural resources are understood as organic (plants, animals, ecosystems) and inorganic (atmosphere, water, minerals), used by humans in the production and consumption process. According to other definitions, natural resources are considered to be those natural objects which are already or potentially subject to human exploitation and therefore occur or are likely to occur as objects of economic trading²². Sometimes such terms as “natural wealth” or “resources (objects) of Nature” are also used interchangeably, but they are not exactly synonyms²³.

Natural resources were also defined as material goods and related to them services that are part of Nature in a broad sense. As components of nature, they create the environment of human life, i.e. biotype, and at the same time are factors of production processes. Until now, they were treated as free forces of nature, because they were not the result of human work, so they were free²⁴. However, as early as the beginning of the 19th century, a theory emerged in the United Kingdom that the availability of natural resources sets an upper limit to economic development and that availability is inherently limited. The next phase was the creation of the so called

¹⁹ Official Journal of Laws 2019, item 1396, as amended, consolidated text.

²⁰ Official Journal of Laws 2019, item 868, as amended, consolidated text, further referred to as: G.m.l.

²¹ Official Journal of Laws 2018, item 2129, as amended, consolidated text.

²² *Vide* G. Grabowska, *Zasoby naturalne w świetle prawa międzynarodowego*, „Problemy prawne górnictwa” 1980, no. 4, pp. 30-31 and the literature cited there.

²³ According to G. Grabowska, the broadest scope has the concept of natural resources, which is identified with natural objects (G. Grabowska, *Zasoby...*, p. 30). So does T. Jasudowicz, who also considered the term „natural objects” to be the most capacious “natural objects”, while the terms “natural resources” and “natural riches” are narrower. According to the above author, in the notion of natural resources, the moment of economic importance or exploitation value of a given category of natural objects is more strongly emphasized (T. Jasudowicz, *Zasoby naturalne dzielone w stosunkach międzynarodowych*, „Sprawy Międzynarodowe” 1978, vol. 9 (307), p. 46).

²⁴ A. Woś, *Ekonomika...*, p. 11.

Conservation Movement²⁵ in the United States, which was concerned about the scarcity of natural resources and therefore the need to formulate guidelines for public activity in the broad sense²⁶.

A further stage, already in the 20th century, was the report of the Club of Rome's *Limits to Growth*²⁷, published in 1972. The book provided an analysis of the future of humankind in the face of population growth and depleting natural resources. Among the assertions that were made in it was one that the management of geological resources had long stopped being the sovereign domain of individual states²⁸. It was widely echoed in the world, but was also criticized by economists for methodological deficiencies²⁹. Already a year later, in 1973, the Symposium on the Economics of Exhaustible Resources was held. The symposium was followed by, among others, a number of works on the depletion and renewability of natural resources, but further details should be left out³⁰.

However, the entire history of mankind to date is proof that natural resources have an unquestionable impact on social welfare and progress. To a large extent the wealth and progress of nations comes from natural resources, and today their importance is increasing due to their limited number³¹. However, there is also a view that the country's abundance of natural resources does not always lead to development and wealth³².

Among the examples of definitions from modern literature one can mention the approach presented at the beginning of this chapter by A. Bogda, C. Kabała, A. Karczewska and K. Szopka³³, or K.J. Marciniak,

²⁵ About the Conservation Movement see among others: C. Meine, *Conservation Movement, Historical* (in:) P.A. Levin (ed.) *Encyclopedia of Biodiversity*, T. 2, Waltham 2013, pp. 278-288.

²⁶ H.J. Barnett, Ch. Morse, *Ekonomika zasobów naturalnych*, Warszawa 1968, p. 1.

²⁷ D.H. Meadows, D.L. Meadows, J. Randers, W.W. Behrens III, *Limits to Growth*, 1972.

²⁸ *Ibidem*.

²⁹ M. Malczewski, *Zasoby naturalne, postęp techniczny a długookresowy wzrost gospodarczy*, Łódź 2013, p. 41.

³⁰ See more: M. Malczewski, *Zasoby...*, p. 41 and next and the literature cited there.

³¹ A. Woś, *Ekonomika...*, p. 16.

³² M. Malczewski, *Zasoby...*, p. 13 and next and the literature cited there.

³³ See footnote no 2.

who, after M. Bothe, by natural resources means all naturally occurring, valuable elements on Earth, including: surface, underground, water and air³⁴.

