

Two Narratives of Securitization and Norm Development in Transnational Governance of Critical Mineral Resources: Toward Realpolitik or Sustainability?

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Abstract

Amid the rapidly increasing global demand for critical mineral resources driven by the energy transition and the AI revolution, critical mineral governance has become an urgent topic at the intersection of security and sustainability. Intensifying geopolitical turbulence from the Ukraine War and the US-China trade war has triggered the securitization of critical minerals, (re)shaping the core norm structure in the current transnational governance architecture. This paper examines competing approaches to securitizing critical minerals and the extent to which sustainability norms are developed in transnational governance institutions. Drawing on securitization and norm literature, this research traces institutional and discourse changes in 15 selected institutions, identified from a mapping exercise of 50 cases. The findings demonstrate two emerging securitization narratives: (a) a *hierarchical national security-centered nexus*, prioritizing national security norms over sustainability norms (norm-ordering), and (b) a *horizontal multilayered security nexus*, emphasizing multiple norms interlinked, such as human rights, sustainability, peace, and security (norm-layering). These competing approaches to securitization as a strategic practice of norm-making mirror normative fragmentations around accelerating bloc-alignments in the current geopolitical crisis. It signals a shift in the transnational governance architecture from conventional liberal multilateralism to “Realpolitik,” which could foster accountability problems.

Keywords

critical mineral resources, securitization, norm, transnational governance, geopolitics

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Introduction

At the 28th UN Climate Summit held in Dubai, the UN Secretary-General António Guterres remarked “The extraction of critical minerals for the clean energy revolution – from wind farms to solar panels and battery manufacturing – must be done in a sustainable, fair and just way.” This statement reflects growing global concern over the rapidly increasing global demand for critical minerals (e.g. copper and lithium) for the green energy transition (United Nations (UN), 2023). This statement underscores the urgent need for globally collaborative efforts to ensure critical mineral extractions without causing unintended negative social and environmental consequences. As part of this broader initiative, the UN established the Panel on Critical Energy Transition Minerals in 2023 and declared seven guiding principles, including the one for the integrity of the planet and the safeguard of environment and biodiversity (Principle 2). However, the effectiveness of such multilateral efforts remains uncertain, considering escalating geopolitical tensions and great power competition, particularly between the US and China. These dynamics are actively reshaping the architecture of global mineral resource governance and undermining the spirit of multilateralism in international society.

The new great power politics – particularly linked to the global race for green energy transition – have reinforced the securitization of critical minerals as a core national strategic interest. In 2022, the US launched the Minerals Security Partnership (MSP), a metallic NATO, with “like-minded” countries. This coalition aims to secure and diversify critical mineral supply chains and reduce the country’s dependency on China’s supply of critical minerals because China could weaponize the resources (Klinger, 2018). The Russian invasion of Ukraine in 2022 further intensified geopolitical anxieties, particularly in Europe, by exposing vulnerabilities in the EU’s energy security. This crisis catalyzed debates on a rapid energy transition and the AI revolution, more recently, which depends on a massive volume of critical mineral resources. Since then, the “national security” of critical mineral supply chains has become a dominant narrative shaping mineral resource policies across the world. This security-centered governance marks a significant shift in global extractive governance (as shown in Vivoda, 2023). This approach differs from the primary focus of many “traditional” transnational extractive governance initiatives on social and environmental problems – for example, corruption, local conflicts, human rights violations, and environmental pollution, and transparency (Haufler, 2010; H. Park, 2023a; Vijge, 2018). In this context, the current global mineral resource governance institutions can be newly understood as a contested transnational political sphere in which competing norms and security narratives are actively evolving.

Against this background, this paper aims to explore how great power politics and the consequential securitization of mineral resources shape or reshape the core normative structure of the current transnational governance of critical mineral resources in the turbulent era of geopolitics marked by the green energy transition (VanDeveer et al., 2023). Key research questions are as follows. How do great power politics and renewed geopolitical tensions reshape securitization discourses within the transnational governance of critical minerals? What norms or normative configurations are emerging, being reinforced, or contested through these evolving practices of securitization? Whose “security” counts most in the governance realm according to the norm changes? Is the governance architecture moving toward a more sustainable way?

To address the questions, this paper examines the dominant political discourses and organizational shifts associated with different types of securitizations, each of which reflects distinct normative structures in the current transnational critical mineral governance institutions. Drawing on securitization theory (Buzan et al., 1998; Buzan & Hansen, 2009) and norm contestation literature (Orchard & Wiener, 2023; Wiener, 2018), this study conceptualizes “securitization” as a process of *norm-ordering* or *norm-layering*. For instance, a national security norm may be prioritized over norms for environmental or human security, or alternatively, these multiple norms and their associated security framings may be treated equally. In this framework, securitization is not only a political act but also a mechanism through which norms are shaped, contested, and institutionalized within the global governance of critical mineral resource extraction.

The main analysis focuses on 15 transnational critical mineral governance institutions, selected from a mapping exercise of 50 governance institutions and a review of the previous literature (Auld et al., 2018; Deberdt et al., 2024; H. Park, 2023a; S. Park et al., 2024) for a systematic examination. These identified institutions are the most frequently cited cases and represent a diverse range of governance institutions. Based on a qualitative document analysis, combined with a discourse analysis and process tracing, this study examines some key securitization approaches adopted by each of the 15 selected governance institutions and how they (re)structure the normative order – that is, prioritizing certain norms over others through emerging securitization frameworks. This analysis specifically focuses on the emerging shift in global critical mineral governance after 2022, within the broader 2015 to 2025 timeline. This period marks a significant escalation in US-China tensions over access to and control of critical minerals, coinciding with heightened global energy security concerns following Russia’s invasion of Ukraine in 2022. These new dynamics demonstrate that the issue of critical mineral resources has become a national security agenda more strongly than ever before.

The specific impacts of the new geopolitical landscape and resulting securitization practices on transnational governance centering around both state and non-state actors remain insufficiently examined, despite ongoing state-centric debates about a new world order, particularly surrounding the debate on whether the liberal world order ends and a new order emerges (Cooley & Nexon, 2022; Ikenberry, 2024). More importantly, there is a lack of research on global environment and sustainability dimensions and the development of related global norms. This paper seeks to address this gap by contributing to the debate at the intersection between the new geopolitics and transnational environmental governance. Drawing on insights from global environmental politics and critical security studies, it explores a new evolution of sustainability-related “norms” reshaped through securitization. In particular, I examine whether the sustainability norms – which support the security of nature and the most marginalized people affected by mining – retain salience amid the growing narrative of “national security” in an era of great power rivalries, with an empirical focus on the issue of critical mineral resources.

This article finds that there are two competing types of securitization narratives affecting the strength and resilience of sustainability norms in transnational governance of critical mineral resources: (a) a *hierarchical national security-centered nexus* that prioritizes national security norms over sustainability norms, and (b) a *horizontal multi-layered security nexus* that emphasizes the interlinkage of multiple norms, such as human rights, environmental, and security norms. These emerging narratives are strategic tactics of governance actors to achieve their value system in the geopolitical crisis. At the same time, they can be understood

as a mirror of a transforming transnational governance architecture that shows the continuity and discontinuity of its normative structure, and new bloc-alignments not only among states but also between state and non-state actors in the crisis of multilateralism (Romaniuk et al., 2024). The following sections unpack the details about the new multidimensional complexity of transnational critical mineral governance in the intersection between geopolitical transition and green energy transition, and its implications on socio-environmental security and global sustainability governance broadly.

Transnational Critical Mineral Governance, Sustainability, and Geopolitics

Recent studies on transnational governance in mineral extraction have increasingly focused on evaluating the effectiveness and accountability of governance institutions and mechanisms from a sustainability perspective. These governance institutions often create norms, rules, sustainability guidelines, or certification programs aimed at mitigating the negative social and environmental impacts of mineral resource extraction—particularly in response to the rising global demand for critical minerals (Kramarz et al., 2024; S. Park et al., 2024). This literature body builds upon earlier case-based research on specific governance mechanisms such as the Extractive Industries Transparency Initiative (EITI; Haufler, 2010; Sovacool & Andrews, 2015; Vijge, 2018) or specific commodities such as gold mining (Auld et al., 2018; Bloomfield, 2017).

While much of the initial scholarly and policy-oriented debate centered on issues like corruption and violent conflict (e.g. the Kimberley Process), more recent research has expanded to include environmental governance and the broader socio-environmental interlinkages in extractive contexts (Diprose et al., 2022; Namaganda et al., 2023; Qurbani et al., 2021). Despite the valuable insights these studies offer – particularly in understanding the political, social, and ecological impacts of extraction at the local level or the role of specific governance initiatives – there is a lack of research that offers a more holistic, multi-scalar perspective on the evolving normative and institutional architecture of global critical mineral governance for sustainability.

To address this research gap, a recently growing body of scholarship has begun to examine the global architecture of mineral resource governance, including issues of accountability and the evolution of core governance norms and principles. These studies often employ mapping exercises to categorize different types of governance institutions and assess their sustainability-related policy measures (Auld et al., 2018; H. Park, 2023a, 2023b; S. Park et al., 2024; Srivastava & Kumar, 2024). However, this emerging literature has not yet sufficiently engaged with the international political dimension – specifically, how broader geopolitical shifts are reshaping transnational governance.

Conversely, another strand of recent scholarship focuses explicitly on the geopolitical aspects of critical mineral governance, primarily concerned with securing mineral supply chains. This literature highlights the intensifying global competition with a focus on states' industrial policy, particularly in the context of the so-called “green race” to secure minerals for renewable energy infrastructure (Allan et al., 2021; Kalantzakos, 2020) and the “digital race” linked to AI and semiconductor production (Beiser, 2024). Much of this work examines state strategies in response to geopolitical pressures (Zhu et al., 2020) or the implications for international trade policy and emerging trade blocs amid escalating trade conflicts (Vivoda et al., 2024). Yet, despite its valuable contributions, this literature often overlooks

the implications for transnational environmental governance, particularly those involving interactions between state and non-state actors across boundaries beyond the confines of national policymaking arenas.

In sum, many existing studies fall short in clearly explaining the interactions between geopolitics and sustainability in the transnational governance of critical mineral resources. While Dou et al. (2023), for example, acknowledge geopolitical challenges as obstacles to governing a “sustainable” mineral supply, the study does not provide a detailed account of how these dynamics shape governance outcomes. This research gap also reflects a broader trend in global environmental governance literature, where geopolitics and great power politics remain underexplored, with only a few notable exceptions (Allan et al., 2021; Bernstein, 2019; Falkner & Buzan, 2020; recently Sun et al., 2026). In this context, the present paper seeks to examine how emerging geopolitical tensions, which increasingly frame mineral resources through securitization, are influencing the sustainability dimensions of transnational mineral resource governance.

Different Understandings of Security and Securitization as a Practice of Norm-Making: “Norm-Ordering” and “Norm-Layering”

Recent public documents on critical mineral resources, for instance, in the US and the EU, predominantly frame the critical mineral resource agenda as a national security issue, which is a significant shift in policy discourse. Riofrancos (2023) introduces the concept of the security–sustainability nexus to understand this new securitized narrative in the politics of energy transition and critical mineral resources in the context of Global North lithium onshoring. In this regard, the Copenhagen School’s explanation of “securitization” could provide meaningful insights to understand such historical and social development of a new security agenda. From the constructivist perspective of the Copenhagen School, “security” is a socially constructed concept, not a fixed or pre-given one (Buzan et al., 1998; Buzan & Hansen, 2009). Political entities¹ define what a threat is and what should be secured through a process of a speech act (usually by elites) to a specific audience (Hansen, 2011). The notion of security thus evolves constantly through political discourses because it is based on “time- and context-specific intersubjective agreement” (Balzacq et al., 2016, p. 496).

One of the key contributions of the Copenhagen School is its “widening and deepening” security (Buzan & Hansen, 2009), allowing for the inclusion of domains beyond national security – for example, human security and environmental security (Elliott, 2015), or ecological security (McDonald, 2018). This critical security scholarship is relevant to understand better the amplifying complexity of (in)security around the issue of critical mineral resources. Different securitization narratives can be analyzed according to the key concepts of the securitization framework, which reflect on ontological differences – (a) existential threat (referent subject) & (b) referent object (i.e. what *should* or *ought to* be secured). Applying this framework allows for a more nuanced understanding of how critical mineral resources are being framed, for instance, as matters of national security versus human or environmental security, and how these framings are elevated beyond ordinary policymaking through the strategic use of speech acts.

Moreover, securitization processes are closely intertwined with social norms. More recent securitization studies seek to find the bridge by integrating the securitization framework and norm theory (see Enemark, 2017; Kaunert et al., 2022). Several scholars argue that analyzing prevailing norms helps explain why securitization is initiated (Sjöstedt, 2008; Vieira, 2007).

In this view, notably, each act of securitization constitutes a practice of norm development, encompassing processes of norm-making, thickening, challenging, spoiling, eroding, or transforming. By defining an urgent threat and a referent object, securitization elevates the salience of particular norms over others and legitimizes the appropriateness of policy discourses and actions centered on those norms.

Therefore, securitization is a context-specific social practice (Rychnovská, 2014, p. 12) and legitimized by the audience in a particular social context (Baele & Thomson, 2017), including norms (in other words, a “specific regime of truth,” Salter, 2008). Notably, Sjöstedt (2008) explains that “security issues travel” across levels and countries through a relevant norm diffusion. This debate shows that a practice of “securitization” is constituted by norms, at the same time, constitute a norm cascade (Finnemore & Sikkink, 1998) mutually. It shows why a referent object matters regarding a norm—choosing the referent object is “a *normative choice* between competing political options” (Balzacq et al., 2016, p. 514, emphasis added).

