

# INTERNATIONAL JOURNAL OF LAW MANAGEMENT & HUMANITIES

[ISSN 2581-5369]

---

Volume 7 | Issue 5

---

2024

© 2024 *International Journal of Law Management & Humanities*

Follow this and additional works at: <https://www.ijlmh.com/>

Under the aegis of VidhiAagaz – Inking Your Brain (<https://www.vidhiaagaz.com/>)

---

This article is brought to you for “free” and “open access” by the International Journal of Law Management & Humanities at VidhiAagaz. It has been accepted for inclusion in the International Journal of Law Management & Humanities after due review.

In case of **any suggestions or complaints**, kindly contact [Gyan@vidhiaagaz.com](mailto:Gyan@vidhiaagaz.com).

---

**To submit your Manuscript** for Publication in the **International Journal of Law Management & Humanities**, kindly email your Manuscript to [submission@ijlmh.com](mailto:submission@ijlmh.com).

---

# Strategic Mineral Security and its Role in National Security

---

ELAN SANJEEVI<sup>1</sup> AND ANMOL SINGH<sup>2</sup>

## ABSTRACT

*Strategic minerals are critical to national security, serving as essential resources for industries that are crucial to a nation's defence and economic stability. This paper explores the concept of strategic minerals, tracing their significance from historical contexts to their modern-day applications in defence, energy, and technology sectors. India, a mineral-rich nation, faces challenges in securing these minerals due to deficiencies in certain key resources. The paper examines how minerals attain "strategic" status based on factors like supply availability, cost, and relevance to national interests. It also highlights the need for a robust legal framework to govern the security and management of strategic minerals in India, emphasizing the importance of stockpiling, exploration, and international procurement. The National Mineral Policy, 2019, though recognizing the importance of mineral security, lacks concrete legislative measures. This paper argues for the urgent development of a comprehensive legal framework to ensure the sustainable and secure supply of strategic minerals, essential for maintaining India's defence capabilities and overall national security.*

**Keywords:** national, defence, strategic, resources.

## I. INTRODUCTION

India is one of the top mineral-producing countries in the world, next to China, Australia, the United States of America and Russia with 77 Billion Dollars in mineral production value.<sup>3</sup> India is a mineral-rich country and is the home to abundant mineral wealth producing 84 minerals including 4 fuel, 11 metallic, 49 non-metallic industrial and 20 minor minerals.<sup>4</sup> India has the 5<sup>th</sup> largest coal reserves in the world. It is the 4<sup>th</sup> largest producer of iron ore and 3<sup>rd</sup> in rank in producing aluminium. It ranks 5<sup>th</sup> in its bauxite and zinc production and 3<sup>rd</sup> in producing limestone and chromite. It is the 2<sup>nd</sup> largest producer of steel. Minerals play a significant role in

---

<sup>1</sup> Author is a student at School of Law, Alliance University, Central Campus, Bengaluru, Karnataka, India.

<sup>2</sup> Author is a student at School of Law, Alliance University, Central Campus, Bengaluru, Karnataka, India.

<sup>3</sup> Staista, (2020), *Leading mining countries worldwide in 2016, based on mineral production value (in billion U.S.Dollars)* (Bar Graph/Chart) <https://www.statista.com/statistics/1114898/leading-mining-countries-worldwide-based-mineral-production-value/> (last visited on Dec.15, 2020).

<sup>4</sup> TERI, *Overview of Mining and Mineral Industry in India*, TATA Energy Research Institute, (2001) <https://pubs.iied.org/pdfs/G00615.pdf> (last visited on Nov 18, 2020).

our day-to-day lives. The minerals have such a significant history throughout the world that various periods are known by the names of the minerals, starting from Stone Age to Copper Age, Iron Age to Atomic Age.<sup>5</sup> Minerals are the bedrock of the industrial sector due to their use as raw materials in the manufacturing industries.<sup>6</sup> Mining of minerals is so interwoven with mankind and money, that without mining there won't be any minerals and without minerals, industrial progress is not possible and without progress, mankind has no meaning worth the name.<sup>7</sup> Thus, the development of mines and minerals is integral not just to the progress of the industrial sector and mankind but also to the economic workings of our country.

*“The real wealth of the Nation lies in the resources of the earth – soil, water, forests, minerals, and wildlife.”* ---Rachel Carson. Just like how water, forests and wildlife are conserved against its scarcity, minerals also need to be secure to have for the future demand and supply.

The focus of this paper is to understand the meaning of the term strategic minerals and strategic industries and try to establish the need for such strategic mineral security. The paper also deliberates on how a mineral attains the status of strategic minerals. This paper also brings the importance of the role played by strategic minerals in the defence industry and its significance in contributing towards national security. This paper also states the need for a legal framework governing strategic mineral security in India.