It should be stressed that natural resources can only be defined within the framework of a given available technique, which means that the definition of resources is still evolving over time. This is relevant for the exploration of minerals that may have been previously useless, inaccessible or economically unprofitable to extract, and, as a result of the development of science and technology, their exploitation proves possible and profitable. Such resources are thus becoming a valuable and commonly used raw material³⁵. Another example is the air, which for thousands of years has served people only to breathe and during combustion processes, but today is one of the basic raw materials of the chemical industry. Similarly, granite was until recently only a building material and tombstone, whereas today it is a potential fuel, each tonne of which contains useful energy, i.e. uranium, which is equal to 150 tonnes of carbon³⁶.

Therefore, for the purposes of the considerations in this paper, the following concept of natural resources will be the leading definition – these are naturally occurring goods that are or can be useful to humans, in particular for the earth's surface, water, minerals, air and living resources.

3. Classification of natural resources

Natural resources are classified according to different criteria, the most common being the division into renewable and non-renewable resources³⁷. They are also divided into substances (i.e. minerals, water and others), energy and uses³⁸. Other subdivisions include geographical space, mineral resources, water resources and biotic resources, i. e. plants and animals. It should be noted that the division into renewable and non-renewable resources is also related to the classification into inexhaustible resources, such as, among

³⁴ K.J. Marciniak, *Morskie...*, p. 60 after M. Bothe, *Environment, Development, Resources*, RdC 2007, p. 353.

³⁵ A. Woś, *Ekonomika...*, p. 11.

³⁶ H.J. Barnett, Ch. Morse, *Ekonomika...*, p. 9.

³⁷ See among others: A. Bogda, C. Kabała, A. Karczewska, K. Szopka, *Zasoby...*, p. 28 and next.

³⁸ A. Woś, *Ekonomika...*, p. 11.

others geographical location or space and into depleted resources. In this second category resources are divided into those that are renewable and those that are non-renewable³⁹. It is also worth to mention the division into inanimate resources, which include for example water, land, minerals, but also energy and living resources, otherwise known as biological resources.

However, a much more interesting and yet far less discussed in literature, is the classification of natural resources according to their relation to state's sovereignty and state borders, which sees natural resources being divided into:

- 1) international natural resources (also referred to as external),
- 2) internal natural resources (also known as national or domestic resources)
- 3) shared natural resources (also referred to as joint natural resources)⁴⁰.

K.J. Malczewski's classification of resources is slightly different, distinguishing between resources located within the territory of one state, shared resources, resources located outside the territories of the states and, finally, resources that move between zones within and outside the jurisdiction of the states⁴¹. The author also notes that land-based resources are in principle within the jurisdiction of the State. In turn, the specific nature of marine biological resources means that they are more likely to be shared or to move between zones⁴².

The paper adopts the division proposed by G. Grabowska and T. Jasudowicz, without additional separation of the resources that move. The following part of this chapter will describe different types of natural resources distinguished by their location in relation to the national territory.

International natural resources are entirely located on areas that are outside territorial jurisdiction of individual states⁴³, i.e. all resources which are beyond the limits of national jurisdiction and resources which are beyond the limits of the jurisdiction of a single state⁴⁴. This, however, does not include the so-called *terra nullius*, which can be appropriated; instead, it applies to areas which due to their political, economic, social, or even

³⁹ *Ibidem*.

⁴⁰ G. Grabowska, *Zasoby...*, p. 30; T. Jasudowicz, *Zasoby...*, p. 47-48.

⁴¹ K.J. Marciniak, *Morskie...*, p. 61.

⁴² *Ibidem*.

⁴³ G. Grabowska, *Zasoby...*, p. 34.

⁴⁴ T. Jasudowicz, *Zasoby...*, p. 48.

strategic importance play a role so big that they should not be subject to the jurisdiction of a single country or a group of countries, but should be governed internationally⁴⁵. It is often the case that these resources are part of what is referred to as the “common heritage of the mankind” or, in other words, *res communis*⁴⁶. Today, the common heritage of mankind is a concept that refers to the international legal status of a specific territory, area. *Res communis* may not be appropriated by any state and is to serve the entire international community. This concept was developed in connection with the development of the legal status of the seabed and oceans and the underground, as well as the distinction from the open sea⁴⁷. The result was the United Nations Convention on the Law of the Sea, 10 December 1982, signed in Montego Bay, Jamaica⁴⁸. Although it does not contain a definition of the legal common heritage of humanity, the following constitutive features can be distinguished on the basis of its provisions:

- 1) a widely understood prohibition on the appropriation of the territory and its resources;
- 2) recognising that all rights to the territory and its resources are vested in humanity as a whole, taking into account the interests of future generations,
- 3) a mechanism for regulating activities in a given territory, organised within the framework of international cooperation,
- 4) exclusively peaceful use of the territory concerned⁴⁹.