This research follows the theoretical approach that posits norms in the securitization framework and aims to develop this idea further by applying it to the case of securitization narratives in transnational governance of critical mineral resources. Particularly, I focus on how competing and contesting norms are coordinated in and through a practice of securitization of critical minerals, extended from the previous literature on norm contestation (Acharya, 2013; Wiener, 2018). As the most noticeable previous research regarding this approach, Kaunert et al. (2022) examine the securitization of the COVID-19 pandemic and find a primary norm, secondary norms, and competing secondary norms, for example, economic security and human security (Kaunert et al., 2022, p. 9). This analysis highlights a form of norm stratification, revealing which norms are elevated or marginalized during securitization.

Building on this focus on a structure of multiple norms (not a single norm), I further argue that securitization functions as a mechanism of both “norm-ordering” and “norm-layering.” *Norm-ordering* refers to the hierarchical arrangement of norms, where certain norms are prioritized over others within a given discourse or institutional context. In contrast, *norm-layering* describes a horizontal arrangement, wherein multiple norms are emphasized simultaneously and treated as complementary, without a clearly established ranking. This conceptual framework contributes to and builds upon existing literature on norm structure, particularly aligning with Winston’s (2017) argument that actors often adopt “norm clusters” rather than isolated norms when addressing complex, interlinked problems that require multifaceted solutions. The core analysis of this paper seeks to uncover such norm dynamics and developments as they interact with securitization practices—focusing especially on how the sustainability norm is positioned, negotiated, and potentially transformed within the current landscape of transnational critical mineral resource governance.

The Main Theoretical Framework

Building on the understanding of the mutually constitutive relationship between securitization and norms (i.e. norm-ordering and norm-layering), this paper conceptualizes two distinct types of securitization nexuses (Figure 1) and explores how contested “norms” (i.e. what *ought to be* secured) have been stratified and internalized by transnational mineral governance institutions within their primary securitization practices.

The first approach, a *hierarchical national security-centered nexus*, represents a form of vertical norm-ordering where national security norms are prioritized over sustainability

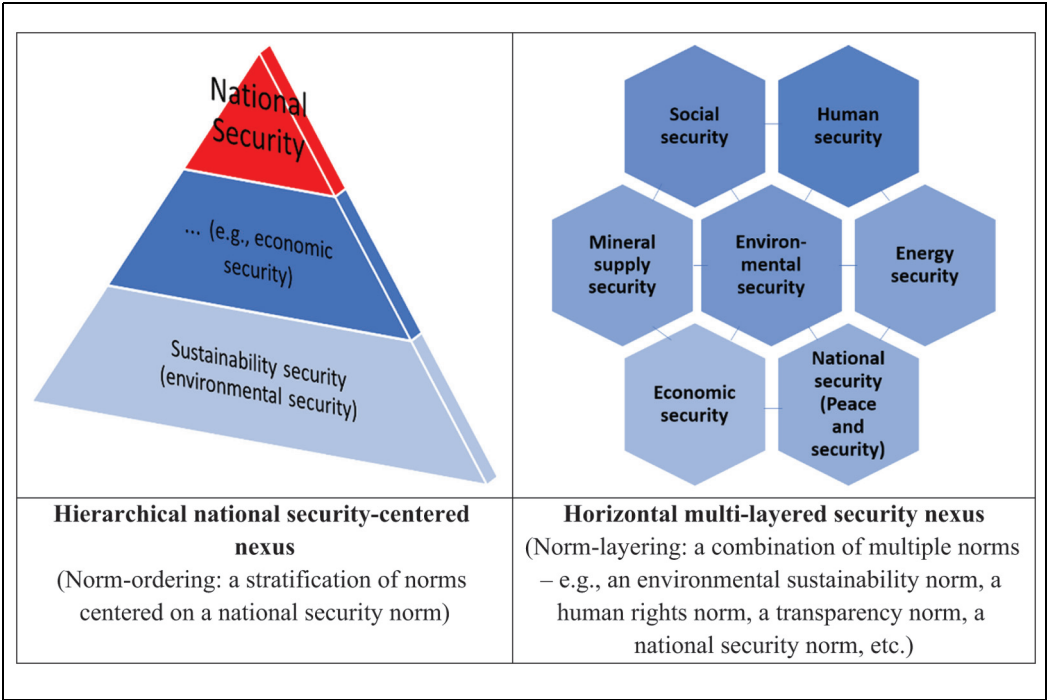


Figure 1. Two emerging key approaches to securitization in transnational critical mineral governance.

norms. In contrast, the second approach, a *horizontal multi-layered security nexus*, is a horizontal norm-layering that treats environmental and (national) security norms as equally important based on its different ontological approach to “security.” The emergence of these two securitization approaches has coincided with institutional shifts (e.g. the establishment of new governance institutions or the formation of new governance partnerships between governance institutions) in the transnational critical mineral governance architecture.

A nexus approach in securitization is not a new phenomenon, particularly given the extensive body of environmental security literature centered on “nexus thinking,” such as the water-energy-food security nexus (de Grenade et al., 2016) or the human-environmental-climate security nexus (Daoudy, 2021). This emerging pattern of securitization aligns with the concept of the “security–sustainability nexus” proposed by Riofrancos (2023), which reflects the interests of state-market coalitions in the global North as they counter China’s dominance in the global mineral supply chain.

Meanwhile, this paper understands the two securitization nexuses as strategic tactics employed by state and non-state actors navigating intensifying geopolitical turbulence across transnational mineral governance institutions. Through these nexuses, actors can strengthen or defend particular norms or configurations of norms, while shielding their practices from backlash and sustaining legitimacy. Existing norm scholarship similarly argues that norm clustering and the grafting of one norm onto others function as strategic tactics through which actors enhance the salience of specific norms (Percy & Sandholtz, 2022; Price, 1997). Building on this insight, I argue that norm clustering operates securitization practices through nexus formation as tactical measures.

Method and the Main Analytical Framework

In this paper, a “transnational critical mineral governance institution” is defined as a collaborative institution consisting of multiple types of actors (state and non-state actors) from more than one jurisdiction, which develops norms, rules, and principles to govern the global mineral resource supply chain and the entire life cycle of critical minerals.² As the first step of the analysis, I created a list of transnational critical mineral governance institutions from the previous studies that have done a similar mapping exercise (Auld et al., 2018; Deberdt et al., 2024; H. Park, 2023a; S. Park et al., 2024; Srivastava & Kumar, 2024) and compiled a total of 50 institutions (see Appendix A). Based on the list of 50 institutions, I selected 15 governance institutions representing each type of institution for in-depth case study analysis (Figure 2). To identify the most representative cases, I examined to what extent each of the 50 institutions interacts with other institutions, using 3 criteria: (a) official membership, (b) collaboration and partnership, and (c) official recognition from other institutions (e.g. in the case that another institution adopted and referred to its guideline as 1 of the primary standards). Based on the criteria, I selected 15 cases that are mostly recognized, also depending on each institutional category – (a) International Organizations (IO) and IO-led institutions, (b) US- or China-led institutions, and (c) private and hybrid institutions (consisting of private non-state actors only or with state actors). As a result of the mapping exercise, Figure 2 shows which institution is most actively interacting with other institutions and is recognized by other institutions as a significant rule provider.

In total, the 50 institutions include 7 IOs and IO-led institutions, 3 US- and China-led institutions, and 40 private and hybrid institutions (Appendix A). Considering the different numbers of institutional types, I selected the most representative 5 IOs and IO-led institutions, 3 US- and China-led institutions, and 7 private and hybrid institutions, resulting in 15 cases as below.

1. International Organizations (IOs) and IO-led institutions: Organisation for Economic Cooperation and Development (OECD), International Finance Corporation (IFC), United Nations Global Compact (UNGC), Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF), and the UN Panel on Critical Energy Transition Minerals (UN PCETM).
2. State-led transnational mineral governance institutions: MSP led by the US and China Chamber of Commerce of Metals, Minerals & Chemicals Importers & Exporters (CCCME) and Responsible Critical Mineral Initiative (RCMI).
3. Transnational hybrid and private governance initiative: International Council on Mining and Metals (ICMM), Responsible Minerals Initiative (RMI), EITI, Initiative for Responsible Mining Assurance (IRMA), London Metal Exchange (LME), International Organization for Standardization (ISO), and Copper Mark (CM).

These 15 institutions are the most frequently cross-referenced and acknowledged by other governance institutions in the dataset. For instance, the OECD and its guidance on governing mineral extractions are most broadly and predominantly highlighted by other institutions (30 of 50 institutions), both among IOs and across all types of institutions. Among private and hybrid institutions, ICMM is the most cross-referenced institution (by 20 institutions), followed by RMI (19 institutions), EITI (19 institutions), and IRMA (13 institutions). In addition to selecting the most representative governance institutions among IOs and

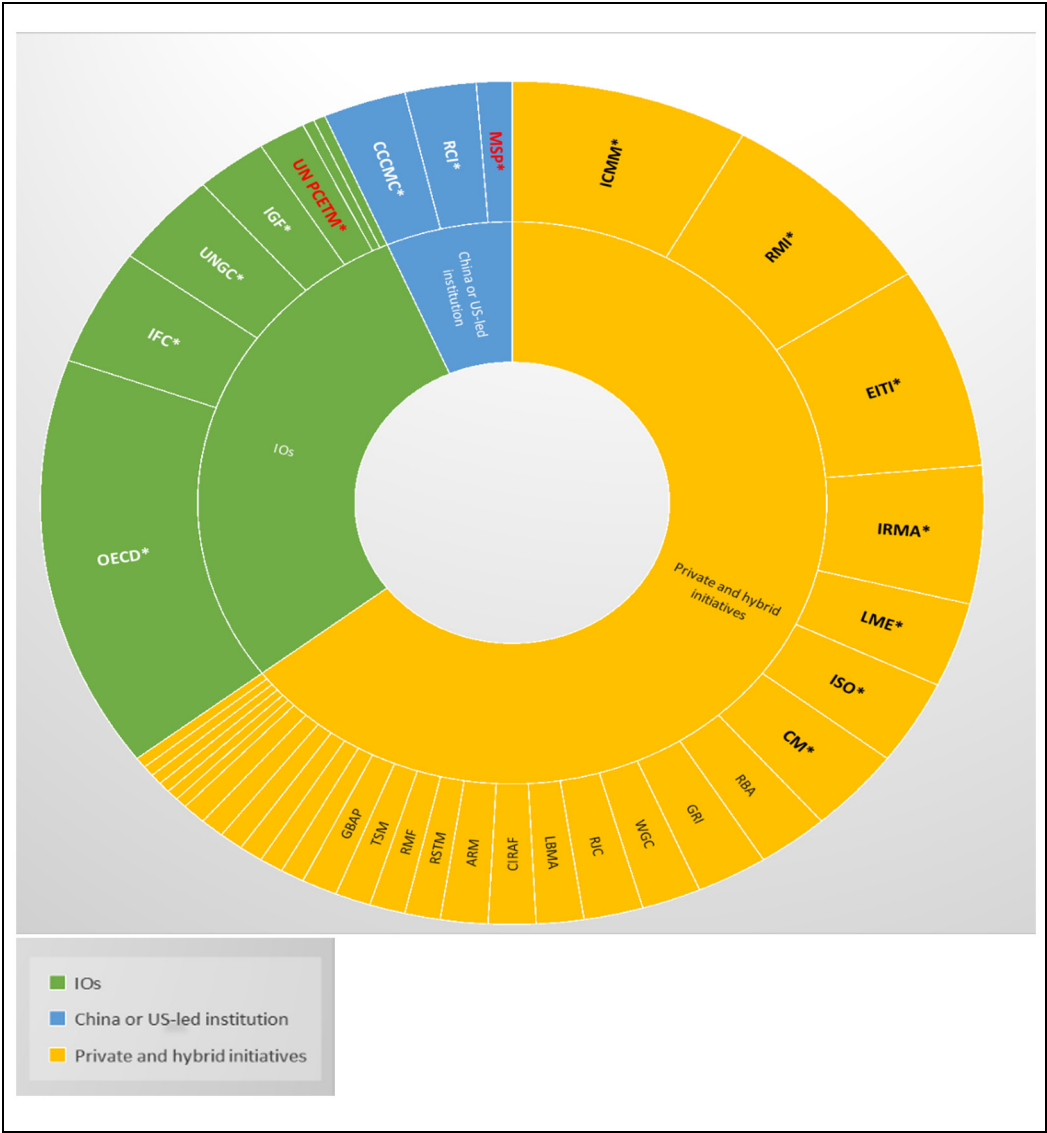


Figure 2. Case selection: Institutions most frequently referenced in transnational critical mineral resource governance.^a

^aThe 15 institutions are selected (from a total of 50 listed in Appendix A) based on how frequently they are cross-referenced by other institutions – through membership, partnership, or official recognition as key governance agencies – and are marked with an asterisk. In Figure 2, I highlight UN PCETM and MSP with red marks, as both were established after 2022, a significant tipping point in the geopolitical context of this analysis.

private and hybrid institutions, I added CCCMC, RCI, and MSP to the selected case list as they were created by the US and China. These cases are crucial for understanding the potential impact of the two most powerful countries in the global critical mineral supply chain and their influence in the global governance realm under shifting geopolitical dynamics. For

instance, the RMI has built a close partnership with CCCMC, led by China to support CCCMC's development of due diligence guidelines, considering the increasing impact of Chinese extractive industries overseas. Meanwhile, IRMA and EITI have engaged with the US-led MSP. Those interactions and collaborations could shape particular discourses of securitization, which determine what constitutes a threat and what must be secured.