## II. STRATEGIC MINERALS

There is no common universal definition for the term ‘strategic minerals’. It changes from one nation-state to another. What has been considered strategic in one country would not be the same in another country. In general, strategic minerals are defined as those minerals that are needed to meet the industrial and essential civilian requirements along with the military and defence requirements of a nation when it is in a national emergency, which are generally inadequate to meet these needs.<sup>8</sup> In India, the term ‘strategic minerals’ was first mentioned in the Defence Science Journal in 1952 based on Dr. D.N. Wadia’s speech made at the 2<sup>nd</sup> Defence Science Conference on 23<sup>rd</sup> April 1952. According to the article in Defence Science Journal, *“Strategic Mineral include, besides materials for combat munitions, all mineral raw materials, which are required for industrial sufficiency and preparedness for Defence.”*<sup>9</sup> Simply put, strategic minerals are minerals that are very vital in preserving the sovereignty of a nation-

---

<sup>5</sup> D.D. SETH, ENCYCLOPAEDIA OF MINING LAWS (7<sup>th</sup> ed. 2020).

<sup>6</sup> TERI, *supra* note 4.

<sup>7</sup> *supra* note 5.

<sup>8</sup> RAE WESTON, STRATEGIC MATERIALS: A WORLD SURVEY (1984).

<sup>9</sup> Dr.D.N.Wadia, *Strategic Minerals of India*, 2(4) DEFENCE SCIENCE JOURNAL 198 (1952).

state.<sup>10</sup> It serves the requirements of industries that the country deems it to be strategic industries.

The strategic industry is an industry that is regarded by the government as very important for the safety and economy of the country.<sup>11</sup> Generally, strategic industries were meant in a narrow sense to be associated with the military and defence industries of a nation. With the advancement of technology, the term has been widened to include the energy industry, nuclear industry, space industry etc. Other industries such as the electronics industry, information technology and communication industry products which are highly dependent on critical minerals have utility in varied sectors including the defence sector.<sup>12</sup>

### III. MINERALS TO STRATEGIC MINERALS TO STRATEGIC MINERAL SECURITY

Minerals are those substances that are procured by the process of mining, drilling, quarrying, digging, dredging or any other operation from earth and also include mineral oils, petroleum and natural gas.<sup>13</sup> However, the Mines and Minerals (Development and Regulation) Act, of 1957 defines minerals as ‘all minerals except mineral oils’.<sup>14</sup> Generally, some minerals are identified as critical minerals (also called strategic minerals) based on the ‘criticality’ of the geography of the mineral deposits and supply availability for domestic uses of a particular region or society.<sup>15</sup> The only difference between strategic and critical minerals is that strategic minerals have some kind of relevance to the State’s defence or State’s strategic architecture while critical minerals cater to the State’s overall interest.<sup>16</sup>

The question that now arises is how do the minerals get the status of being “strategic”? It all depends on various factors such as the length of supply (short or long supply), cost, controls and utility factors. Other factors based on which the strategic status is conferred are whether the nation-state is proficient in technology and has the required financial investments. Also, there are mineral-rich and mineral-deficient nation-states. Based on the nature of mineral

---

<sup>10</sup> Suchit Sharma & Himesh Patel, *Strategic Minerals of India: A Review of Minerals Vital to India’s Strategic Strength*,

[https://www.researchgate.net/publication/325089407\\_REVIEW\\_PAPER\\_STRATEGIC\\_MINERALS\\_OF\\_INDIA\\_A\\_STRATEGIC\\_MINERALS\\_OF\\_INDIA\\_A\\_Review\\_of\\_Minerals\\_Vital\\_to\\_India's\\_Strategic\\_Strength](https://www.researchgate.net/publication/325089407_REVIEW_PAPER_STRATEGIC_MINERALS_OF_INDIA_A_STRATEGIC_MINERALS_OF_INDIA_A_Review_of_Minerals_Vital_to_India's_Strategic_Strength) (last visited on Jan 21, 2021).

<sup>11</sup> Cambridge Dictionary, *Strategic Industry*, <https://dictionary.cambridge.org/dictionary/english/strategic-industry> (last visited on Jan. 23, 2021).

<sup>12</sup> Ajay Lele, *India’s Need for Strategic Minerals*, 2 (2) NATIONAL SECURITY: VIVEKANANDA INTERNATIONAL FOUNDATION 247 (2019).

<sup>13</sup> The Mines Act (1952), §2(1)(jj).

<sup>14</sup> The Mines and Minerals (Development and Regulation) Act (1957), §3(aa).

<sup>15</sup> Mike Luft, *What are strategic Minerals?*, MINING FEEDS (Aug. 2, 2011) <https://www.miningfeeds.com/2011/08/02/critical-mineral-companies> (last visited on Jan.23, 2021).