As it was mentioned, common heritage of the mankind can only be used for peaceful purposes and should be preserved for the benefit of future generations. It includes e.g. open seas, seabed and ocean floor, with the exception of areas which belong to specific countries, the Antarctic as well as the outer space.

As far as the open sea and the bottom of the seas and oceans are concerned, the UNCLOS mentioned above is one of the basic legal acts governing their legal status. Poland ratified this Convention on 6 November 1998, on the basis of the Act of 2 July 1998 on the ratification of the United

⁴⁵ G. Grabowska, *Zasoby...*, p. 34.

⁴⁶ *Ibidem*, p. 34.

⁴⁷ M. Kowalski, *Wspólne dziedzictwo ludzkości* (in:) B. Hołyst, R. Hauser, J. Symonides, D. Pyć (ed.), *Wielka Encyklopedia Prawa*, t. 4, Warszawa 2014, p. 563.

⁴⁸ Official Journal of Laws 2002, No. 59, item 543, further referred to as: UNCLOP.

⁴⁹ M. Kowalski, *Wspólne...*, p. 563.

Nations Convention on the Law of the Sea, done at Montego Bay on 10 December 1982, together with the Agreement on the implementation of Part XI of the Convention, done at New York on 29 July 1994⁵⁰. At present, UNCLOS has still not been signed or ratified by all states, but often even states which are not a party to this convention treats its provisions as a codification of the customary law of the sea⁵¹.

The Antarctica is an area of the globe located in the strip from the South Pole to the 60°S parallel and includes Antarctica and the surrounding South Ocean and its islands. The Antarctic Agreement of 1 December 1959, signed in Washington⁵², together with other legal acts form the Antarctic Treaty System.

As far as space is concerned, its legal status is regulated by the Outer Space Treaty, i.e. The Agreement on the Principles of Operations of States for the Exploration and Use of Space including the Moon and other Celestial Bodies, done at Moscow, London and Washington on 27 January 1967⁵³, as well as the Convention on International Liability for Damage Caused by Space Objects, done at Moscow, London and Washington on 29 March 1972⁵⁴.

The least problematic are internal, national natural resources, as these are simply resources which are entirely located on the territory of one country and are entirely subject to its territorial sovereignty⁵⁵. Competence as to the investigation, management, and exploitation of these resources are vested in the respective states⁵⁶.

4. Shared natural resources

The most crucial point from the research conducted, is the category of shared natural resources, which are defined as lying on the territory or within the

⁵⁰ Official Journal of Laws No. 98, item 609.

⁵¹ See more: J. Symonides, *Nowe prawo morza*, Warszawa 1986.

⁵² Official Journal of Laws 1961, No. 46, item 237. This agreement is otherwise known as the Antarctic Agreement, the Antarctic Treaty or the Antarctic Pact.

⁵³ Official Journal of Laws 1968, No. 14, item 82.

⁵⁴ Official Journal of Laws 1973, No. 27, item 154.

⁵⁵ G. Grabowska, *Zasoby...*, p. 37.

⁵⁶ See more: J. Osiejewicz, *Globalne...*, p. 1 and next.

jurisdiction of two or more states, i.e. as mineral resources divided by the border of countries or lying at the meeting point of shelf areas of at least two states⁵⁷. This is how they are construed by G. Grabowska. T. Jasudowicz, on the other hand, defines them as natural resources which constitute a natural (biological or geophysical) unity, but lie on the territory or within the jurisdiction of two or more states, are respectively subject to the sovereignty of these states and require – due to their interstate character – close cooperation between these states⁵⁸.

The specificity of shared natural resources lies in the fact that they cannot be classified in either of two mentioned above categories. They are not international resources because their individual parts form part of the territories of the countries concerned and, according to this principle of sovereignty, are either subject to them or located within their recognised exclusive jurisdiction. Nor can they be qualified as national resources, since the extent of the sovereignty that individual states may exercise over them is different from their own to internal resources. Their special nature therefore makes it necessary to separate them into an autonomous legal category⁵⁹.