To examine these dynamics, I conducted a qualitative discourse analysis (Neumann, 2008) and employed a process-tracing methodology for causal inference (Bennett & Checkel, 2014), analyzing official documents published by the selected institutions between 2015 and 2025. Supplementary data, such as publicly accessible video recordings of institutional meetings and events, were also used to cross-check and validate discursive patterns. All primary sources were systematically coded using NVivo, based on a qualitative coding scheme designed to identify discursive shifts—particularly those connecting environmental sustainability with security and securitization narratives after 2022, a year that marked a significant escalation in US-China tensions (e.g. following the U.S. Inflation Reduction Act, the Chips and Science Act, and China's retaliatory export restrictions of a few rare-earth elements). The coding criteria were guided by the following analytical questions: (a) What is designated as a threat? (b) What constitutes the referent object? (c) Does the securitization narrative reflect a hierarchy of core norms—particularly regarding what should be prioritized and valued? (d) What type of security is being articulated? Following an abductive reasoning approach (Timmermans & Tavory, 2012), this study assumes that 2022 represents a tipping point, an exogenous shock that significantly disrupted the global mineral governance architecture. Notably, in the post-2022 period, the US created the MSP and the UN initiated the UN PCETM, also included in the case selection list from the first mapping exercise (indicated by a red asterisk in Figure 2). Figure 3 illustrates the main analytical framework guiding this research.

In doing so, this analysis focused on finding any institutional changes and key emerging approaches of “securitization” as a process of *norm-ordering* or *norm-layering* in the global governance architecture of critical mineral resource extraction.

Multiple Security “Nexus” and Two Key Approaches to Securitization in Transnational Governance of Critical Mineral Resources

One of the predominant patterns observed across the 15 most representative selected cases in the post-2022 period is the emergence of a “security nexus”—a discursive linkage integrating multiple security dimensions representing multiple norms in the governance of critical mineral resources. The data indicates that the issue of critical mineral resources is increasingly framed through a multidimensional security lens, encompassing interconnections between national security, economic security, sustainability security, human security, environmental security, energy security (particularly in the wake of the Russia-Ukrainian War), and mineral supply security.

The selected cases in the analysis show two distinct types of securitization nexuses: (a) a *hierarchical national security-centered nexus* and (b) a *horizontal multi-layered security nexus*. As a quick summary of the main findings (Table 1), the majority of the selected cases (eight institutions out of 15 institutions in total) demonstrate a horizontal multilayered security nexus, with a notable new emphasis on “national security.” These cases differ from the other six governance institutions, which also integrate multilayered norms but lack a “national security” dimension and instead tend to expand upon an “ESG risk approach” (highlighting

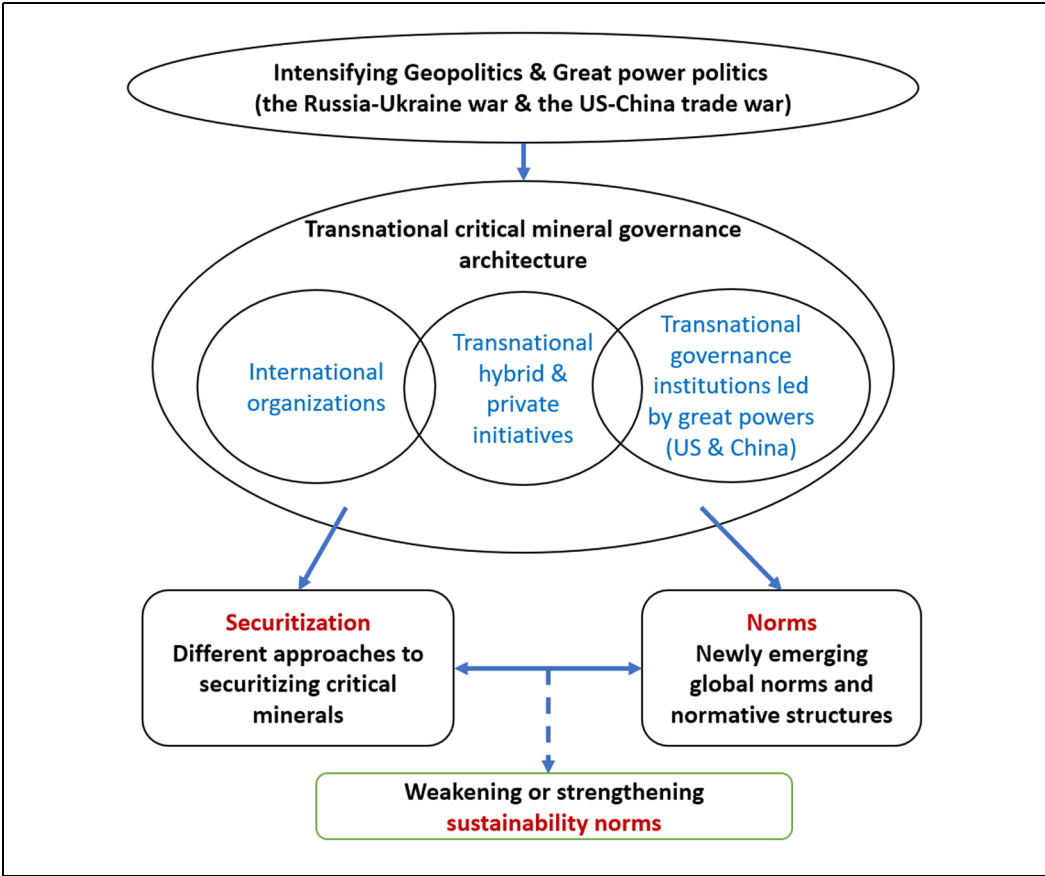


Figure 3. The main analytical framework.

environmental and social risks – being part of business risks from a corporate social responsibility perspective). The MSP initiative is the only case that explicitly demonstrates a hierarchical national security-centered nexus. However, it is worth noting that an increasing number of transnational critical mineral resource governance institutions, particularly in the post-2022 period, have begun to integrate national security considerations into their policy discourses strongly, though in multiple and divergent ways. The following section will explore these varied contexts and nuances of securitization in representative critical raw material governance institutions in the analysis.

Hierarchical National Security-Centered Nexus

The first category of securitization nexus is a hierarchical national security-centered nexus. While this approach to securitizing critical mineral resources incorporates sustainability norms, these norms function as a “secondary” consideration, ultimately serving the primary objective of national security. The MSP, newly initiated by the U.S. government amid the

Table 1. Different Types of Securitizations in the Selected 15 Governance Institutions.

Different types of securitizations	Cases	Number of institutions
Hierarchical national security-centered nexus	US-led governance institution: MSP	1
Horizontal multi-layered security nexus (Type 1) – incorporating a national security dimension	IO and IO-led institution: OECD, IGF, UN PCETM, UNGC Hybrid Institution: EITI, ISO Private Institution: ICMM, IRMA	8
Horizontal multi-layered security nexus (Type 2) –based on an ESG risk approach without a national security dimension	IO: IFC Private Institution: CM, LME, RMI China-led governance institution: CCCMC, RCI	6

Note. See more detailed reference examples of these cases in Appendix B. MSP = Minerals Security Partnership; OECD = Organisation for Economic Co-operation and Development; IGF = Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development; UN PCETM = United Nations Panel on Critical Energy Transition Minerals; UNGC = United Nations Global Compact; EITI = Extractive Industries Transparency Initiative; ISO = International Organization for Standardization; ICMM = International Council on Mining and Metals; IRMA = Initiative for Responsible Mining Assurance; IFC = International Finance Corporation; CM = Copper Mark; LME = London Metal Exchange; RMI = Responsible Minerals Initiative; CCCMC = China Chamber of Commerce of Metals, Minerals and Chemicals Importers and Exporters; RCI = Responsible Critical Mineral Initiative; ESG = High environmental, social, and governance.

intensifying rivalry over critical minerals between the US and China, exemplifies this type of securitization approach.

US-Led MSP. The MSP, a multilateral cooperative mechanism, was launched in 2022 under the Biden administration to “diversify critical minerals supply chains” (MSP, 2023a) and reduce reliance on “unreliable foreign sources” (U.S. Department of Defense, 2022). The establishment of the MSP represents one of the most significant organizational shifts in transnational critical mineral resource governance in the post-2022 period. While former U.S. President Donald Trump was the first to explicitly frame China as a security threat in the context of critical minerals (U.S. Government, 2020), the subsequent Democratic administration institutionalized the MSP to reduce U.S. dependence on critical minerals produced and exported by China. The partnership consists of so-called “like-minded” U.S. military allies, including Australia, Canada, Finland, France, Germany, Japan, Italy, the Republic of Korea, Norway, Sweden, the United Kingdom, and the European Union. National security is explicitly emphasized as a core norm of the MSP, as reflected in its name. Furthermore, the MSP reinforces the idea that effective critical mineral resource governance is a national security concern, stating: “Good governance and transparency *protect the national security interests* of countries involved in critical mineral supply chains” (MSP, 2023a, emphasis added). This statement clearly shows that the primary referent object of this securitization approach is “national security,” considering the threat from “foreign adversaries.”

Moreover, the MSP’s core principles also highlight the importance of sustainability governance aspects, but in the strong geopolitical context of the competition with China and

Russia. It says, “The focus on *strong ESG* credentials should be a priority, and such credentials should be informed by best-in-class industry-recognized ESG standards. MSP governments share a common goal of promoting secure, sustainable, diverse, and equitable supply chains” (MSP, 2023a, *italic added*). The MSP’s officially published documents repeatedly mention its goal of committing to “*high [ESG] standards.*” This framing of high standards has been shown in the MSP partnership meetings with resource-rich African countries, such as Angola, the Democratic Republic of Congo, South Africa, and Zambia. At the Investing in African Mining Indaba conference in Cape Town, the US government and its partner countries announced their shared commitment to “high environmental, social, and governance (ESG) standards” (MSP, 2023b).

Despite the MSP’s increasing emphasis on sustainability, its core governance objective remains the protection of national security. This includes reducing reliance on China and fostering cooperation among “like-minded partners”—nations that align with U.S. national security interests, often based on existing military alliances. The foundational rationale for the MSP’s establishment as a national security mechanism has been explicitly and repeatedly articulated: “Minerals are essential to the U.S. economy and to the technologies *powering America’s* future economic growth, prosperity, and *national security...* (MSP) aims to address this problem...” (MSP, 2023a, *emphasis added*). It is worth noting that the Trump administration continued to utilize the MSP initiated by the Biden administration as a diplomatic instrument for securing critical minerals for national security purposes, even as it disengaged from most sustainability-related governance initiatives. For instance, the 2025 U.S.-India Joint Statement underscores this security-driven approach (U.S. White House, 2025) and, in February 2026, the US launched the Critical Mineral Ministerial as the successor of the MSP. This reflects the MSP’s role as a geopolitical tool to support national security interests as a primary norm.

This demonstrates that MSP governance aligns with the emerging security–sustainability nexus (Riofrancos, 2023), where the emphasis on social and environmental governance also serves as a strategic advantage over rival states, particularly China. Although high sustainability standards are prominently featured, these sustainability norms (such as environmental and human rights considerations) function as secondary to the priority of national security. Within this framework, the fundamental referent object in this securitization approach (i.e. hierarchical national security-centered nexus) is the protection of national security interests from foreign adversaries, which are perceived as existential threats capable of weaponizing critical mineral supply chains. A recent think tank report shows that this national security-centered approach frequently results in the weakening of socio-environmental safeguards and an increase in corruption across 30 countries from 5 continents, including in the DRC, Afghanistan, Zambia, Zimbabwe, Indonesia, Kazakhstan, etc., by competitively obtaining fast-track mining permits among powerful states, including the US and other MSP member states (Sayne et al., 2024).

Emerging Strategic Approach to the MSP: IRMA and EITI. Another notable finding is the extent to which existing transnational private critical mineral resource governance initiatives have sought to align with the MSP and appeal to the MSP members, with the aim of having their standards more widely adopted in the new geopolitical context. This shift is particularly evident in the behavioral responses of the IRMA and the EITI.³ Interestingly, the strategies of both IRMA and EITI resemble advertising efforts, as they emphasize the benefits that MSP

members would gain by adopting and applying their standards, thereby positioning themselves to attract “new customers” as standard users.

IRMA, one of the most recognized sustainability standards in the mining sector, has actively sought a closer tie with the U.S.-led MSP. In 2023, IRMA formally approached the U.S. Department of State and requested the MSP to adopt IRMA’s sustainability standards within its governance framework, as the following statement shows. “The U.S. and the MSP should require the Initiative for Responsible Mining Assurance (IRMA)... *The U.S. and MSP should support and incentivize the IRMA Standard and system* because of its unique accountability to all sectors and alignment with the MSP’s commitment to *adhere to the highest environmental, social, and governance standards*” (IRMA, 2023a, emphasis added). This strategic engagement suggests a strategic shift by IRMA in response to contemporary geopolitical tensions and the rise of MSP based on its security–sustainability nexus approach, where sustainability norms are increasingly integrated into national security-oriented governance structures. Interestingly, when Russia invaded Ukraine in 2022, IRMA issued a statement condemning the conflict and, as part of its response, suspended auditing and membership activities for Russian-based mining companies, including Nornickel.⁴ The second case is the EITI. In a similar vein, the EITI emphasized that governments and companies in the MSP could benefit from becoming members of the EITI and adhering to the EITI standards, as doing so would enhance their eligibility to be part of the MSP. As the EITI (2024) states: “EITI reporting enables countries [and companies] to... align with the MSP’s preference for countries engaged in responsible mining initiatives.”

