Critical Minerals and Geopolitics: The Quest for Global Supremacy

Introduction

The race among countries for the access of critical minerals has begun in earnest. The competition is becoming intense at a point when global major power rivalry is peaking. The competition between the United States (US) and China for global strategic influence is partly fuelled by the motivation to control the supply of critical minerals. This case study identifies critical minerals and describes their uses. More importantly, it explores the geopolitics behind the control of these minerals, tracing it to the imbalance in the global market in terms of countries' limited abilities to mine, process and refine these minerals into commercially usable forms. It discusses the country coalitions emerging around the US-China rivalry over the control of minerals. It also examines how tumultuous political developments like the Taliban's capture of power in Afghanistan and the war in Ukraine are impacting perspectives on control of minerals. The case study concludes by identifying scenarios that may emerge, as the geopolitics of access to minerals becomes more intense and complex.

What Are Critical Minerals?

The International Energy Agency defines critical minerals as those essential to the global transition to clean energy. It also indicates that the supply of these minerals is susceptible to disruptions by market shocks or geopolitical events.[1] A conceptually similar definition is provided by the International Institute for Sustainable Development that identifies these as raw materials necessary for renewable energy and clean technology and for transitioning to a sustainable, low-carbon future.[2] A wider definition characterises critical minerals as those considered critical to strategically important sectors of a country's economy.[3] In this wider sense, critical minerals can be heavily circumstance- and country-specific. It is instructive in this regard to look at the definitions released by the world's two largest economies, the US and China.

Through an Executive Order released in December 2017, the US defined a critical mineral as "a mineral identified by the Secretary of the Interior… to be (i) a non-fuel mineral or mineral material essential to the economic and national security of the United States, (ii) the supply chain of which is vulnerable to disruption, and (iii) that serves an essential function in the manufacturing of a product, the absence of which would have significant consequences for our economy or our national security."[4] The most important element of this definition is that critical minerals are those that are vital to economic and national security. This makes it essential for countries to safeguard their supply and contributes to competition among countries.

In this context, it is important to look at China's definition of critical minerals. The Ministry of National Security of China issued its definition of critical minerals in November 2023. According to this definition, critical

[1] Cyn-Young Park and Anna Cassandra Melendez, "Building Resilient and Responsible Critical Minerals Supply Chain for the Clean Energy Transition," Asian Development Bank, May 2024, https://www.adb.org/sites/default/files/publication/966351/adb-brief-298-critical-minerals-supply-chains.pdf

[2] Murtiani Hendriwardani and Isabelle Ramdoo, "Critical Minerals: A Primer," The International Institute for Sustainable Development, accessed September 4, 2024, https://www.iisd.org/system/files/2023-09/critical-minerals-primer-en.pdf

[3] Simon Dikau et al., "What are 'critical minerals' and what is their significance for climate change action?," The London School of Economics and Political Science, May 30, 2023, https://www.lse.ac.uk/granthaminstitute/explainers/what-are-critical-minerals-and-what-is-their-significance-for-climate-change-action/

[4] Office of the Federal Register, "Executive Order 13817 of December 20, 2017: A Federal Strategy To Ensure Secure and Reliable Supplies of Critical Minerals," December 26, 2017, https://www.govinfo.gov/content/pkg/FR-2017-12-26/pdf/2017-27899.pdf

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minerals are "those irreplaceable metal elements and mineral deposits used in advanced industries, such as new materials, new energy, next-generation information technology, artificial intelligence, biotechnology, edge-cutting equipment manufacturing, national defense and military sectors."[5]

While the Chinese definition is much more specific than the American definition – in terms of indicating industries where the minerals used would be 'critical' – the underlying consideration for both definitions are similar: how 'critical' these minerals are to the smooth functioning of major strategic industries in their economies. The US list includes 50 critical minerals,[6] while China's corresponding list consists of 30 minerals along with rare earths.[7] As expected, both lists include several common items.

Imbalanced Access and Global Geopolitics

The global geopolitics over critical minerals arises from a conspicuous mismatch between the natural geographical distribution of critical mineral reserves, and the abilities of countries to mine, process and refine these minerals for commercial use.