It is also very important that shared natural resources are an inseparable biogeophysical unity and that the internal ties that operate within this unity cannot be changed or eliminated through national borders⁶⁰. This is one of the characteristics that make them stand out.

Definitions of shared resources of a particular type of mineral can also be found, e.g. cross-border gas and oil resources, formulated by foreign Authors. Such resources are understood as natural reservoir which is not only transected by a national frontier, but which is capable of traversing that frontier by virtue of its state of flux. As a result of this state of flux, a portion of deposit lying on the one side of a border can be exploited, wholly or in part, from the other side⁶¹.

The other international work indicates that a shared resource is “geologically homogeneous bed of oil or gas which crosses the line of

⁵⁷ G. Grabowska, *Zasoby...*, p. 40.

⁵⁸ T. Jasudowicz, *Zasoby...*, p. 49.

⁵⁹ *Ibidem*, p. 48.

⁶⁰ *Ibidem*, p. 49.

⁶¹ J.I. Morán, *Building a general international legal regime for the exploitation of trans-boundary oil and gas deposits*, https://www.academia.edu/12802120/BUILDING_A_GENERAL_INTERNATIONAL_LEGAL_REGIME_FOR_THE_EXPLOITATION_OF_TRANSBOUNDARY_OIL_AND_GAS_DEPOSITS, p. 2, access: 03.01.2020.

national sectors on the continental shelf (...)”⁶². In other words, shared resources refer to “a single common geological structure extending over areas of national jurisdiction”⁶³.

This concept is also present in other documents of different level and nature. Although, it should be noted at the outset that there are relatively few. As J. Osiejewicz points out, the Charter of Economic Rights and Obligations of States⁶⁴ as one of the few UN resolutions that concerns shared natural resources⁶⁵. In the article 3 of the aforementioned resolution rules for the exploitation of resources by two or more states are introduced and each state should cooperate, on the basis of a system of information and prior consultation, with a view to achieving the optimum use of those resources without harming the legitimate interests of others. However, the shared resources themselves are not defined in this resolution.

Other documents, including international law acts, which in any way relate to shared natural resources and the rules of conduct relating to them, include: the draft environmental rules of conduct for the guidance of States for the protection and harmonious use of natural resources jointly by two or more States, adopted by the United Nations Environment Programme (UNEP)⁶⁶, the Convention on the Law of the Sea⁶⁷, the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)⁶⁸ and the ASEAN Agreement on the Conservation of Nature and Natural Resources⁶⁹, as well as the aforementioned UNCCD.

⁶² J.C. Woodlife, *International Utilisation of an Offshore Gas Field*, „The International and Comparative Law Quarterly” 1977, no. 2, p. 339.

⁶³ W.T. Onorato, *Apportionment of an International Common Petroleum*, „The International and Comparative Law Quarterly” 1977, no. 2, pp. 324-325.

⁶⁴ Resolution adopted by the General Assembly from 12 December 1974, No 3281 (XXIX). Charter of Economic Rights and Duties of States, A/RES/29/3281, <http://www.un-documentp.net/a29r3281.htm>, access: 03.01.2020.

⁶⁵ J. Osiejewicz, *Globalne...*, p. 53.

⁶⁶ Environmental Law Guidelines and Principles on Shared Natural Resources, UNEP GC Dec. No. 6/14, 19 May 1978, adopted by consensus and reproduced in UN Doc. A/33/25, pp. 154-155.

⁶⁷ Official Journal of Laws 2002, No. 59, item 543.

⁶⁸ Official Journal of Laws 2003, No. 2, item 17.

⁶⁹ Agreement on the Conservation of Nature and Natural Resources, Kuala Lumpur, 9 July 1985, <http://environment.asean.org/agreement-on-the-conservation-of-nature-and-natural-resources/>, access: 03.01.2020.

The above analyses cannot be carried out without reference to the concept and the legal rules concerning borders, as T. Jasudowicz pointed out⁷⁰. Of course, due to thematic limitations, it is not possible to discuss all aspects of border-related issues in an exhaustive way, but the most important issues must be presented in even a brief form.