The strong sustainability governance measures of IRMA and EITI, in this context, could be regarded as a strategic tool for the MSP members to reinforce the primary norm for national security interests, constituting the securitization approach of MSP and the US. These cases illustrate the evolving and multifaceted political dynamics among transnational mineral governance institutions, which are increasingly shaped by emerging security-centered securitization narratives and governance frameworks. It shows how transnational private governance initiatives are adapting to the new geopolitical landscape in great power politics and developing governance norms and activities that integrate the security and sustainability dimensions of critical mineral resource extraction, via the new hierarchical national security-centered nexus approach.

Horizontal Multi-Layered Security Nexus

Another new key approach to securitization is a horizontal multilayered security nexus, which integrates multiple security referent objects by addressing various existential threats related to critical mineral resource extraction. In this securitization framework, multiple norms (e.g. a human rights norm, an environmental norm, and a norm for peace) are regarded as governance goals that should be pursued simultaneously, without a hierarchical order of priority, because of their interconnectivity. The majority of transnational mineral governance institutions analyzed in this paper adopt this critical security-based perspective, framing the critical mineral resource issues as a complex agenda encompassing multiple security concerns, rather than a singular security problem. Meanwhile, two different types of horizontal multilayered security nexus have been identified – the first (Type 1) is the horizontal nexus that incorporates a national security norm, while the second (Type 2) is the horizontal nexus that does not explicitly integrate a national security aspect, instead relying more on the traditional ESG risk approach. Most IOs and a few hybrid and private

initiatives exhibit a Type 1 nexus, whereas most private initiatives and China-led initiatives tend to display a Type 2 nexus.

Type 1: Horizontal Multi-Layered Security Nexus Incorporating a National Security Dimension (OECD, UN PCETM, UNGC, IGF, IFC, EITI, ISO, ICMM, and IRMA)

Horizontal Multi-Layered Security Nexus of IOs and Institutions Led by IOs. Since 2022, several IOs and institutions led by IOs, including the OECD and the UN, have increasingly emphasized this securitization approach, highlighting their concerns about the emerging geopolitical competitions over the global critical mineral resource supply and the growing trend of national security-centered policy approaches. Over the past few decades, OECD has played a pivotal role in developing comprehensive global guidelines for the extractive sector aimed at mitigating the social and environmental negative impacts of the mineral supply chains. Notably, the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, published in 2011, has served as a foundational sustainability framework for many other transnational and local standards, including China's CCCMC due diligence guidelines (H. Park, 2023b). The organization's emerging policy discourse now explicitly reflects the new geopolitical tensions in international politics, as well as its concerns about the potential erosion of global cooperation. The growing national security-centered securitization approach is increasingly understood as a serious governance risk to environmental and social sustainability. The following statements reflect these points. "In an increasingly competitive and contentious geopolitical context for critical mineral resources . . . *A zero-sum approach to securing mineral supplies can lead to a race to the bottom...lowering of environmental, social and governance (ESG) standards*" (OECD, 2023b, p. 11, emphasis added).

Against this backdrop, OECD has reinforced its multi-layered security nexus approach, emphasizing multifaceted security objects, based on social and environmental sustainability norms, in the post-2022 period. For instance, OECD introduced a strong environmental governance dimension with the publication of the 2023 Handbook of Environmental Due Diligence in Mineral Supply Chains. The document underscores environmental risks associated with mineral extraction by connecting to various other security risks, such as food security and water security closely, which are closely tied to people's well-being (i.e. human security) (OECD, 2023a). Building on this approach, OECD launched the OECD Initiative on Critical Minerals for Sustainable Growth and Development in 2024. This initiative demonstrates a strong human security aspect, intersecting with other security threats particularly imposed on indigenous communities, illustrated by the following statement: "Resource booms carry the risk of *dependency driven development, environmental damage, human rights abuses, political destabilization, corruption and illicit financial flows, insecurity and fragility and concentrated harm in specific communities*...mining activity can displace communities, fuel insecurity, threaten critical habitats and scar landscapes long after mines close. This is *especially pertinent for Indigenous communities*" (OECD, 2024, emphasis added).⁵ This case exemplifies a horizontal multi-layered security nexus consisting of an environmental sustainability norm, a human rights norm, and a transparency norm interconnectedly.

One of the noticeable organizational shifts in the global critical mineral resource governance architecture after 2022 is the creation of the UN Panel on Critical Energy Transition Minerals (UN PCETM) led by the UN Secretary-General, António Guterres, in 2023. It's worth noting that the UNPCETM was created shortly after the US-led MSP, emphasizing

the national security rationales in critical mineral governance. He declared one of the main purposes of this new UN body is to support the resource-rich developing countries while not repeating colonial history, based on his serious concerns about intensifying geopolitical competition over critical mineral resources. “Human security” became the central pillar of its governance approach in this context. The UN Panel published its first official report emphasizing that “*human security* should be fostered in all its forms” (UN, 2024, p. 83). In addition, the report strongly integrates the norm of global equity with energy security as reflected in the following statement: “critical minerals for the promise of *energy security* for all...and to *safeguard our fragile planet for future generations*” (UN, 2024, p. 23). Notably, the report rejects a hierarchical ordering between sustainability and national security, instead emphasizing their interdependence as mutually reinforcing conditions. The following statement shows the interconnected, multi-layered nexus between human security, energy security, environmental security, and national security: “*Sustainable development cannot be realized without peace and security, and peace and security will be at risk without sustainable development...Without proper management, increased demand for these critical energy transition minerals risks exacerbating geopolitical tensions and environmental and social challenges. These include adverse impacts on livelihoods, environment, health, human security and human rights*” (UN, 2024, pp. 15, 30, emphasis added). In a similar vein, the UNGC and the IGF also recognize the increasingly prominent national security dimension of critical mineral resources, while at the same time acknowledging its adverse implications for other sustainability norms, including social and environmental security (see Appendix B for more details). In this way, these IOs emphasize the comprehensive interplay of multiple security norms more strongly than ever before.

New Securitization Dynamics in Some Hybrid and Private Initiatives. In addition to IOs and governance institutions led by IOs, a few hybrid/private initiatives demonstrate similar multi-layered securitization dynamics. In the case of EITI, a hybrid governance initiative that includes government actors, its policy discourse since the outbreak of the Russia-Ukraine War has increasingly framed energy security as intrinsically linked to national, human, and environmental security, in a way that mirrors the approach of the UN PCETM. In a keynote speech, the current EITI Chair, Helen Clark, highlighted the importance of good mining governance in “benefiting people and the planet” as a means to achieve “energy security” through energy transition, which depends on securing “reliable mineral supplies” (Sahla & Sturman, 2022).⁶ Originally, EITI primarily focused on oil and gas extraction, particularly related to the issue of financial corruption and transparency in that sense. However, in recent years, environmental norms became one of the core governance pillars, in addition to financial transparency. The revised 2019 EITI standard introduced mandatory environmental reporting for members. Furthermore, mineral extraction became formally integrated into the main governance scope after the Board’s mandate in 2020, with an emphasis on environmental and social impacts of mining transition minerals (EITI, 2023, p. 35). Considerations of environmental security were largely absent in earlier periods (H. Park, 2023a). More notably, since 2022, this emphasis on socio-environmental aspects has newly begun to be promoted as a benefit for the national security of governments that participate in the MSP (EITI, 2024), particularly within the intensifying geopolitical context. Another example of a hybrid institution is ISO, which has begun incorporating the issue of critical mineral supply chains into its policy development. In its newly adopted 2024 document, ISO identifies this issue as both a sustainability and a security challenge, linking it to “the economic, environmental,

security and social well-being of a country, common economic region or specific region...” (ISO, 2024).

While many private initiatives show a Type 2 horizontal multi-layered security nexus (shown in the next section), ICMM and IRMA integrate multiple sustainability norms along with their strong recognition of a new national security dimension of the critical mineral resource issue. As with the EITI, IRMA has also begun to promote its standard as a good method for the US government and companies in the MSP to achieve a national security aim and socio-environmental purposes for “robust environmental, social, and financial responsibility practices” (IRMA, 2023a). ICMM’s approach also has become more strongly inter-linked with multiple security goals, such as “food security, water and livelihood security,” as reflected in its new recognition statement (ICMM, 2024). This statement says that “ICMM members recognize...people, climate and nature are inextricably linked.”⁷ Based on this approach, ICMM has actively engaged with some key UN events, for example, UNFCCC COP 29 in Baku and the UN Biodiversity Conference (COP16) in 2024.⁸ More recently, ICMM explicitly discusses that critical mineral resources became a significant issue for national security as well by incorporating the emerging frame of “critical mineral security” into its policy debate – for example, through a discourse on “minerals and metals for security” (ICMM, 2025a). In sum, since 2022, the incorporation of a national security component to justify their sustainability agendas has emerged as an explicit trend. This shift reflects these institutions’ ongoing expansion of their governance agendas and normative frameworks – an evolution of their securitization approach characterized by “norm-layering,” that is, an equivalent emphasis on a national security norm, a transparency norm, environmental norms, and a human rights norm.

Type 2: Horizontal Multi-Layered Security Nexus Based on an ESG Risk Approach Without a National Security Dimension (IFC, CM, RMI, ISO, LME, and China-Led Initiatives)

Private Initiatives Based on an ESG Risk Approach. Several key private initiatives (CM, RMI, LME) and China-led initiatives (CCCCM and RCI) commonly emphasize multiple security dimensions in their governance. However, in these cases, there has been relatively little evidence of clear shifts driven by the emerging rivalry between great powers and any institutional or discourse changes toward a national security framework after 2022. Instead, these initiatives have strengthened a nexus between human security and environmental security, in line with their overarching ESG risk management approach. In other words, although they exhibit a multi-layered nexus, this nexus does not clearly incorporate the national security dimension of mineral governance, which is a newly emerging feature observed primarily in IOs. The IFC stands out as an exceptional case in this regard.

For instance, Copper Mark, a private governance initiative for responsible value chains of copper, molybdenum, nickel, and zinc, shows this type of nexus approach. Its 2023 “Policy on Human Rights and the Environment” highlights a people and environment-centered “securitization” approach linked to copper mining – for example, “economic security” for people’s income (Copper Mark, 2023, p. 121) and “security-related impacts on affected stakeholders” (focusing on human rights, e.g. the issue of environmental defenders) (Copper Mark, 2023, p. 142). This reflects a shift away from the earlier emphasis on “environmental impacts by the company’s operations” (Copper Mark, 2020, p. 7), which lacked a clear linkage to broader security concerns. This policy direction has been developed through collaborations with other private initiatives, including RMI (e.g. the joint launch of the updated

Criteria Guide for sustainability reporting) (Copper Mark, 2023). In a similar vein, RMI has also evolved a main governance framework to address more diversified “security risks,” including human security risks, environment-related health and safety risks to local communities⁹ (see also Appendix B). A similar expansion of the scope of the traditional ESG risks can be observed in the case of the LME as well – for example, the intersection between environmental risk and human health risks arising from mining (LME, 2023).

China-Led CCCMC and RCI: A Weak Version of Securitization. Notably, China-led governance initiatives exhibit the Type 2 horizontal multilayered nexus approach, characterized by the absence of an explicit emphasis on a national security dimension. CCCMC and Responsible Cobalt Initiative (RCI) are unique China-based mineral governance bodies. Although they are not government-led institutions and an intergovernmental institution in the same sense as the MSP, they receive political and financial support from the Chinese government, and their management is strongly guided by the Communist Party’s authority, particularly the Ministry of Commerce, because of the unique governance system in China (H. Park, 2023b). Over the last decade, both institutions have gradually developed sustainability guidelines, mainly targeting China’s extractive corporations but also foreign partner companies – especially in the case of RCI, a China-led transnational initiative whose members include both Chinese and foreign corporations in the global cobalt supply chain. Their major sustainability standards have been revised and updated to incorporate slightly more stringent principles, such as its emphasis on the necessity of a third-party audits – that is, the 2014 Guidelines for Social Responsibility for Outbound Mining Investments (updated in 2017), the 2015 Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains (updated in 2020), the 2018 Cobalt Refiner Supply Chain Due Diligence Standard (updated in 2021).

Interestingly, no clear evidence of new securitization approaches has been identified in the post-2022 period in the cases of CCCMC and RCI. However, both institutions appear to align with the policy orientation of other transnational private initiatives—such as CM and RMI—by emphasizing “ESG risks,” including environmental and social risks (CCCMC, 2023). Deberdt et al. (2024) interpret this trend as part of a broader effort to standardize ESG frameworks across Chinese and Western actors within the mineral sector. One possible explanation for this alignment is the growing international engagement and socialization of Chinese governance institutions within transnational governance networks. These interactions may contribute to the convergence of normative discourses, particularly around sustainability and corporate responsibility, even in the absence of overt securitization language. One interesting event is that RCI, renamed it as the Responsible Critical Mineral Initiative in 2022, announced a creation of an accountability mechanism to mitigate harms at mining project sites with CCCMC.¹⁰ In the following year, CCCMC and RCI convened the Sustainable Mineral Supply Chain International Forum, supported by many relevant global governance institutions, including the Sino-British Cooperation in International Forestry Investment and Trade (InFIT), the Sino-German Center for Sustainable Development, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the International Labor Organization (ILO), and the World Gold Council (WGC). In this event, OECD, the Secretariat of the International Conference on the Great Lakes Region of Africa (ICGLR), the Geneva Center for Security Governance (DCAF), and the Responsible Business Alliance (RBA) also participated.¹¹

These efforts demonstrate that Chinese actors seek to enhance China’s image as a responsible player in the global mineral supply chain (i.e. China’s international reputation as a

source of its soft power) (H. Park, 2023a, 2023b), particularly since 2022. This shift was driven by mounting international criticism of environmentally and socially harmful practices of Chinese mining companies overseas (H. Park, 2023b), further triggered by the US's efforts of decoupling China. In response to these challenges, the RCI actively participated in several internationally collaborative venues – for example, in the 2024 OECD Forum on Responsible Mineral Supply Chains and co-organized some events with Copper Mark.¹² Notably, the main policy discourses of CCCMC and RCI frequently highlight “ESG risks (encompassing “human security” and “social security” related to human rights labor rights)”¹³ while framing the issues as “business risks” (CCCMC, 2020, 2023).¹⁴ The terminology of “security” (or “securing”) appears only infrequently, whereas the concept of “risks” is articulated in ways that closely align with definitions employed by other private governance institutions examined in this analysis.