<sup>16</sup> Lele, *Supra* note 12.

deposits of a particular nation-state, the criticality and strategic importance of minerals are being fixed. There are no proper criteria set for conferring the strategic status on minerals. However, Dr.D.N Wadia identifies 23 minerals and metals as vital for war in Defence Science Journal, namely, “Aluminium, Antimony, Coal, Chromium, Columbium, Copper, Iron, Lead, Manganese, Molybdenum, Mica, Nickel, Petroleum, Platinum, Pctash, Sulphur, Tantalum, Tin, Tungsten, Uranium, Vanadium, Zinc” of which 10 strategic minerals, namely, were identified as deficient in India.<sup>17</sup> The Planning Commission 2011 added some more minerals, namely, “Cobalt, Lithium, Germanium, Gallium Indium, Niobium, Beryllium, Bismuth and Selenium and Rare Earths”, to the list of 23 strategic minerals in its report.<sup>18</sup>

Due to the deficiency in some of the strategic minerals in India, it is essential to adopt strategic mineral security practices such as stockpiling, import of strategic minerals and more and more exploration and excavation of strategic minerals to overcome the possibility of strategic minerals scarcity at the time of war or national emergency. Hence, strategic minerals must be secured at all costs.

#### **IV. ROLE OF STRATEGIC MINERALS IN NATIONAL SECURITY AND DEFENCE INDUSTRY**

It has been said that the chief determinant of war has been the aim to dominate natural resources and that technologies have commanded the war-fighting doctrines.<sup>19</sup> Strategic minerals play a substantial in building military military-industrial complex of a nation for national security. Gone are the days when military and defence sectors were only linked to guns, tanks, weapons, missiles, submarines, ships and aircraft as the major contributors supporting the security infrastructure. At present, the notion of security has broadened from defence security to energy and environmental security<sup>20</sup>. It is the advancement in technology that is crucial to several changes in warfare tactics and has led to the enlarged reliance on strategic minerals.<sup>21</sup> Due to the national interest attached to the strategic minerals, they are often mined at unprofitable costs and stockpiled for future uses in maintaining trade and diplomacy in the international market and to preserve the nation’s war-waging capacity.<sup>22</sup>

---

<sup>17</sup> Wadia, *supra* note 9

<sup>18</sup> Planning Commission, GOI, *Report of Working Group on Mineral Exploration and Development (other than Coal & Lignite) For the XII Five Year Plan (2012-2017)*, (2011) [https://mines.gov.in/writereaddata/UploadFile/Report\\_of\\_working\\_group.pdf](https://mines.gov.in/writereaddata/UploadFile/Report_of_working_group.pdf). (last visited on Jan.20, 2021).

<sup>19</sup> AJAY LELE AND PARVEEN BHARADWAJ, *STRATEGIC MATERIALS: A RESOURCE CHALLENGE FOR INDIA* (2014) [https://idsa.in/system/files/book/book\\_strategicmaterail.pdf](https://idsa.in/system/files/book/book_strategicmaterail.pdf) (last visited on Jan.19, 2021).

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> Suchit Sharma, *supra* note 10.

Nowadays strategic minerals are used in many industries which have national interest and are associated with the defence industry. One such industry is the aerospace industry which is important not just for the defence sector but also for electronics, sensor development sector and avionics-related industries. The Air Defence sector constitutes defence forces such as unmanned aerial vehicles, combat aircraft, combat helicopters unmanned aerial attack vehicles etc and are sometimes used as civilian air assets in national emergencies.<sup>23</sup> In some cases, strategic minerals provide utility to both citizens and the military. One such dual-use technology is the satellite technologies sector consisting of rockets, sensors, robotics, satellites and radars among others.<sup>24</sup> The aerospace industry essentially has two parts, namely, (i) the manufacture of combat equipment like guns, ammunition and other weapons, (ii) facilitating military platforms such as ships, submarines, missiles, aircraft, and tanks.<sup>25</sup>

The nuclear industry plays a significant role in a nation's security. Due to the national interest attached to the nuclear industry, sources of nuclear energy, namely, radium, lithium, plutonium, uranium and thorium have been conferred the status of strategic minerals.<sup>26</sup>

## **V. NEED FOR LEGAL FRAMEWORK GOVERNING STRATEGIC MINERAL SECURITY**

India does not have any specific policy or legal framework governing strategic mineral scarcity and strategic mineral security. Though Defence Science Journal states that India is well supplied with strategic minerals and has to only stockpile the 13 deficient strategic minerals, the recent discoveries and additions to the list of strategic minerals have brought with it the need for strategic mineral security. The National Mineral Policy, 2019 emphasises the economic and strategic importance of mineral resources security. It states that the functioning of the overall economy and downstream industries is increasingly becoming dependent on the core factor of securing access to affordable, reliable, adequate and sustainable minerals. The policy also declares it a top priority to ensure long-term mineral security for the country. The government shall align downstream regulations for the exploration and development of minerals that are unavailable domestically to ensure a sufficient supply of such minerals and to facilitate the acquisition of mineral assets by public and private Indian business entities in other countries.<sup>27</sup> Though the significance of strategic mineral security has been provided as one of the objectives in the National Mineral Policy, 2019, no progressive step towards legislating and regulating it has been taken up by the legislature. However, the Ministry of Mines in India is taking steps to