The concept of the border is much younger than that of territory and dates back to the turn of the 13th and 14th centuries, while the birth of the linear border coincides with the French Revolution and the Napoleonic Wars⁷¹. Moving on to the definition, the border is understood as the line, or more precisely the plane, within which the national territory is contained. It shall separate that territory from the territory of other States or from territory which is not subject to national jurisdiction⁷². In Poland, the Act of 12 October 1990 on the protection of the state border establishes the definition of the border. According to Article 1 of this Act, the border of the Republic of Poland is the vertical area crossing the border line separating the territory of the Polish state from the territories of other states and from the high seas. The state border also demarcates the airspace, water and the interior of the Earth.

As far as the division of borders is concerned, there are several criteria for division. Firstly, natural and artificial borders were historically indicated. Among the natural boundaries are those of rivers, seas, mountains, steppes or deserts, which do not require exact demarcation. In this case, it is sufficient to specify that the boundary runs along the river thalweg⁷³ or the middle of the riverbed and, in the case of mountains, the peaks or a water feature. Today, however, this division has no legal significance. According to another criterion, i.e. the method of their determination, one can mention orographic boundaries, which means taking into account the shape of the surface and geometric boundaries, i.e. running independently of the terrain. A special kind are astronomical borders, i.e. running along meridians and

⁷⁰ T. Jasudowicz, *Zasoby...*, p. 47.

⁷¹ R. Bierzanek, J. Symonides, *Prawo międzynarodowe publiczne*, Warszawa 2005, pp.209-210.

⁷² *Ibidem*.

⁷³ Thalweg – it is the middle of the main navigable channel of a waterway that serves as a boundary line between states (<https://www.dictionary.com/browse/thalweg>, access: 03.01.2020).

parallels⁷⁴. Boundaries are first established on maps, i.e. in the process of delimitation, and then actually on the spot during demarcation⁷⁵.

Coming back to the specificity of shared natural resources, they can also be divided according to their state of aggregation, i. e. resources in liquid, solid and gaseous state⁷⁶. More problems, both factual and legal, are related to gas and liquid resources, which will of course be developed further in this work.

The consideration of what natural resources fall within the concept of shared natural resources was undertaken by T. Jasudowicz and, in the opinion of this Author, are all resources located in the territory or within the jurisdiction of more than one country, which constitute a natural and homogenous whole. They will therefore be resources in all states of aggregation indicated above, both on the surface and inside the Earth, and of organic or inorganic origin. These would also include plant and animal life resources and air⁷⁷. However, the inclusion of air in shared natural resources is probably too far-reaching, because it is used by all people around the world. However, the various types of water resources, suggested by the above mentioned Author, can be classified as shared natural resources. These will therefore be inter-state inland water bodies, i.e. surface watercourses which divide or intersect in their course the territory of two or more countries, groundwater with similar characteristics and fixed bodies of water, i.e. lakes and inland seas.

However, the above definitions of shared natural resources are incomplete and need to be clarified and perhaps even formulated in a satisfactory and universal way. As regards the legal status of shared natural resources in international, European and national law, it will be necessary to refer to individual legal acts at different levels. For the European Union, these will be both primary and secondary legislation, while for international agreements, they will be bilateral and multilateral agreements and acts that do not always have the force of universal law, such as resolutions of United Nations bodies.

The definition of shared natural resources formulated for the purposes of the research carried out, and relating to these definitions, must continue

⁷⁴ R. Bierzanek, J. Symonides, *Prawo...*, pp. 209-210.

⁷⁵ Ibidem, pp. 210-211.

⁷⁶ T. Jasudowicz, *Zasoby...*, p. 53.

⁷⁷ Ibidem.

to refer to the general understanding of natural resources adopted in this chapter. It must also take into account the distinguishing features of natural resources shared from other types of resources, such as their location, legal status or physical characteristics.

Thus, in this paper, shared natural resources are those natural resources which are located underneath or on the border of two or more countries (not necessarily adjacent to each other), the use of which is possible in the territory of all the countries in whose territory the deposit is located and the use of which may have both positive and negative effects on those countries.

5. Natural resources and the concept of mineral

The relationship between the notion of “natural resources” and the notion of “mineral deposits” and the “mineral” itself, used by the Polish legislator, must be taken into account. Nevertheless, what is interesting, the G.m.l. does not include the definition of mineral, as it only explains how to understand extracted mineral and mineral deposit. According to art. 6 point 19 G.m.l., mineral deposit is such natural accumulation of minerals, rock and other substances whose extraction may bring economic benefit⁷⁸.