Discussion

What is the impact of great power politics and new geopolitical tensions on the transnational governance of critical mineral resources? What kinds of norms or norm structure are emerging or contested in the context? Whose “security” counts most in the governance realm? Is the governance architecture moving toward a more sustainable way? Regarding these questions, this analysis shows an overarching snapshot of a new evolution of transnational critical mineral resource governance. The findings reveal two competing norm-nexuses – a hierarchical national security-centered norm-ordering and horizontal norm-layering – each emerging through different securitization approaches shaped by the evolving geopolitical landscape (Figure 1). These two emerging nexuses as new norm structures appear to be a rapidly evolving manifestation of a deeper shift from a relatively coherent liberal multilateral governance architecture toward a fragmented, bloc-aligned governance complexity.

Each act of securitization constitutes a “practice of norm development” (Enemark, 2017; Kaunert et al., 2022), insofar as it defines what ought to be secured according to the salience of particular norms over others. Considering this theoretical understanding, one of the primary findings is the increasing prominence of securitization discourses structured around a “nexus” of interconnected security dimensions tied to multiple norms, not a single norm. In the post-2022 period, it is rare to find governance narratives that frame mineral extraction through a single security lens—such as human security or national security alone. Instead, an increasing number of institutions define critical minerals as part of a multidimensional security agenda. Notably, the framing of critical minerals in relation to national security and energy security has gained significant traction since 2022 – particularly in the wake of the Russia-Ukraine war (e.g. energy-mineral-human security nexus in the EITI). Through this new practice of securitization, new norm clusters (Winston, 2017) started emerging, instead of the monolithic diffusion of a single norm.

Why does this nexus approach matter in the new governance complexity? Norm scholars suggest that norm clustering and grafting a norm onto preexisting norms is a strategic tactic of actors to enhance the salience of the norm that actors seek to strengthen (Percy & Sandholtz, 2022; Price, 1997). From this perspective, the two competing norm-nexuses via different securitization approaches identified in this research can be understood as strategic responses by varied governance institutions to navigate intensifying geopolitical turbulence. This point also resonates with the argument of Weinthal et al. (2015) that highlights the importance of a much nuanced and contextualized understanding of securitization and the

security nexus, and the nonlinear relationship among security issues. Extending from this perspective, this analysis indicates which types of governance institutions tend to enhance particular securitization narratives and norms.

First, the securitization of critical mineral resources under the US-led initiative, the MSP, can be understood as the thickening and prioritization of a national security norm over sustainability norms via a hierarchical national security-centered norm-ordering. This securitization narrative is grounded in a zero-sum game approach that prioritizes national competitiveness. Although environmental and sustainability norms are acknowledged, they are primarily framed as strategic tools to enhance national strength and counter “foreign adversaries,” as reflected in U.S. policy debates surrounding the decoupling from China. In this framework, state power and national economic growth emerge as the primary referent objects, while social and ecological sustainability function as secondary norms. This norm-stratification approach raises significant concerns about the instrumentalization of sustainability norms, where environmental and social commitments risk being subordinated or rendered symbolic, lacking robust mechanisms for accountability or enforcement. These dynamics are evident in the growing incidence of corruption and the weakening of safeguards in the DRC, cooperating in the context of its cooperation with the US through the MSP (Sayne et al., 2024). The inclusion of sustainability norms can be understood as a strategic tactic to create a good national reputation vis-à-vis foreign adversaries and to secure the supply of critical minerals from the mining states, rather than as a deep commitment to socio-ecological values as an end goal.

In other words, this new dynamic indicates a process of weakening and spoiling sustainability norms, while thickening a national security norm, through the particular “nexus” approach. As Onsmark and Björkdahl (2026) argue, norm spoiling operates through a tactic of “altering” discourse and definition that “impact how a norm is understood” (p. 62), constituting a form of “a subtle norm challenge” (p. 61). Building on this insight, I would argue that a national security-centered norm-ordering functions as a spoiling tactic by rearticulating the meaning of sustainability norms as instruments serving national security objectives, rather than directly rejecting them. Recent critical scholarship supports this interpretation, describing the current trajectory of state-led critical mineral governance as a form of “green extractivism”—a strategy aimed at consolidating national geopolitical power “in the name of planetary security” (Post & Le Billon, 2024, p. 786; also see Riofrancos, 2023; Sinclair & Coe, 2024). In this context, the role of state in sustainable mining governance is crucial but limited to strengthen social and environmental values as many previous studies highlight (Camba, 2021). Not all mineral resources are categorized as “critical” mineral resources. States define the “criticality” of mineral resources for their military and economic capacities – that is, national security, and this framing is reinforced in the close partnership with market actors, such as multinational mining corporations or foreign investors who stand to benefit financially from mineral extractions (H. Park & Lamas, 2026).

In this sense, the role of the state also cannot be explained apart from its close relationship with market actors. The cases of some hybrid and private initiatives composed largely of corporations (such as EITI and IRMA) demonstrate this tendency by proactively seeking partnerships with the US government and the US-led MSP. Notably, these initiatives strategically position themselves as credible partners or service provider for US-led efforts, particularly the MSP, regarding the MSP member states as “customers” of their ESG standards. The resulting coalitional alignments raise an additional concern regarding the

instrumentalization of sustainability norms, because the customers' foundational needs are primarily anchored in national security-related norms.

Does the emergence of national security-centered norm-ordering signal a trajectory toward the complete erosion of sustainability norms? This research data is limited to provide a definitive answer because the governance architecture remains in a phase of rapid restructuring, with its longer-term trajectory still open-ended. However, in this context, it's worth noticing the role of IOs and IO-led institutions, including the UN, the OECD, and the IGF, as actors advancing a countervailing position to the national security-centered norm-ordering. They adopted a *horizontal multilayered security nexus* approach, particularly Type 1, which incorporates both sustainability and national security norms with equal weight, explicitly challenging the prioritization of national security norms grounded in a zero-sum perspective. This framing treats sustainability norms and national security norms as complementary and equally important, in the context of just transition, rather than hierarchically ordered. Within this discourse, critical mineral extraction is conceptualized as a *threat multiplier*, echoing the framings of climate change in the critical security studies literature (Swain et al., 2023). It is portrayed as a source of multiple risks – such as threats related to human health, indigenous livelihoods, biodiversity, and social peace – thereby constructing a more expansive and interconnected understanding of (in)security. This nexus approach highlights multiple norms (particularly human rights and environmental protection) that collectively shape the securitization logic surrounding mineral extraction. This unique approach of internalizing national security norms may also function tactically in support of the protection of sustainability norms.

Therefore, this type of securitization nexus can be understood as a counter-narrative to the *hierarchical national security-centered nexus*, aiming to prevent a race to the bottom in environmental and social standards that could undermine broader sustainability goals. From the perspective of norm contestation in international relations (Wiener, 2018), this security nexus represents a competing normative approach to global governance in the mineral sector, one that seeks to uphold and advance sustainability through securitization rather than subordinating it. The IO-led securitization framing reflects the normative underpinnings of liberal institutionalism and multilateralism, favoring a win-win logic that supports a just energy transition and emphasizes inclusive, rule-based cooperation over unilateral strategic competition.

This explicit pushback against the centering of national security norms yields two implications. First, this underscores the importance of the role of IOs and IO-led governance institutions as advocates that thicken sustainability norms in the expanding complexity of global mineral governance architecture. Recent scholarship echoes this point, highlighting in particular the salient role of the UN in safeguarding global (multilateral) norms amid intensifying challenges (Goetz, 2020; Onsmark & Björkdahl, 2026). Second, the weakening of sustainability norms through the thickening and prioritizing of national security norms under the newly emerging vertical security-nexus does not necessarily result in the complete erosion or death of environmental and societal norms easily. This resilience is due in part to the role of transnational alliances in defending sustainability norms through the horizontal nexus approach – such as the UN, supported by activists. For instance, more than 14 NGOs from 24 countries have engaged with the UN Panel on Critical Energy Transition Minerals and strongly advocated sustainability norms (UN, 2024). As norm erosion literature argues, norms can be weakened, modified, or contested, but they can be resilient and rarely die or disappear (Lesch & Zimmermann, 2026; Percy & Sandholtz, 2022).

Taken together, these observations raise a remaining question of to what extent the strength of sustainability norms could be enhanced and for whom and whose security they serve – amid intensifying geopolitics surrounding critical minerals. Regarding this question, a further problem lies in the tendency of many private governance initiatives to engage with sustainability norms at a shallow level, with limited evidence of substantive reforms toward reinforcing “strong and thick” sustainability norms. Even though some key hybrid and private initiatives increasingly emphasize the expanded spectrum of sustainability norms and align with IOs in supporting these norms (as shown in the case of ICMM supporting the UN Biodiversity Conference), most private initiatives remain embedded in the pre-existing “ESG frameworks,” which primarily aim to mitigate business risks for corporate actors, corresponding to Type 2 *horizontal multi-layered security nexus*. Although the ESG frameworks reflect an inclusive understanding of sustainability, this version of the horizontal nexus often lacks a commitment to transformative governance for business interests. This characteristic risks perpetuating a persistent accountability gap within private-led governance, as highlighted in S. Park et al. (2024) and Kramarz et al. (2024). Importantly, China-led governance initiatives (CCCMC and RCI) appear to follow a similar terrain with this type of private initiatives relying on ESG frameworks (Deberdt et al., 2024), while showing the weakest level of securitization approach among the selected cases. Although some policy documents make reference to a human–social security nexus, these references are limited and largely implicit. As with the other private initiatives, these China-led cases also include a risk of accountability gaps due to their focus on “business risks.”

The mixed picture of norm development evident in the two newly emerging securitization narratives – norm-ordering and norm-layering – reflects continuity, discontinuity, and new contestations within the transnational governance under evolving geopolitical dynamics. A key shift is the centering of national security norms and the instrumentalization of sustainability norms as a tactic to alter their meaning in support of national security objectives. At the same time, a counter-narrative has emerged, primarily advanced by IOs, that seeks to preserve sustainability norms through the layering of multiple security-related norms, reflecting efforts to sustain elements of the previous liberal multilateral order. However, this approach appears to be contested and constrained increasingly. Overall, the norm contestation embodied in these two securitization approaches signals a substantive shift toward a more fragmented governance complexity, encompassing both institutional and normative fragmentation within transnational critical mineral resource governance. Moreover, this fragmentation reflects a reorganization of the governance architecture around new bloc-alignments among actors. Importantly, these geopolitical realignments extend beyond state allies and include diverse non-state actors, such as international organizations and transnational hybrid and private institutions. Therefore, the competing securitization practices as norm-making mirror a shift in the transnational governance architecture from conventional liberal multilateralism to “Realpolitik” which could foster accountability problems. This development signals a serious risk of erosion of the field of transnational sustainability governance. However, it is premature to declare the death of sustainability norms, given their demonstrated resilience and the continued support of transnational green alliances.

Conclusion

The recent political dynamics indicate that sustainability norms are in crisis due to the increasing tactics of altering and gradually eroding the norms. This is a concerning issue because of

its marginalization of justice dimensions and centering of national security interests. Going back to the main research questions, this tendency largely overlooks the security of the most affected communities and nature. Through a securitization lens, this study contributes to ongoing debates on critical mineral resource governance by offering a more comprehensive and nuanced understanding of global norm development in the increasingly complex governance landscape. The rapid emergence of competing securitization frameworks—each promoting distinct normative priorities—poses a significant political obstacle to establishing a coherent and effective global governance mechanism for critical minerals, especially one oriented toward the consolidation of robust sustainability norms. Looking ahead, a crucial question will be which securitization narrative gains dominance—that is, whose norms and what security are prioritized or institutionalized—as this will shape the trajectory of transnational critical mineral governance. The outcome will determine whether current efforts result in genuine accountability and transformation or merely empty promises for both people and the planet.

On the other hand, this research is limited in its ability to assess the extent to which the two securitization narratives are enacted and operationalized in practice. Many of the newly emerging discourses remain largely at the level of policy declarations, and several institutions are still in the process of developing concrete projects based on stated commitments. As a result, this analysis cannot yet evaluate whether the two different securitization approaches lead to a positive or negative sustainability impact on the local people and environment in the mining sites. Further empirical research is needed to assess the on-the-ground impacts of these normative shifts and how local actors react and reshape the norms and narratives developed by transnational governance institutions. In addition, greater attention must be given to how a potential change in U.S. leadership, such as the return of a Trump administration, might influence the direction of initiatives like the MSP, originally launched under the Biden administration. Would a new administration continue to support and expand the MSP, or would it pivot toward a different strategic direction? It is worth noting that the United States announced the launch of a new critical minerals trading bloc to compete with China in February 2026, at the first Critical Minerals Ministerial, as the successor to the MSP, framed by a strong national security narrative (U.S. Department of State, 2026). Additionally, how does the dismantling of USAID as a key partner of the EITI affect the governance architecture? These developments raise important questions about how other transnational hybrid and private governance initiatives will adapt to shifting geopolitical dynamics and changing donor landscapes. Further studies should also examine whether the newly configured “orders of norms” through securitization lead to positive governance effects or simply reproduce another rhetoric of greenwashing. In addition, it will be important to understand how China will engage with transnational mineral governance further in the face of institutional and normative fragmentation amid intensifying great power politics.