The supply chains of critical minerals comprise the upstream activities of mining the ores of the minerals from their deposits in the earth's crust; midstream activities of processing and refining the minerals; and downstream activities related to the marketing of the minerals for commercial use. The 'mine-to-metal' transition expertise is the most important proficiency required to control supply chains. Without this expertise, mined ores cannot be converted into high-grade materials for use in innumerable final products such as electric vehicles, wind turbines, smartphones and fighter aircrafts. Hence, countries with large natural reserves of critical minerals do not necessarily become vital players in the global supply chains, as many reserve-endowed countries lack the abilities for mining and processing.

Countries that have large, unexploited natural reserves of critical minerals understand that their comparative advantage from the ownership of resources is limited – unless they can access the expertise for commercial exploitation. On the other hand, countries without enough natural reserves but possess the technical abilities for mining and processing, look out for opportunities to access untapped reserves. This unleashes a fiercely competitive race among the world's financially and technically better-off economies to access untapped reserves, the bulk of which are in the developing parts of the world. A clear picture of the global imbalance in the production of critical minerals can be gleaned from Table 1.

Table 1. Leading Producers of Critical Minerals (2022)[8]

No.	Critical Mineral	Leading Producer	Share in global production (%)
1.	Aluminium	Australia	26
2.	Antimony	China	55
3.	Arsenic	Peru	46
4.	Barite	India	33
5.	Beryllium	US	64
6.	Bismuth	China	80
7.	Chromium	South Africa	44
8.	Cobalt	Congo	68
9.	Fluorspar	China	69

[5] Jessica Long and Tina Tong, "Four key critical minerals in China likely to be under the spotlight at AFA 2024," *Fastmarkets*, February 22, 2024, https://www.fastmarkets.com/insights/four-key-critical-minerals-in-china-likely-to-be-under-the-spotlight-at-afa-2024/
[6] Jason Burton, "US Geological Survey Releases 2022 List of Critical Minerals," US Geological Survey, February 22, 2022, https://www.usgs.gov/news/national-news-release/us-geological-survey-releases-2022-list-critical-minerals
[7] Jessica Long and Tina Tong, "Four key critical minerals in China".
[8] US Geological Survey, "Mineral Commodity Summaries 2023," January 31, 2023, https://pubs.usgs.gov/periodicals/mcs2023/mcs2023.pdf.

No.	Critical Mineral	Leading Producer	Share in global production (%)
10.	Gallium	China	98
11.	Germanium	China	NA
12.	Graphite	China	65
13.	Indium	China	59
14.	Lithium	Australia	47
15.	Magnesium	China	90
16.	Manganese	South Africa	36
17.	Nickel	Indonesia	48
18.	Niobium	Brazil	90
19.	Paladium	Russia	42
20.	Platinum	South Africa	74
21.	Rare earths	China	70
22.	Scandium	China	NA
23.	Tantalum	Congo	43
24.	Tellurium	China	53
25.	Tin	China	31
26.	Titanium	China	58
27.	Tungsten	China	85
28.	Vanadium	China	70
29.	Yttrium	China	NA
30.	Zirconium	Australia	36

Some of the minerals listed above are forecasted to face a surge in global demand. For example, the International Energy Agency's projections suggest that the demand for lithium – an essential material for smartphones, electric vehicles and products using rechargeable batteries – will increase more than forty-fold by 2040. Projections for graphite and cobalt suggest that their demand will go up by twenty-five fold, while the need for magnesium and nickel are projected to increase by twenty-one fold and nineteen-fold, respectively.[9] Many of these minerals are commonly used in rechargeable batteries, driving up their demand in the global clean energy transition. This puts the leading producers of these minerals in a strong position to control the supply and influence global prices to their advantage.