---

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> National Mineral Policy, 2019

acquire strategic minerals like lithium and cobalt reserves abroad to power the country's initiative to move towards electronic vehicles.<sup>28</sup> The government is also looking into investing and acquiring other strategic minerals in which India is deficient. To improve the investments from abroad, the Ministry of Finance has now allowed 74% of foreign direct investment under automatic route in the defence industry subject to scrutiny on the grounds of security of the nation and notified the changes which are required in Foreign Exchange Management Act (Non-Debt Instruments) Rules.<sup>29</sup>

Recently, India discovered its first lithium reserve in Karnataka and is exploring four other states in India anticipating more reserves.<sup>30</sup> The discovered lithium deposits amount to a 1,600-ton reserve.<sup>31</sup> This just shows that in India more than strategic mineral scarcity, there is a lack of or rather inadequate exploration activities being done. In a country that ranks in the top 5 mineral-rich- countries in the world, India has not yet crossed the exploration stage of discovering mineral deposits to go into major excavation as only 0.14% of the discovered mineral deposit land has been leased for mining. The Ministry of Mines in its Strategic Plan recommends the expansion of resource and resource base by improving procurement of strategic minerals internationally and to increase and improve exploration activities. It also recommends internationally procuring strategic minerals that have low or no availability in India.<sup>32</sup> So, the remedies available against strategic mineral scarcity are to import and stockpile strategic minerals that are deficient in India, to undertake more and more exploration and excavation activities and to efficiently manage and balance deficient and surplus strategic resources. It is also essential to conserve and protect the environment simultaneously with the massive mining to be done. All these objectives are already being done by the government. Hence, what is required is to have a comprehensive framework to govern and regulate the field of strategic mineral mining and other activities to regulate the import, stockpiling, accounting,

---

<sup>28</sup> Rakhi Mazumdar, *India to acquire reserves of strategic minerals to power the country's move into EVs*, ECONOMIC TIMES INDUSTRY (May.30, 2019) <https://economictimes.indiatimes.com/industry/energy/india-to-acquire-reserves-of-strategic-minerals-to-power-the-countrys-move-into-evs/articleshow/69583636.cms?from=mdr> (last visited on Jan.24, 2021).

<sup>29</sup> KR Srivats, *FinMin nod for 74% FDI in Defence Sector under automatic route*, THE HINDU BUSINESS LINE (Dec.9, 2020) <https://www.thehindubusinessline.com/news/finmin-nod-for-74-fdi-in-defence-sector-under-automatic-route/article33288079.ece> (last visited on Jan.24, 2020).

<sup>30</sup> *India finds its first ever Lithium reserves in Karnataka's Mandya, Exploration on in four other states*, SWARAJYA (Jan.11, 2021) <https://swarajyamag.com/insta/india-finds-its-first-ever-lithium-reserves-in-karnatakas-mandya-exploration-on-in-four-other-states> (last visited on Jan.24, 2021).

<sup>31</sup> Sohrab Darabshaw, *India reports finding of 1,600-ton lithium deposit*, MetalMiner (Jan.15, 2021) <https://agmetminer.com/2021/01/15/india-reports-finding-of-1600-ton-lithium-deposit/> (last visited on Jan.24, 2021).

<sup>32</sup> Ministry of Mines, *Unlocking the potential of the Indian Minerals Sector*, (Nov, 2011) <https://www.mines.gov.in/writereaddata/UploadFile/Strategy%20Paper%20for%20Ministry%20of%20Mines.pdf> (last visited on Jan.22, 2021).

management and violations.

## **VI. CONCLUSION**

Strategic minerals and strategic industry must not be understood in the traditional sense to mean only those related to the military and defence industry. It includes other allied and related industries also with military interest. Strategic minerals play an important role in not just defence and national security but also in the energy sector, nuclear sector, aerospace industry and space technology. The electronics and communications industry is also interlinked with the strategic industry. India must also give more importance to imports and stockpiling to be not left defenceless at the time of war or national emergency. To regulate such minerals in an orderly manner and to give effect to the National Mineral Policy, 2019, there is a need for legislation governing the same with special importance given to coming up with criteria for conferring the strategic status on minerals. To conclude, the ancient Tamil phrase “*கற்போடும் கற்பிப்போடும்*” which literally means “*Let’s Learn and Learn more and more*” is very much apt to depict the urgent need for undertaking massive exploration activities.

\*\*\*\*\*