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Ethical Considerations

This article does not contain any studies with human participants or animals performed.

Consent to Participate

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Data Availability Statement

No new data were created in this study. Data sharing is not applicable to this article.

Notes

1. Although the traditional Copenhagen School mostly focuses on the securitization in a “state,” more recent studies apply the securitization framework to a broader scope of actors such as international organizations (e.g. the UN Security Council, Rychnovská, 2014). This research follows the extended approach.
2. In this paper, I use the terms, “critical minerals” or “critical mineral resources” to highlight the current geopolitical context in which “mineral resources” (as a broad and generic category) are situated, while maintaining terminological consistency throughout the analysis. However, I recognize that related concepts are articulated through a range of terms, each carrying distinctive nuances shaped by the priorities and values of different actors. For instance, “critical minerals” is commonly referenced in the U.S., whereas the EU adopts the term “critical raw materials.” On the other hand, the UN often mentions “critical energy transition minerals.” In this context, the criticality can be defined by actors based on their different interest, normative values, and strategic considerations.
3. The Cobalt Institute’s Cobalt Industry Responsible Assessment Framework (CIRAF) is another similar case although this institution is not included in the list of 15 governance institutions. Cobalt Institute (CI)’s CIRAF established in 2019 to “promote the responsible and sustainable production and use of Cobalt in all its forms and applications” (Cobalt Institute’s official website). Since 2022, CIRAF’s dominant policy narrative appears to increasingly focus on “the security of cobalt supply chain” aligning with the national security-centered securitization approach. Several CIRAF documents highlight its efforts to empower and influence in the US policy makers as evidenced by the following statement: “The Cobalt Institute aims to help the U.S. address its energy transformation

ambitions and strengthen its supply chain by ensuring that it recognizes cobalt as the valued, critical part of the solution it is” (CI, 2021).

4. See more details at <https://responsiblemining.net/2022/03/10/irmas-response-to-the-conflict-in-ukraine/>
5. More details are available at <https://www.oecd.org/en/topics/policy-issues/sustainable-mining-for-development.html#context> (accessed 2 October 2024). The website has been updated and the relevant information is available on the following OECD webpage, “Responsible mineral supply chains” at <https://www.oecd.org/en/topics/sub-issues/due-diligence-guidance-for-responsible-business-conduct/responsible-mineral-supply-chains.html> (accessd 26 June 2026).
6. <https://eiti.org/blog-post/helen-clark-why-minings-good-governance-critical-element-energy-transition>. As another evidence, the EITI Board hosted an event (in the 53rd EITI Board Meeting) about the topic with the European Commission, titled “Critical raw materials in times of uncertainty: Why good governance matters for energy security” (the recording is accessible): <https://eiti.org/events/critical-raw-materials-times-uncertainty-why-good-governance-matters-energy-security> (Ms Erica Westernberg said “...improving *energy security* in importing countries shouldn’t come at the cost of potentially harming *human security* in producer countries and we know commodity booms can exacerbate risks [as Francis said] corruption risk...so we have to find a way of balancing urgent energy security and climate considerations alongside long-standing development equity and anti-corruption”)
7. See more details at <https://nature.icmm.com/position-statement>
8. See more details at <https://www.icmm.com/en-gb/news/2024/newsletter-november>
9. See more details at <https://www.responsiblemineralsinitiative.org/media/docs/RRA/RRA%203.0%20Criteria.pdf>
10. More details are available at <https://www.business-humanrights.org/en/latest-news/china-top-mining-industry-association-in-process-to-set-up-grievance-mechanism-for-chinese-overseas-investment/> AND <https://www.cccmc.org.cn/kcxfzx/zyzx/al/ff8080818478e666018492952e3f01c0.html>
11. More details are available at <https://chinadevelopmentbrief.org/reports/forum-on-sustainable-mineral-supply-chains-held/>
12. More details are available at <https://www.oecd-events.org/responsible-mineral-supply-chain-2024/en/session/79171ee0-9109-ef11-96f5-000d3a29980a/making-responsible-sourcing-global>
13. <https://chinadevelopmentbrief.org/reports/forum-on-sustainable-mineral-supply-chains-held/>
14. CCCMC’s definition of risks more strongly emphasizes negative ESG-related impacts on companies, such as “reputation” compared to other cases: “Negative impacts may include harm to people...loss of reputation or legal liability...to the company, or both (CCCMC, 2020, p. 158)

References

- Acharya, A. (2013). *Rethinking power, institutions and ideas in world politics: Whose IR?* Routledge.
- Allan, B., Lewis, J. I., & Oatley, T. (2021). Green industrial policy and the global transformation of climate politics. *Global Environmental Politics*, 21(4), 1–19.
- Auld, G., Betsill, M., & VanDeveer, S. D. (2018). Transnational governance for mining and the mineral lifecycle. *Annual Review of Environment and Resources*, 43(1), 425–453. <https://doi.org/10.1146/annurev-environ-102017-030223>
- Baele, S. J., & Thomson, C. P. (2017). An experimental agenda for securitization theory. *International Studies Review*, 19, 646–666.
- Balzacq, T., Léonard, S., & Ruzicka, J. (2016). ‘Securitization’ revisited: Theory and cases. *International Relations*, 30(4), 494–531.
- Beiser, V. (2024). *Power metal: The Race for the Resources that will shape the future*. Riverhaed Books.
- Bennett, A., & Checkel, J. T. (2014). *Process tracing*. Cambridge University Press.
- Bernstein, S. (2019). The absence of great power responsibility in global environmental politics. *European Journal of International Relations*, 26(1), 8–32. <https://doi.org/10.1177/1354066119859642>
- Bloomfield, M. J. (2017). *Dirty gold: How activism transformed the jewelry industry*. MIT Press.

- Buzan, B., & Hansen, L. (2009). *The evolution of international security studies*. Cambridge University Press.
- Buzan, B., Wæver, O., & de Wilde, J. (1998). *Security: A new framework for analysis*. Lynne Rienner.
- Camba, A. (2021). The unintended consequences of national regulations: Large-scale-small-scale relations in Philippine and Indonesian nickel mining. *Resources Policy*, 74, Article 102213. <https://doi.org/10.1016/j.resourpol.2021.102213>
- China Chamber of Commerce of Metals, Minerals and Chemical Importers and Exporters (CCCME). (2017). *Guidelines for Social responsibility in Outbound Mining Investments*. <https://www.shuzih.com/pub/828c6c3612f75ee3c231d093700d0fe7/3c04895498b54a43be3ff873734d8319.pdf>
- China Chamber of Commerce of Metals, Minerals and Chemical Importers and Exporters (CCCME). (2020). *Chinese due diligence guidelines for mineral supply chain: Second edition*. <https://mneguidelines.oecd.org/chinese-due-diligence-guidelines-for-responsible-mineral-supply-chains.htm>
- China Chamber of Commerce of Metals, Minerals and Chemical Importers and Exporters (CCCME). (2023, May). *Mediation and consultation mechanism for the mining industry and mineral value chain*. https://media.business-humanrights.org/media/documents/CCCME-mediation_and_consultation_mechanism-EN-2023.pdf
- Cobalt Institute (CI). (2021, August 25). Cobalt – Part of the U.S. solution. *Cobalt Institute News*. <https://www.cobaltinstitute.org/news/cobalt-part-of-the-u-s-solution/>
- Cooley, A., & Nexon, D. H. (2022). The real crisis of global order: Liberalism on the rise. *Foreign Affairs*, 101(1), 103–118.
- Copper Mark. (2020, February). *The criteria guide for the risk readiness assessment*. https://copper-mark.org/wp-content/uploads/2020/08/Copper-Mark-Criteria-Guide_FINAL_24FEB20.pdf
- Copper Mark. (2023, October 19). *Risk readiness assessment criteria guide: Version 3.0*. https://copper-mark.org/wp-content/uploads/2023/10/RRA-v3.0-Criteria-Guide_2023.pdf
- de Grenade, R., House-Peters, L., Scott, C.A., Thapa, B., Mills-Novoa, B., Gerlak, A., & Verbist, K. (2016). The nexus: Reconsidering environmental security and adaptive capacity. *Environmental Sustainability*, 21, 15–21. <https://doi.org/10.1016/j.cosust.2016.10.009>
- Deberdt, R., DiCarlo, J., & Park, H. (2024). Standardizing “green” extractivism: Chinese & Western environmental, social, and governance instruments in the critical mineral sector. *The Extractive Industries and Society*, 19, Article 101516. <https://doi.org/10.1016/j.exis.2024.101516>
- Diprose, R., Kurniawan, N., Macdonald, K., & Winanti, P. (2022). Regulating sustainable minerals in electronics supply chains: Local power struggles and the ‘hidden costs’ of global tin supply chain governance. *Review of International Political Economy*, 29(3), 792–817.
- Dou, S., Xu, D., Zhu, Y., & Keenan, R. (2023). Critical mineral sustainable supply: Challenges and governance. *Futures*, 146, Article 103101. <https://doi.org/10.1016/j.futures.2023.103101>
- Daoudy, M. (2021). Rethinking the climate–conflict nexus: A human–environmental–climate security approach. *Global Environmental Politics*, 21(3), 4–25. https://doi.org/10.1162/glep_a_00609
- Extractive Industries Transparency Initiative (EITI). (2022, November 2). *Helen Clark on why mining’s good governance is a critical element of the energy transition*. <https://eiti.org/blog-post/helen-clark-why-minings-good-governance-critical-element-energy-transition>
- Extractive Industries Transparency Initiative (EITI). (2023). *EITI standard 2023*. https://eiti.org/sites/default/files/2024-04/2023%20EITI%20Standard_Parts1-2-3.pdf
- Extractive Industries Transparency Initiative (EITI). (2024, December 11). *Using transparency to benefit from the EU’s mineral partnerships*. <https://eiti.org/blog-post/using-transparency-benefit-eus-mineral-partnerships>
- Extractive Industries Transparency Initiative (EITI). (2025). *EITI validation guide*. <https://eiti.org/sites/default/files/EN%20Validation%20guide%202023%20EITI%20Standard.pdf>
- Elliott, L. (2015). Human security/environmental security. *Contemporary Politics*, 21(1), 11–24. <https://doi.org/10.1080/13569775.2014.993905>
- Enemark, C. (2017). Ebola, disease-control, and the security council: From securitization to securing circulation. *Journal of Global Security Studies*, 2(2), 137–149. <https://doi.org/10.1093/jogss/ogw030>

- Falkner, R., & Buzan, B. (2022). *Great powers, climate change, and global environmental responsibilities*. Oxford University Press.
- Finnemore, M., & Sikkink, K. (1998). International norm dynamics and political change. *International Organization*, 52(4), 887–917. <https://doi.org/10.1162/002081898550789>
- Goetz, A. (2020). The new competition in multilateral norm-setting: Transnational feminists & the illiberal backlash. *Daedalus*, 149(1), 160–179.
- Hansen, L. (2011). The politics of securitization and the Muhammad cartoon crisis: A post-structuralist perspective. *Security Dialogue*, 42(4–5), 357–369.
- Haufler, V. (2010). The Kimberley process certification scheme: An innovation in global governance and conflict prevention. *Journal of Business Ethics*, 89, 403–416. <https://doi.org/10.1007/s10551-010-0401-9>
- ICMM. (2024). *Position statement: Nature*. <https://nature.icmm.com/position-statement>
- ICMM. (2025a, June 4). *Transition minerals and materials: Resilient value chains and circularity*. <https://www.icmm.com/en-gb/presentations/2025/transition-minerals-and-materials>
- ICMM. (2025b, May 29). *Critical minerals for the energy transition: The case for responsible mining and increased circularity*.
- IGF. (2023). *Searching for critical minerals? How metals are produced and associated together*. <https://www.iisd.org/system/files/2023-04/searching-critical-minerals-how-metals-are-produced-together.pdf>
- IGF. (2024). *Financial benefit-sharing issues for critical minerals: Challenges and opportunities for producing countries*. <https://www.iisd.org/system/files/2024-03/financial-benefit-sharing-issues-critical-minerals.pdf>
- Ikenberry, J. (2024). Three worlds: The West, East and South and the competition to shape global order. *International Affairs*, 100(1), 121–138. <https://doi.org/10.1093/ia/iiaad284>
- IRMA. (2018). *IRMA standard for responsible mining, IRMA-STD-001*. https://responsiblemining.net/wp-content/uploads/2018/07/IRMA_STANDARD_v.1.0_FINAL_2018-1.pdf
- IRMA. (2023a, January 27). Minerals Security Partnership, U.S. should require IRMA. <https://responsiblemining.net/2023/01/27/us-and-msp-should-require-irma/>
- IRMA. (2023b). *DRAFT standard for responsible mining and mineral processing 2.0: Chapter 3.5 – Security Arrangements*. <https://responsiblemining.net/wp-content/uploads/2023/10/Chapter-3.5-Security-Arrangements.pdf>
- ISO. (2024). *IWA 45:2024(en) Sustainable critical mineral supply chains*. <https://www.iso.org/obp/ui/en/#iso:std:iso:iwa:45:ed-1:v2:en>
- Kalantzakos, S. (2020). The race for critical minerals in an era of geopolitical realignments. *The International Spectator*, 55(3), 1–16. <https://doi.org/10.1080/03932729.2020.1786926>
- Kaunert, C., Leonard, S., & Wertman, O. (2022). Securitization of COVID-19 as a security norm: WHO norm entrepreneurship and norm cascading. *Social Science*, 11(266), 1–19.
- Klinger, J. M. (2018). *Rare earth frontiers: From terrestrial subsoils to lunar landscapes*. Cornell University Press.
- Kramarz, T., Mahiques, M.V.A., Allan, T., Escosteguy, M., Kingsbury, D., & Seghezze, L. (2024). Redundancies, layers, and dilemmas: Comparing private standards and public regulations in lithium mining. *The Extractive Industries and Society*, 18, Article 101479. <https://doi.org/10.1016/j.exis.2024.101479>
- Lesch, M., & Zimmermann, L. (2025). Theories of norm strength and erosion in international relations. In S. Gholiagha, P. Orchard, & A. Wiener (Eds.), *Oxford handbook on norms research in international relations* (pp. 301–312). Oxford University Press.
- LME. (2023). *Sustainability spotlight–March 2023*. <https://www.lme.com/Sustainability-and-Physical-Markets/Sustainability/Sustainability-newsletter/March-2023>
- McDonald, M. (2018). Climate change and security: Towards ecological security? *International Theory*, 10(2), 153–180. <https://doi.org/10.1017/S1752971918000039>