China's Preponderance in the Global Critical Minerals Market

China is the world's largest producer of 16 out of the 30 critical minerals listed in Table 1. Australia and South Africa lead the world in three minerals; Congo in two; and Peru, India, Indonesia, Brazil, and the US in one each, respectively. In all the minerals where China is the world's leading producer, except tin, it produces more than half of the global output, such as in antimony (55%), bismuth (80%), fluorspar (69%), gallium (98%), graphite (65%), indium (59%), magnesium (90%), rare earths (70%), tellurium (53%), titanium (58%), tungsten (85%) and vanadium (70%). This near-monopoly market power that China enjoys gives it undisputed advantage in controlling the supply chains of these minerals, especially in influencing output and price. Viewed from the perspective of US-China competition, China is miles ahead in the race.

How is China able to exert such significant influence over multiple critical mineral markets? This needs to be understood in the light of its ability to efficiently control all parts of the supply chains. While mining capacities of critical minerals display geographical concentration, processing capacities are even more localised, with China accounting for more than half of the global processing of lithium, cobalt, manganese and graphite.

[9] Simon Evenett and Johannes Fritz, "The Scramble for Critical Raw Materials: Time to Take Stock? The 31st Global Trade Alert Report," Centre for Economic Policy Research, 2023, https://mcusercontent.com/4d3c72e64f71605940b148af0/files/59f070b6-6a9a-7cc8-61ed-8d1a18f6374a/GTA31_final.pdf

Cobalt

Cobalt is a sought-after critical mineral given its extensive use in the production of rechargeable batteries that are used in many electronic devices. Congo has the world's largest reserves of cobalt, which amounted to 3.6 million metric tonnes (MT) in 2020. China's cobalt reserves estimated for the same year were around 80,000 MT, which was less than a quarter of that of Congo. But when it came to processing, China processed around 85,000 MT, which was far more than those processed by other leading processing countries (eg Finland, Canada, Belgium, Norway). Also, the processed volume of cobalt was more than the reserves that China has.[10]

This paradox is explained by the fact that several mineral ores – in this instance, cobalt – after being extracted from the mines in their host countries, like Congo, are sent to China for mid-stream processing and manufacturing.[11] China is Congo's most important destination for cobalt exports, accounting for more than 80% of total volume.[12] China's strong capacities in processing and manufacturing of Cobalt is responsible for the clout it enjoys in critical mineral supply chains. Its advantages of holding upstream natural reserves and mining of the same is combined with great efficiency in the later stages of the chain.

Lithium, Nickel and Rare Earths

The demand for lithium has skyrocketed given its indispensability in the production of electric vehicle batteries. Chile holds the world's largest reserves of lithium, followed by Australia, Argentina and China. While it mines large amounts of lithium, China's ability to process lithium is much more than all three countries. Similarly, despite Indonesia being the world's largest producer of nickel, China is far ahead in terms of refining. For rare earths, China not only holds the world's largest reserve, but also processes the most.[13]

China's undisputed control over the global minerals market is a combination of what it is naturally endowed with and the expertise it has acquired for mining and refining. The latter is a result of years of focused investment and supportive industrial policy that helped in developing excellent capacities for refining and downstream production. As a result, even for those critical minerals where it does not hold as much natural reserves as other countries (eg cobalt, nickel), it is able to emerge as one of the world's leading.

This advantage is of serious concern to the US and its allies. Indeed, the fact that China has an exceptionally strong hold over the global critical minerals market gives rise to the fear that China might 'weaponise' the advantage for geopolitical gains in a world where technological transformation and the global priority for transitioning to clean energy have greatly increased the demand for several minerals mentioned in Table 1.

Over the years, China has used its dominance in the global critical minerals market to its advantage. In 2010, it sanctioned rare earth exports to Japan after the collision of a Chinese shipping boat with Japanese coastguard vessels in East China Sea that led to the arrest of the fishing boat captain.[14] In 2020, China restricted graphite exports to Sweden over mounting bilateral tensions.[15] In 2023, it restricted exports of gallium and germanium to the US, following the US's imposition of controls on export of semiconductor and advanced computing products to China.[16] In addition, China has been investing heavily in Africa, particularly in critical