Several attempts to define minerals have been made. For example H. Schwarz, on the basis of mineral deposit’s definition from article 6 point 19 G.m.l., formulates a definition of mineral as minerals and rocks and other liquid, gas and solid natural substances. However, the Author draws attention to an imperfection of this definition because of insufficient description of constitutive features⁷⁹. A Lipiński cites also a language definition, according to which mineral is a rock (within the meaning of geological sciences) or a part of it separated during exploitation or liquid or gas included in it, which becomes a useful mineral resource after extraction in natural shape or after being processed. But the Author also states that each mineral (substance) existing in natural deposit could be called mineral, and its utility might be only a reason to begin its extraction⁸⁰.

By referring to technical literature on geology and mining one can also try to explain how to understand minerals. In the Dictionary of Mining,

⁷⁸ A. Lipiński, *Komentarz do art. 6 – 9 ustawy z dnia 9 czerwca 2011 r. Prawo geologiczne i górnicze*, „Prawne problemy górnictwa i ochrony środowiska” 2017, no. 1, p. 24.

⁷⁹ Hubert Schwarz, *Prawo geologiczne i górnicze. Komentarz. Vol. 1 (art. 1-103)*, Wrocław 2012, p. 69.

⁸⁰ A. Lipiński, *Komentarz...*, p. 21; A. Lipiński, *Prawne podstawy geologii i górnictwa*, Warszawa 2019, pp. 31-32.

a mineral (useful) is considered to be a mineral extracted from the ground by economic mining work in its raw state or after processing. Depending on the state of aggregation, minerals are divided into solid, liquid and gaseous, and depending on their intended use – into energy, metallurgical, chemical and constructional⁸¹. In turn, according to the mining lexicon, a mineral is a rock or mineral of economic importance, obtained from a deposit by means of mining processes⁸². A slightly more elaborate definition is that a mineral is a geological formation occurring within or on the earth's crust that can find a profitable economic use. Once extracted from the deposit, the mineral becomes a raw material⁸³. The same definition can be found in recent publications⁸⁴.

It follows from the above considerations that the term “natural resources” is a broader concept than “mineral deposits”, “minerals” and includes them in part in its scope, since these concepts overlap but do not overlap entirely. It is therefore illegal to use these terms interchangeably.

Activities conducted on the basis of the provisions of the G.m.l. most often⁸⁵ concern those natural resources which are minerals. It follows that cross-border mining activities will be precisely the shared natural resources, which are also minerals, and will be aimed at the exploration and exploitation of deposits of these minerals.

6. Conclusion

Concluding, the concept of shared natural resources is closely linked to the concept of natural resources itself, and it is therefore necessary to clarify this

⁸¹ M. Najberg, J. Lubert, *Słownik górniczy*, Warszawa 1969, p. 106.

⁸² J. Olszewski et al., *Leksykon górniczy*, Katowice 1989, p. 118.

⁸³ W. Jaroszewski, L. Marks, A. Radomski, *Słownik geologii dynamicznej*, Warszawa 1985, p. 117.

⁸⁴ W. Głapa, J.I. Korzeniowski, *Mały leksykon górnictwa odkrywkowego*, Wrocław 2005, p. 43.

⁸⁵ Please note that according to G.m.l. activities carried out in the area covered by the mining property right may relate to the mineral deposit (its exploration, recognition or extraction) as well as other fragments of the rock mass, i. e., e. g. underground tankless storage of substances, underground landfilling of waste underground carbon dioxide storage for the purpose of carrying out a demonstration project of carbon dioxide capture and storage.

concept as well in order to fully understand their legal status and to draw up a satisfactory legal definition.

Thus, naturally occurring goods which are or may be useful to man, in particular the earth's surface, water, minerals, air and living resources, should be considered natural resources. According to one of the adopted classifications, natural resources should be distinguished from national, international and shared resources.

Using the existing scientific achievements, it is necessary to formulate a definition of shared natural resources, which should be considered to be those natural resources which are located underneath or on the border of two or more countries (not necessarily adjacent to each other), the use of which is possible in the territory of all the countries in whose territory the deposit is located and the use of which may have both positive and negative effects on those countries.

It should also be remembered that "natural resources" is a broader concept than "mineral deposits" and "minerals" and includes them in part in its scope, because these concepts overlap, but not completely and cannot be used interchangeably.