- Minerals Security Partnership (MSP). (2023a, February). *Principles for Responsible Critical Mineral Supply Chains*. <https://www.state.gov/wp-content/uploads/2023/02/MSP-Principles-for-Responsible-Critical-Mineral-Supply-Chains-Accessible.pdf>
- Minerals Security Partnership (MSP). (2023b, February 7). *Minerals security partnership governments engage with African countries and issue a statement on principles for environmental, social, and governance standards*. Media Note. <https://www.state.gov/minerals-security-partnership-governments-engage-with-african-countries-and-issue-a-statement-on-principles-for-environmental-social-and-governance-standards/>
- Namaganda, E., Otsuki, K., & Steel, G. (2023). Understanding the cumulative socioenvironmental impacts of energy transition-induced extractivism in Mozambique: The role of mixed methods. *Journal of Environmental Management*, 338, 1–10.
- Neumann, I. B. (2008). Discourse analysis. In A. Klotz & D. Prakash (Eds.), *Qualitative methods in international relations*. Research Methods Series (pp. 61–77). Palgrave Macmillan. https://doi.org/10.1057/9780230584129_5
- OECD. (2023a). *Handbook on environmental due diligence in mineral supply chains*. OECD Publishing. <https://doi.org/10.1787/cef843bf-en>
- OECD. (2023b). *OECD briefing note: Responsible is reliable*. https://mneguidelines.oecd.org/duediligence/Responsible_is_Reliable.pdf
- OECD. (2024). Sustainable mining for development. Retrieved October 2, 2024, from <https://www.oecd.org/en/topics/policy-issues/sustainable-mining-for-development.html#context>
- Onsmark, L., & Björkdahl, A. (2026). Norm Spoiling and Backlash: Women's rights at risk at the UN. In A. Björkdahl, J. Lorentzen & I. Skjelsbæk (Eds.), *Backlash against the women, peace and security agenda* (pp. 57–77). Norm Research in International Relations. Springer.
- Orchard, P., & Wiener, A. (2023). Norms and norm contestation. In P. A. Mello & F. Osterman (Eds.), *Routledge handbook of foreign policy analysis methods*. Taylor & Francis. <https://doi.org/10.4324/9781003139850-6>
- Park, H. (2023a). China in transnational extractives governance: A mapping exercise. *The Global Environmental Politics*, 23(4), 94–118.
- Park, H. (2023b). Global norm-maker as China's new brand? An analysis of the responsible cobalt initiative. *The Chinese Journal of International Politics*, 16(2), 129–156.
- Park, H., & Lamas, I. A. (2026). Sustainability governance in the mining sector: Who is concerned? In S. Mena, C. Y. A. Inoue, K. Amaeshi & D. Jayaram (Eds.), *Handbook of research on sustainability and governance* (pp. 215–228). Edward Elgar Publishing.
- Park, S., Kramarz, T., & Johnson, C. (2024). Governance gaps and accountability traps in renewables extractivism. *Environmental Policy and Governance*, 34(6), 754–767. <https://doi.org/10.1002/eet.2122>
- Percy, S. V., & Sandholtz, W. (2022). Why norms rarely die. *European Journal of International Relations*, 28(4), 934–954.
- Post, E., & Le Billon, P. (2024). The 'Green War': Geopolitical metabolism and green extractivisms. *Geopolitics*, 30(2), 760–800. <https://doi.org/10.1080/14650045.2024.2385411>
- Price, R. (1997). *The chemical weapons Tabo*. Cornell University Press.
- Qurbani, I. D., Heffron, R. J., & Rifano, A. T. S. (2021). Justice and critical mineral development in Indonesia and across ASEAN. *Extractive Industries and Society*, 8(1), 355–362.
- RCI & CCCMC. (2023). *Chinese due diligence guidelines for mineral supply chain*. <https://www.shuzih.com/pub/be5308b5badcc0e51953493d8b927935/082f6716dcb54aafa8cc11f5a4ac53f9.pdf>
- RMI. (2025, April 30). *Responsible minerals assurance process: Supply chain due diligence plus*. https://www.responsiblemineralsinitiative.org/media/docs/standards/RMISupplyChainDueDiligencePlus-Module_April2025.pdf
- Riofrancos, T. (2023). The security–sustainability nexus: Lithium onshoring in the global north. *Global Environmental Politics*, 23(1), 20–41.
- Romaniuk, P., Lyon, A., Edgar, A., Stiles, K., & Mills, K. (2024). Multilateralism in a time of crisis: Editor's introduction to a special issue of global governance. *Global Governance: A Review of*

- Multilateralism and International Organizations*, 30(2), 179–186. <https://doi.org/10.1163/19426720-03002012>
- Rychnovská, D. (2014). Securitization and the power of threat framing. *Perspectives*, 22(2), 9–32.
- Sahla, S., & Sturman, K. (2022, November 2). Mission critical: Without responsible mining, there is no energy transition. *EITI blog post*. <https://eiti.org/blog-post/mission-critical-without-responsible-mining-there-no-energy-transition>
- Salter, M. B. (2008). Securitization and desecuritization: A dramaturgical analysis of the Canadian air transport security authority. *Journal of International Relations and Development*, 11(4), 321–349.
- Sayne, A., Fitzgerald, S., & Shipley, T. (2024, December). *Ten red flags for corruption risk in transition minerals licensing and contracting* (pp. 1–37). Natural Resource Governance Institute. https://resourcegovernance.org/sites/default/files/2024-12/Ten_Red_Flags_Corruption_Risk_Transition_Minerals.pdf
- Sinclair, L., & Coe, N. M. (2024). Critical mineral strategies in Australia: Industrial upgrading without environmental or social upgrading. *Resources Policy*, 91, Article 104860. <https://doi.org/10.1016/j.resourpol.2024.104860>
- Sjöstedt, R. (2008). Exploring the construction of threats: The securitization of HIV/AIDS in Russia. *Security Dialogue*, 39(1), 7–29.
- Sovacool, B. K., & Andrews, N. (2015). Does transparency matter? Evaluating the governance impacts of the extractive industries transparency initiative (EITI) in Azerbaijan and Liberia. *Resources Policy*, 45, 183–192. <https://doi.org/10.1016/j.resourpol.2015.04.003>
- Srivastava, N., & Kumar, A. (2024). Critical minerals for energy transition: The emerging regime complex. *The Extractive Industries and Society*, 20, Article 101536. <https://doi.org/10.1016/j.exis.2024.101536>
- Sun, Y., Clapp, J., Andonova, L., Dauvergne, P., Jayaram, D., Mbeva, K., Paterson, M., Wijaya, T., & Wu, F. (2026). Global environmental politics amid geopolitical turbulence. *Global Environmental Politics*, 26, 255–269. <https://doi.org/10.1162/GLEP.a.731>
- Swain, A., Bruch, C., Ide, T., Lujala, P., Matthew, R., & Weinthal, E. (2023). Environment and security in the 21st century. *Environment and Security*, 1(1–2), 3–9. <https://doi.org/10.1177/27538796221149609>
- Timmermans, S., & Tavory, I. (2012). Theory construction in qualitative research: From grounded theory to abductive analysis. *Sociological Theory*, 30(3), 167–186. <https://doi.org/10.1177/0735275112457914>
- UNGC. (2023a, February 27). *Business activism amid war: 4 shifts emerging from Ukraine*. <https://unglobalcompact.org/news/5011-02-27-2023>
- UNGC. (2023b). *Just transition in supply chains: A business brief*. https://info.unglobalcompact.org/I/591891/2023-08-01/57vpqn/591891/1690920956vGn85vvS/Just_Transition_in_Supply_Chains_Business_Brief.pdf
- United Nations (UN). (2023, December 2). COP28: Extraction of minerals needed for green energy must be ‘sustainable and just’, says Guterres. *UN News*. <https://news.un.org/en/story/2023/12/1144267>
- United Nations (UN). (2024, September 11). *Resourcing the energy transition: Principles to guide critical energy transition minerals toward equity and justice*. UN Secretary-General’s Panel on Critical Energy Transition Minerals. https://www.un.org/sites/un2.un.org/files/report_sg_panel_on_critical_energy_transition_minerals_11_sept_2024.pdf
- U.S. Department of Defense. (2022, December 19). *DoD Issues \$24.8M critical minerals award to Perpetua resources*. <https://www.defense.gov/News/Releases/Release/Article/3249350/dod-issues-248m-critical-minerals-award-to-perpetua-resources/>
- U.S. Department of State. (2026, February 4). *2026 critical minerals ministerial*. <https://www.state.gov/releases/office-of-the-spokesperson/2026/02/2026-critical-minerals-ministerial/>

- U.S. Government. (2020). *Executive order 13953*. <https://www.iaa.org/policies/15532-executive-order-13953-addressing-the-threat-to-the-domestic-supply-chain-from-reliance-on-critical-minerals-from-foreign-adversaries-and-supporting-the-domestic-mining-and-processing-industries>
- U.S. White House. (2025, February 13). *United States-India joint leaders' statement*. <https://www.whitehouse.gov/briefings-statements/2025/02/united-states-india-joint-leaders-statement/>
- VanDeveer, S., Park, H., Sun, Y., & Betsill, M. (2023). Extractive industries and mineral resources: Turbulence all around In P. Dauvergne & L. Shipton (Eds.), *Global environmental politics in a turbulent era* (pp. 75–89). EE Elga.
- Vieira, M. A. (2007). The securitization of the HIV/AIDS epidemic as a norm. *Brazilian Political Science Review*, 1(2), 137–181.
- Vijge, M. J. (2018). The (dis)empowering effects of transparency beyond information disclosure: The extractive industries transparency initiative in Myanmar. *Global Environmental Politics*, 18(1), 13–32. https://doi.org/10.1162/GLEP_a_00442
- Vivoda, V. (2023). Friend-shoring and critical minerals: Exploring the role of the minerals security partnership. *Environmental Research & Social Science*, 100, Article 103085. <https://doi.org/10.1016/j.erss.2023.103085>
- Vivoda, V., Matthews, R., & McGregor, N. (2024). A critical minerals perspective on the emergence of geopolitical trade blocs. *Resources Policy*, 89, Article 104587. <https://doi.org/10.1016/j.resourpol.2023.104587>
- Weinthal, E., Zawahri, N., & Sowers, J. (2015). Securitizing water, climate, and migration in Israel, Jordan, and Syria. *International Environmental Agreements*, 15, 293–307. <https://doi.org/10.1007/s10784-015-9279-4>
- Wiener, A. (2018). *Contestation and constitution of norms in global international relations*. Cambridge University Press.
- Winston, C. (2017). Norm structure, diffusion, and evolution: A conceptual approach. *European Journal of International Relations*, 24(3), 638–661. <https://doi.org/10.1177/1354066117720794>
- Zhu, Z., Dong, Z., Zhang, Y., Suo, G., & Liu, S. (2020). Strategic mineral resource competition: Strategies of the dominator and nondominator. *Resources Policy*, 69, Article 101835. <https://doi.org/10.1016/j.resourpol.2020.101835>

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Appendix A

Table A1. The List of 50 Transnational Critical Mineral Resource Governance Institutions.