[10] Wilson Center, "Critical Minerals Map 2022," March 17, 2022, https://www.wilsoncenter.org/article/critical-mineral-maps-2022
[11] Goldman Sachs, "Resource realism: The geopolitics of critical mineral supply chains," September 13, 2023, https://www.goldmansachs.com/intelligence/pages/resource-realism-the-geopolitics-of-critical-mineral-supply-chains.html
[12] The White House, "Building Resilient Supply Chains, Revitalizing American Manufacturing and Fostering Broad-Based Growth, 100-Day Reviews under Executive Order 14017," June 2021, https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf
[13] Wilson Center, "Critical Minerals Map 2022".
[14] World Economic Forum, "How Japan solved its rare earth minerals dependency issue," October 13, 2023, https://www.weforum.org/agenda/2023/10/japan-rare-earth-minerals/
[15] The Economist, "Why is China blocking graphite exports to Sweden?," June 22, 2023, https://www.economist.com/business/2023/06/22/why-is-china-blocking-graphite-exports-to-sweden
[16] The White House, "Building Resilient Supply Chains".

mineral-rich countries like Congo, Namibia and Zimbabwe, to get access to mining and processing rights of the mineral reserves.[17] Such efforts have driven home the realisation that several global non-fuel critical mineral markets have come to be significantly controlled by China.

The US-led Minerals Security Partnership

China's predominance in the global minerals market is a cause for concern for the US and its allies. The COVID-19 pandemic has highlighted the vulnerabilities of global supply chains and the risks of excessive dependence on other countries. The response on the part of the US and its allies was to embark on a collective initiative to safeguard critical mineral supply chains through the Minerals Security Partnership (MSP).

The US-led MSP is a coalition of 'like-minded' countries brought together by the imperative of challenging China's command over critical minerals. It aims to counterbalance China's dominance over critical mineral supply chains by pooling technical and financial resources for capital-intensive mining projects in countries that hold large reserves of critical minerals. It is a result of the realisation that neither the US nor any other individual country can outcompete China.[18]

The MSP comprises a coalition of 14 countries and the European Union (represented by the European Commission). The member countries include the US, Australia, Canada, India, Japan, South Korea, the United Kingdom, Italy, France, Germany, Estonia, Finland, Norway and Sweden. The initiative aims to build sustainable critical energy supply chains by working with countries that host large reserves of critical minerals. The ostensible objective is to ensure that critical minerals are mined according to the highest environmental, social and governance (ESG) standards, and that their supplies are uninterrupted to meet the global requirements of clean energy.[19] This aim also intends to send a signal to countries, particularly in Africa and other regions where China has invested in critical mineral mining, that Chinese extractions and processing might cause irreparable damages to the environment.

The MSP plans to secure its objectives in a project-specific fashion by working with host governments to ensure that their mineral projects are built in line with the desired ESG standards. It focuses on the following minerals: lithium, cobalt, nickel, manganese, graphite, rare earth elements and copper. For these critical minerals, the MSP looks to diversify and stabilise supply chains; invest in the chains; promote ESG standards in mining, processing and recycling segments; and increase recycling.[20]

The choice of minerals to focus on is clearly indicative of MSP's thrust on clean energy production. Cobalt, graphite, lithium, nickel and manganese are used extensively for making the lithium-ion batteries in electric vehicles. The adoption of electric vehicles is a high public policy priority as countries strive to decarbonise their transport systems. Copper too is a highly efficient conduit in generating clean energy.

The group of countries figuring in the MSP include nine members from the North Atlantic Treaty Organization (NATO) – the US, Canada, Finland, France, Germany, Italy, Norway, Sweden and the United Kingdom. The NATO is a political and military alliance of the US and its ally countries from around the Atlantic Ocean committed to collective military action.[21] It also takes decisive political positions on global issues such as in the conflict between Russia and Ukraine where it has been backing Ukraine.[22]

[17] Edward Burrier and Thomas Sheehy, "Challenging China's Grip on Critical Minerals Can Be a Boon for Africa's Future," United States Institute of Peace, June 7, 2023, https://www.usip.org/publications/2023/06/challenging-chinas-grip-critical-minerals-can-be-boon-africas-future
[18] The White House, "Building Resilient Supply Chains".
[19] US Department of State, "Minerals Security Partnership," 2024, https://www.state.gov/minerals-security-partnership/
[20] US Department of State, "Minerals Security Partnership".
[21] North Atlantic Treaty Organisation, "What is NATO?," accessed September 6, 2024, www.nato.int/nato-welcome/index.html
[22] North Atlantic Treaty Organisation, "NATO's response to Russia's invasion of Ukraine," October 3, 2024, https://www.nato.int/cps/en/natohq/topics_192648.htm