Of course, it should be borne in mind that the definitions presented in the paper are only the Author's proposal, although their formulation is necessary for further research in this area, just as it is important to establish the relationship between the notions of natural resources and divided natural resources to the notion of mineral and mineral deposits. Only this can provide a starting point for further research into the legal regulation of cross-border mining.

Bibliography

Literature

- Barnett H.J., Morse Ch., *Ekonomika zasobów naturalnych*, Warszawa 19680
Bielska-Brodziak A., *Kłopoty z definicjami legalnymi* (w:) Bogucki O., Czepita S. (red.), *System prawny a porządek prawny*, Szczecin 2008
Bierzanek R., Symonides J., *Prawo międzynarodowe publiczne*, Warszawa 2005

- Bogda A., Kabała C., Karczewska A., Szopka K., *Zasoby naturalne i zrównoważony rozwój*, Wrocław 2010
- Bothe M., *Environment, Development, Resources*, RdC 2007
- Głapa W., Korzeniowski J.I., *Mały leksykon górnictwa odkrywkowego*, Wrocław 2005
- Jaroszewski W., Marks L., Radomski A., *Słownik geologii dynamicznej*, Warszawa 1985
- Kowalski M., *Wspólne dziedzictwo ludzkości* (w:) Hołyst B., R. Hauser, Symonides J., Pyć D. (red.), *Wielka Encyklopedia Prawa*, t. 4, Warszawa 2014
- Lipiński A., *Prawne podstawy geologii i górnictwa*, Warszawa 2019
- Malczewski M., *Zasoby naturalne, postęp techniczny a długookresowy wzrost gospodarczy*, Łódź 2013
- Marciniak K.J., *Morskie zasoby genetyczne w prawie międzynarodowym*, Warszawa 2016
- Meadows D.H., Meadows D.L., Randers J., Behrens III W.W., *Limits to Growth*, 1972
- Meine C., *Conservation Movement, Historical* (w:) S.A. Levin (red.) *Encyclopedia of Biodiversity*, T. 2, Waltham 2013
- Najberg M., Lubert J., *Słownik górniczy*, Warszawa 1969
- Osiejewicz J., *Globalne zarządzanie zasobami ropy i gazu w perspektywie prawnomiędzynarodowej*, Warszawa 2018
- Olszewski J. et al., *Leksykon górniczy*, Katowice 1989
- Schwarz H., *Prawo geologiczne i górnicze. Komentarz. Tom I (art. 1-103)*, Wrocław 2012
- Symonides J., *Nowe prawo morza*, Warszawa 1986
- Woś A., *Ekonomika odnawialnych zasobów naturalnych*, Warszawa 1995

Journals

- Grabowska G., *Zasoby naturalne w świetle prawa międzynarodowego*, „Problemy prawne górnictwa” 1980, nr 4
- Haładyj A., J. Trzewik, *Pojęcie strategicznych zasobów naturalnych – uwagi krytyczne*, *Przegląd Prawa Ochrony Środowiska* 2014, nr 1
- Jasudowicz T., *Zasoby naturalne dzielone w stosunkach międzynarodowych*, „Sprawy Międzynarodowe” 1978, z. 9 (307)
- Lipiński A., *Komentarz do art. 6 – 9 ustawy z dnia 9 czerwca 2011 r. Prawo geologiczne i górnicze*, „Prawne problemy górnictwa i ochrony środowiska” 2017, nr 1
- Onorato W.T., *Apportionment of an International Common Petroleum*, „The International and Comparative Law Quarterly” 1977, nr 2

Woodlife J.C., *International Utilisation of an Offshore Gas Field*, „The International and Comparative Law Quarterly” 1977, nr 2

Internet sources

World Trade Organization, Trade in natural resources. WTO Geneva 2010, https://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report10_e.pdf, dostę: 03.01.2020

Morán J.I., *Building a general international legal regime for the exploitation of transboundary oil and gas deposits*, https://www.academia.edu/12802120/BUILDING_A_GENERAL_INTERNATIONAL_LEGAL_REGIME_FOR_THE_EXPLOITATION_OF_TRANSBOUNDARY_OIL_AND_GAS_DEPOSITS, dostę: 03.01.2020

<https://www.dictionary.com/browse/thalweg>, dostę: 03.01.2020