Category	TEGI	Abbreviation	Establishment year
International organization	International Finance Corporation	IFC	2006
	Environmental, Health, and Safety Guidelines for Mining		
	Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development	IGF	2005
	International Seabed Authority Mining Code	ISA	1994
	Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises (2011)	OECD	1961
	OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (2011)		
	OECD Due Diligence Guidance for Meaningful Stakeholder Engagement in the Extractive Sector (2015)		
	OECD Practical Actions for companies to identify and address the worst forms of child labor in mineral supply chains (2017)		
	The International Union for Conservation of Nature (IUCN) Global Business and Biodiversity Programme	GBBP	2003
	United Nations Global Compact	UNGC	2000
	UN Panel on Critical Energy Transition Minerals	UN PCETM	2024
	Mineral Security Partnership	MSP	2023
US-led institution	CCCMC The CCCMC Guidelines for Social Responsibility Outbound Mining Investment (2014)	CCCMC	2014
	CCCMC Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains (2015)		
	Responsible Critical Mineral Initiative (Previously Responsible Cobalt Initiative)	RCI	2016

(continued)

Table A1. (continued)

Category	TEGI	Abbreviation	Establishment year
Transnational private and hybrid initiatives	Africa Mining Vision	AMV	2009
	Alliance for Responsible Mining	ARM	2004
	Fairmined Initiative		
	Aluminum Stewardship Initiative	ASI	2012
	Better Gold Initiative	BGI	2013
	Cobalt Institute's the Cobalt Industry Responsible Assessment Framework	CIRAF	2019
	Copper Mark	CM	2020
	Diamond Development Initiative International	DDI	2002
	Dow Jones Sustainability Index	DJSI	1999
	Drive Sustainability Partnership	DSP	2011
	The 1st raw material initiative launched (2017)		
	Equator Principles	EP	2003
	Equitable Origin	EO	2009
	Extractive Industries Transparency Initiative	EITI	2003
	FTSE Russell	FTSE	2001
	FTSE4 Good Index		
	FTSE Gold Mines Index		
	Global Battery Alliance Principles	GBAP	2017
	Global e-Sustainability Initiative	GeSI	2001
	Global Reporting Initiative	GRI	1997
	Initiative for Responsible Mining Assurance	IRMA	2006
	International Council on Mining and Metals	ICMM	2001
	International Cyanide Management Code	ICMC	2000
	International Tin Research Institute Tin Supply Chain Initiative	ITRI	2010
	International Resource Panel	IRP	2007
	International Organization for Standardization	ISO	2004 (updated in 2015)
	ISO14001 Standard for Environmental Management Systems		
	Kimberley Process	KP	2003
	London Bullion Market Association's Program	LBMA	1987
	London Metal Exchange	LME	1877
	Responsible Sourcing Requirements (2019)		
	Mining Association of Canada-Towards Sustainable Mining	TSM	2004
	Prospectors & Developers Association of Canada e3 plus	PDAC	2009
	Public-Private Alliance for Responsible Minerals Trade	PARMT	2011
	Responsible Artisanal Gold Solutions Forum	RAGS	2018

(continued)

Table A1. (continued)

Category	TEGI	Abbreviation	Establishment year
	(The first “conflict-free” supply chain from an artisanal mine in the Democratic Republic of Congo to US retailers in 2018)		
	Responsible Business Alliance	RBA	2004
	Responsible Jewelry Council	RJC	2009
	Responsible Minerals Initiative	RMI	2008
	Responsible Mining Foundation	RMF	2012
	Responsible Mining Index (2017)		
	Responsible Steel TM	RSTM	2015
	Social Accountability 8000 Standard	SA8000	1997
	Solutions for Hope Tantalum Project	SHTP	2011
	The International Tin Association	ITS	2018
	Code of Conduct		(ITS established in 1932)
	Voluntary Principles on Security and Human Rights	VPSHR	2000
	World Economic Forum Responsible Mineral Development Initiative	RMDI	1987
	World Gold Council	WGC	1987
	Conflict-free Gold standard (2011)		
	The Guidance Note on Non-GAAP Metrics – all-in sustaining costs and all-in costs: 2013 (updated in 2018)		
	Responsible Gold Mining Principles (2019)		

Appendix B

Table B I. Different Types of Securitization in the Selected 15 Governance Institutions with Reference Examples.

Governance Institutions	Type of institution	What approach to securitization?		Example	Multi-dimensions of securitization	References
		1.	2.			
MSP	US-led institution	Hierarchical national security-centered nexus	Horizontal multi-layered security nexus (including a national security dimension)	"Good governance and transparency protect the national security interests of countries involved in critical mineral supply chains." (MSP, 2023a)	The priority of national security, connected to supply security, human security, economic security, environmental security	MSP (2023a).
OECD	IO	Horizontal multi-layered security nexus (based on an ESG risk approach without a strong national security dimension)	Horizontal multi-layered security nexus (based on an ESG risk approach without a strong national security dimension)	"In an increasingly competitive and contentious geopolitical context for mineral resources, it is important to recognize that these risks and accompanying disruptions affect mineral producing and destination countries alike. A zero-sum approach to securing mineral supplies can lead to a race to the bottom , involving heightened trade tensions, bidding wars, resource nationalism, protectionism and lowering of environmental, social and governance (ESG) standards that ultimately can undermine the security of these supply chains" (OECD, 2023b, p. 11)	national security; supply security; environmental security; human security (e.g. fragile communities); energy security; economic security	OECD (2023b).

(continued)

Table B I. (continued)

What approach to securitization?				
Governance Institutions	Type of institution	Example	Multi-dimensions of securitization	References
UN PCETM	IO	1. Hierarchical national security-centered nexus		
		2. Horizontal multi-layered security nexus (including a national security dimension)		
		3. Horizontal multi-layered security nexus (based on an ESG risk approach without a strong national security dimension)		
UN PCETM	IO	2	"... Sustainable development cannot be realized without peace and security, and peace and security will be at risk without sustainable development ... Without proper management, increased demand for these critical energy transition minerals risks exacerbating geopolitical tensions and environmental and social challenges. These include adverse impacts on livelihoods, environment, health, human security and human rights. (UN, 2024, pp. 15, 30) "... the conflict [the war in Ukraine] has produced alarming cascading effects across a world already battered by COVID-19 and climate change. The risks of generations lost and SDGs derailed, as well as waves of food insecurity, energy shortages, unfolding debt crises and social unrest, are real." (UNGC, 2023a) " ... integrate risk management through just transition principles" (UNGC, 2023b, p. 15)	national security; supply security; economic security; environmental security; climate security; human security (including human rights and human health) UN (2024).
UNGC	IO	2	national security; supply security; energy security; social security; economic security; human security (human rights); environmental security; climate security	UNGC (2023a). UNGC (2023b).

(continued)

Table B1. (continued)

What approach to securitization?				
1. Hierarchical national security-centered nexus				
2. Horizontal multi-layered security nexus (including a national security dimension)				
3. Horizontal multi-layered security nexus (based on an ESG risk approach without a strong national security dimension)				
Governance Institutions	Type of institution	Example	Multi-dimensions of securitization	References
IGF	IO	2 "In some jurisdictions, securing the supply of critical minerals is considered an issue of national security (both in terms of supply security and in the military sense ... However...states must carefully consider the benefits and challenges of this approach to financial benefit sharing ." (IGF, 2024, p. 15) ".... job security ... From a policy perspective, there are important economic and environmental risks that need to be addressed" (IGF, 2023 pp. 11, 21) "IFC supports countries and mining companies in implementing responsible and safe mining practices that seek to maximize contributions to jobs and economic growth in developing countries, while minimizing environmental and social development risks ." (IFC, 2023) "... This matters for the energy transition, and also for energy access and security ... A lack of energy security hurts both households and businesses. " (EITI, 2022)	national security; supply security; economic security (including job security); environmental security; human security (including human rights and gender-based violence)	IGF (2023). IGF (2024).
IFC	IO	3	economic security; environmental security (including water scarcity and biodiversity loss); climate security; human security (human rights)	IFC (2023).
EITI	Hybrid institution	2	national security; energy security; human security; environmental security; social security	EITI (2022). EITI (2024). EITI (2025).

(continued)

Table B I. (continued)

Governance Institutions	Type of institution	Example	Multi-dimensions of securitization	References
	What approach to securitization? 1. Hierarchical national security-centered nexus 2. Horizontal multi-layered security nexus (including a national security dimension) 3. Horizontal multi-layered security nexus (based on an ESG risk approach without a strong national security dimension)	"Both the EU and the MSP have committed to promoting good governance, transparency and sustainability through partnerships...EITI reporting enables countries to demonstrate alignment with the EU's principles for mineral partnerships ... EITI membership also aligns with the MSP's preference for countries engaged in responsible mining initiatives." (EITI, 2024) [Regarding the validation of the multistakeholder engagement] "In recognition of the International Covenant on Civil and Political Rights, freedom of expression, operation and association may be limited by lawful means necessary in the interests of national security or public safety, public order, the protection of public health or morals or the protection of the rights and freedoms of others." (EITI, 2025, p. 22) "Required disclosures ... This must include information on rules regarding environmental permits and licenses, including social, gender and environmental impact assessments" (EITI, 2025, p. 49)		

(continued)

Table BI. (continued)

Governance Institutions	Type of institution	What approach to securitization?	Example	Multi-dimensions of securitization	References
		1. Hierarchical national security-centered nexus			
		2. Horizontal multi-layered security nexus (including a national security dimension)			
		3. Horizontal multi-layered security nexus (based on an ESG risk approach without a strong national security dimension)			
IRMA	Private institution	2	"... noting that IRMA is a possible "method for U.S. companies and the Federal Government to ensure that minerals are being sourced from mines with robust environmental, social, and financial responsibility practices ..." (IRMA, 2023a) "The scope of the security risk assessment includes, but need not be limited to ... the political and security context in the host country context (e.g. the human rights records of the government and public and private security forces ... paying particular attention to risks to women, children, and other vulnerable groups" (IRMA, 2023b, p. 6) "... Collaborate with those ASM entities with whom it can legally and legitimately engage to develop and implement a plan to eliminate or mitigate the most significant risks, and over time, address other social and environmental risks related to those ASM operations" (IRMA, 2018, p. 113)	national security, connected to supply security, human security, economic security, environmental security	IRMA (2023a) IRMA (2023b). IRMA (2018).

(continued)

Table B I. (continued)

What approach to securitization?				
Governance Institutions	Type of institution	Example	Multi-dimensions of securitization	References
ICMM	Private institution	1. Hierarchical national security-centered nexus		
		2. Horizontal multi-layered security nexus (including a national security dimension)		
		3. Horizontal multi-layered security nexus (based on an ESG risk approach without a strong national security dimension)		
ISO	Hybrid institution	2	national security; critical mineral security (supply chain security); human security (including "food, water, and livelihood security"); climate security; environmental security	ICMM (2025a). ICMM (2025b). ICMM (2024).
		"... we're in the middle of a situation where somebody is trying to strike a peace deal with another country because of the metals and minerals they have, or trade metals for security , or annex another country as your 51st state" (ICMM, 2025a). "Both primary mining that embraces circularity strategies, and secondary recoveries are needed to build critical mineral security and support the transition to a net-zero future." (ICMM, 2025b) "ICMM members recognise that: People, climate and nature are inextricably linked ... Healthy functioning natural systems are essential for alleviating poverty, ensuring food, water and livelihood security ... " (ICMM, 2024) "... the [critical mineral] supply of which is deemed to be at risk and absence could have detrimental consequences to a commercial entity and to the economic, environmental, security and social well-being of a country , common economic region or specific region..." (ISO, 2024)	national security; economic security; environmental security; climate security; human security (human rights); food security	ISO (2024).

(continued)

Table BI. (continued)

What approach to securitization?				
Governance Institutions	Type of institution		Example	Multi-dimensions of securitization
CM	Private institution	3		
			"Implement a corporate or site-level management system for the effective prevention, mitigation and remedy of risks and impacts related to environment, social, and governance (ESG) issues . . . To implement a management system to prevent and mitigate risks . . . the respect of human rights, including the respect of environmental and human rights defenders (CM, 2023, pp. 18, 144)	human security, environmental security, social security
			"Category 1 critical ESG risks relate to serious human rights abuses and direct or indirect support to non-state armed groups . . . Category 2 ESG risks relate to direct or indirect support to public or private security forces, money laundering, bribery, non-payment of taxes, fees and royalties to governments, and severe harm to human rights and the environment, including . . . irreversible or long-term damage to the environment and ecosystems." (RMI, 2025, p. 14)	human security, environmental security, social security
RMI	Private institution	3		

(continued)

Table B I. (continued)

What approach to securitization?				
Governance Institutions	Type of institution		Example	Multi-dimensions of securitization
LME	Private institution	3	"High alkalinity and high caustic content in bauxite residue cause environmental risk for fertile soil and groundwater contamination. The caustic soda or sodium hydroxide ("NaOH") content in bauxite residue leads to human health risks." (LME, 2023)	environmental security (including biodiversity); climate security; human security (including health, gender-related risks and child rights)
				LME (2023).
CCCMC	China-led institution	3	"3.5.2 Ensure formal, equal and fair employment . . . avoid labor and social security obligations by using certain types, such as false apprenticeship schemes . . . Be cautious of mining in areas which pose high environmental risks . . . developing a comprehensive plan on how to mitigate negative impacts, including impacts related to human rights, labor, employment, gender, health, and conflict" (CCCMC, 2017, pp. 24, 34, 35) - The later documents in 2023 show the similar approach.	social security; environmental security; human security (in the context of ESG risks, but no mentioning climate risk)
				CCCMC (2017), CCCMC (2023).

(continued)

Table B I. (continued)

Governance Institutions	Type of institution	What approach to securitization? 1. Hierarchical national security-centered nexus 2. Horizontal multi-layered security nexus (including a national security dimension) 3. Horizontal multi-layered security nexus (based on an ESG risk approach without a strong national security dimension)	Example	Multi-dimensions of securitization	References
RCI	China-led institution	3	"By implementing this Chinese Guidelines, companies can expect the following benefits... Improve the supply chain management system to strengthen the awareness and control of <i>mineral supply chain risks</i> ..." (including "Type 1 risks" such as " <i>human rights violations or conflicts of armed groups</i> " and "Type 2 risks" such as " <i>environmental and social risks</i> ") (RCI and CCCMC, 2023, pp. 9, 54)	social security; environmental security; human security (in the context of ESG risks, but no mentioning climate risk)	RCI & CCCMC (2023).

Note. The bold and italic text indicates each securitization narrative and the corresponding types of risks that are highlighted.