Among the non-NATO members of MSP, Australia, India and Japan are with the US in the Quad. The Quad, or the Quadrilateral Security Dialogue, came up as a crisis mitigation forum in response to the Tsunami in the Indian Ocean in 2004. In more recent years, it has evolved into an alliance that works on a broad range of significant regional issues such as health, military security and economic matters. It has also prominently framed its agenda to counterbalance China's strategic influence.[23]

All the MSP members have collective defence arrangements with the US, except India.[24] But over the last couple of decades, and particularly in the years following the outbreak of the COVID-19 pandemic, the US and India have developed an exceptionally strong strategic bond, with both describing each other as "among the closest partners in the world".[25]

The MSP members not only represent a collective of US allies across Europe and Asia, they also represent a group with the common concern of safeguarding critical mineral supply. All the member countries have had difficult relations with China and are concerned that China's ability to 'weaponise' critical mineral supply chains poses a serious threat to their economic and national securities.[26]

The emergence of the MSP makes it clear that countries will be aligning around the US and China rivalry to gain control over the reserves, extraction, processing and use of critical minerals. While the MSP represents an alliance of the US and its allies, it will likely encourage China to explore similar coalitions with its allies.

Military Conflicts and their Implications on Critical Minerals Supply

The urge to control critical mineral supply chains is feeding into the US-China major power competition. The escalation of the rivalry is drawing further impetus from two specific military conflicts: the Taliban's violent capture of authority in Afghanistan in 2021, and the Russia-Ukraine war which began in early 2022. These events have strengthened the motivation behind the MSP.

Taliban's Takeover of Afghanistan

One of the earliest geopolitical challenges for the Biden Administration was the Taliban's capture of power in Afghanistan in August 2021. The development has profound geo-economic implications, including for critical mineral supply chains. The war-torn South Asian country has extensive mining and mineral resources. These include lithium, rare earth elements, gemstones, and minerals like copper, lead, zinc, coal and iron ore. The wealth of the resources is estimated to be nearly US$3 trillion and much of it is unexplored.[27]

The Taliban takeover of Afghanistan signalled to the US and its allies the importance of working together to safeguard mining and supply chains. This was iterated in September 2021, in the meeting of the Quad group of leaders, which resolved to work on enhancing the resilience of critical technology and material supply chains.[28] These objectives were recognised even before the Taliban's seizure of power, and was driven by the imperative of reducing dependency on China as a source of critical minerals.

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[23] Sheila Smith, "The Quad in the Indo-Pacific: What to Know," Council on Foreign Relations, May 27, 2021, https://www.cfr.org/in-brief/quad-indo-pacific-what-know

[24] US Department of State, "US Collective Defence Arrangements," accessed September 6, 2024, https://2009-2017.state.gov/s/l/treaty/collectivedefense/

[25] The White House, "Joint Statement from the United States and India," June 22, 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/06/22/joint-statement-from-the-united-states-and-india/

[26] Joris Teer and Chris Miller, "Action on critical minerals is needed now," *Politico*, September 28, 2023, https://www.politico.eu/article/action-critical-minerals-needed-now/

[27] Chris Dolan, "Why the US Will Never Leave Afghanistan," *The Hill*, April 15, 2021, https://thehill.com/blogs/congress-blog/foreign-policy/548557-why-the-us-will-never-leave-afghanistan/?rl=1

[28] The White House, "Joint Statement from the United States and India".

The Taliban's return to power was followed by strong international demand for economic and diplomatic sanctions. China was a notable exception in this regard as it focused on developing friendly ties with the Taliban to secure various strategic interests, including progress on the Belt and Road Initiative (BRI).[29] Another key motivation for China to engage the Taliban is controlling radical extremism in its Xinjiang province.

Landlocked Afghanistan is vital for the BRI's economic geography and land connectivity. A stable Afghanistan is essential for the brisk development of the China-Pakistan Economic Corridor and the China-Central Asia-West Asia Economic Corridor. Increasing investments in BRI projects would help China to achieve multiple goals and obtain strategic leverage with the Taliban government. Several of the investments can contribute to China's long-term objective of retaining command over the global critical minerals market.[30] China's relatively friendly relations with the Taliban enables it to access untapped mineral reserves in Afghanistan. Its recent plans to invest in lithium mining in the war-torn country reflects this advantage.[31]

Russia-Ukraine War

The Russia-Ukraine war that began in February 2022 has adversely affected various global commodity prices. Both countries are among the world's largest exporters of wheat. They also account for significant global exports of sunflower oil and barley. The Russian crude oil supply has been the most prominent source of energy for neighbouring Europe. The conflict and its attendant implications, specifically disruptions to the supply of food and energy products, have led to the sharp increase in global prices of essential items. At the same time, the conflict has also cast a deep shadow on the stability of critical mineral supply chains.

Russia holds the world's fourth largest reserves of rare earth elements after China, Vietnam and Brazil.[32] About a third (30%) of the global supply of platinum-group elements (including palladium) comes from Russia. It accounts for 13% and 11% of the global supply of titanium and nickel, respectively. It is also a major source of neon.[33] There was a significant increase in the global prices of nickel, palladium and neon,[34] alongside the increase in the prices of energy and food products, immediately after the outbreak of the conflict.

Like China, Russia also enjoys cordial relations with the Taliban government. It can use these relations along with its geographical proximity to Afghanistan to extend its control over strategic mineral reserves. While China overwhelmingly dominates the global non-fuel critical minerals market, Russia has a similar influence over fossil fuels and some critical minerals. The China-Russia alliance, in this regard, is a serious concern for the US and its allies. Following the conflict and imposition of western sanctions, China-Russia trade has expanded sharply.[35] The alliance can create stiff challenges for the US and its allies if China and Russia decide to work together on critical minerals supply chains. Like China, Russia has also been keen on exploring mining prospects in Africa, and both have been pursuing mining interests in Eurasia.[36]

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[29] The Independent, "China ready for friendly relations with the Taliban," August 16, 2021, https://www.independent.co.uk/asia/south-asia/china-taliban-afghanistan-b1903428.html

[30] Amitendu Palit, 2021, "What China-Taliban ties mean for the US, Canada and the world," Macdonald-Laurier Institute, October 22, 2021, https://macdonaldlaurier.ca/china-taliban-ties-mean-us-canada-world/

[31] Green Car Congress, "Chinese company reportedly seeks to invest $10B in Afghanistan's lithium mining sector," April 23, 2023, https://www.greencarcongress.com/2023/04/20230423-afghanistan.html

[32] Wilson Center, "Critical Minerals Map 2022".

[33] Jim Kilpatrick, "Supply Chain Implications of the Russia-Ukraine conflict," Deloitte Insights, March 25, 2022, https://www2.deloitte.com/us/en/insights/focus/supply-chain/supply-chain-war-russia-ukraine.html

[34] Ira Kalish, "How sanctions impact Russia and the global economy," Deloitte Insights, March 15, 2022, https://www2.deloitte.com/us/en/insights/economy/global-economic-impact-of-sanctions-on-russia.html

[35] Gleb Stolyarov, "As trade with China booms, some Russian companies are flourishing," *Reuters*, March 13, 2024, https://www.reuters.com/business/trade-with-china-booms-some-russian-companies-are-flourishing-2024-03-13/

[36] Ariel Cohen, "China And Russia Make Critical Mineral Grabs in Africa While the U.S. Snoozes," Forbes, January 13, 2022, https://www.forbes.com/sites/arielcohen/2022/01/13/china-and-russia-make-critical-mineral-grabs-in-africa-while-the-us-snoozes/

Conclusion

Over the last few years, and particularly since the outbreak of the COVID-19 pandemic, the global geopolitical order has experienced a significant shift. A major determinant of the shift is the intense contest among global powers over the control of critical minerals. The contest has led to the deepening of competition between the US and China, and their respective allies. In this global divide, the US, its NATO allies and regional allies from the Indo-Pacific have come together to safeguard the mining of critical minerals and their efficient use through the MSP. On the other side, China and Russia are seeking to consolidate their command of critical minerals. Their advantages of holding ample mineral reserves, along with the knowledge of extraction, mining and refining, are pitted against the efforts of a substantial number of the world's largest and wealthiest economies.

The situation is particularly complex for the US. The escalation of military violence in Asia, notably the forceful recapture of power in Afghanistan by the Taliban, and the persistence of the Russia-Ukraine conflict, has forced the US to refocus attention and stay militarily and politically engaged in West, Central and South Asia. Geopolitical priorities for the US have come a full circle in this regard.

For several years after the tragic incident of 9/11,[37] the US had remained heavily preoccupied with West and South Asia. The priority changed after Osama bin Laden's death in 2011. US interest in the region declined sharply and turned towards balancing China's influence in the Pacific. The Obama Administration's strongest commitment in this regard was its leadership of the Trans-Pacific Partnership (TPP). The TPP was a coalition of US allies drawn from the Asia-Pacific region which, while making regional rules on trade and investment, was focused on counterbalancing Chinese strategic influence.

While the US is no longer in the framework,[38] it has retained strategic interest in the region through its active role in the Quad and the Indo-Pacific Framework for Economic Prosperity (IPEF).[39] The IPEF has members that are common to the MSP – Australia, Japan, Korea, India and the US. One of the IPEF's key areas of focus is building resilience in supply chains. For instance, it makes rules to safeguard critical minerals and the key industries that rely on these minerals.

Developments in Afghanistan and Ukraine required the US to closely review its relations with countries that can influence geopolitical trajectories. These include Qatar, Iran, Uzbekistan, Turkmenistan, Tajikistan, Pakistan and Turkey. These countries, along with Egypt, are also critical in the context of the ongoing war in Gaza between Israel and Hamas. All the current conflicts are taking place in a part of the world that contains large reserves of critical minerals. Having good relations with countries in the region is essential for the US if it wants to challenge China's lead.

Contestations for control over critical mineral supply chains have led the US and other democratic middle powers to take on China's hegemony and Russia's influence in the global minerals market. Prominent middle powers like Canada, India, Japan, Korea, Australia and Indonesia are engaged in multiple efforts such as the MSP and IPEF. In the coming years, they will face the challenge of staying embedded in these supply chains, in the face of pressures generated by the US-China conflict.

The race for critical minerals also creates a further set of geopolitical complications. These are set off by resource nationalism – the tendencies of countries holding large natural deposits of critical minerals to restrict

[37] On 11 September 2001, hijackers crashed two planes into the twin towers of the World Trade Centre in New York City. This was accompanied by several explosions elsewhere in the US. The day marks one of the most devastating examples of terrorist attacks globally, and especially in the US.

[38] President Trump withdrew the US from the TPP in January 2017. The TPP now functions as the Comprehensive and Progressive Economic Partnership (CPTPP) without the US.

[39] The IPEF was announced by the US President Joe Biden at the Quad Summit in Tokyo in May 2022. The group includes Australia, Brunei, Fiji, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Philippines, Thailand, Singapore, Vietnam and the US.

access to these reserves. Some examples are already evident in Africa and Asia.[40] These tendencies might increase as countries realise the strategic value of controlling critical mineral supply chains during a worldwide pursuit of zero-emission goals, and the global major powers and their allies explore all options to engage countries that hold natural reserves of minerals.

With multilateral institutions like the World Trade Organization and the United Nations unable to get the global community to converge on solutions to end ongoing conflicts, the prospects of geopolitical rivalry over critical minerals abating in the foreseeable future appear increasingly remote.

Discussion Questions

1. How does access to critical minerals affect geopolitics and vice versa?
2. Do initiatives like the MSP help to make critical mineral supply chains more or less secure globally?
3. How do you expect the race for critical minerals to change in the future?
4. What is the fairest, most sustainable and most feasible arrangement to ensure access to critical minerals?

[40] The White House, "Building Resilient Supply Chains".