Guest Column

Strategic Autonomy Starts Beyond the Mine

By Angela Tritto

Image Credit: istock/baranozdemir

Southeast Asia's strategic autonomy in critical minerals cannot rest on linear extraction and conventional downstreaming alone. It will depend on shifting from green extractivism toward circular strategies that keep minerals in the region through repair, reuse, remanufacturing, and recycling.

Rare earths are not geologically rare and critical minerals are only critical because of specific narratives that make them so. The first time the United States government formulated **a critical mineral list was in World War I (WWI)**, when it believed that the demand for five minerals—tin, nickel, platinum, nitrates, and potash—will outpace supply. Hence, these renewed talks of critical minerals may as well constitute a type of **"narrative warfare," in critical minerals**, signalling that we are, indeed, in a time of conflict and instability, which are driving a renewed focus on securitisation.

Where does Southeast Asia stand here? Three main observations follow. Most countries in this region are constantly hedging among geopolitical powers. In the context of critical minerals the US has been very active in signing critical mineral frameworks or Memorandums of Understanding (MOUs) with countries like Thailand, Malaysia, and the Philippines. Yet some of these countries do not preclude collaborating with China, or any other country for that matter. Second, the critical mineral debate in Southeast Asia often assumes that the resource ownership translates into strategic leverage. While this may be partly true, the current models risk that countries in the region will become **suppliers of inputs for other countries' industrial ambitions** while capturing only a narrow share of the value chain. Worse still, parts of Southeast Asia risk becoming sacrifice zones for a new era of green extractivism, absorbing the environmental and social costs of supplying other countries' energy transitions. Third, and connecting to this latter point, countries in the region are prioritising old thinking tied to linear extraction models, with very few examples of strategies that showcase innovative approaches to mineral needs.

Yet these are becoming increasingly important not only because the "critical" in critical minerals is a moving target that has jumped several times, as shown by EV battery technologies, but also because **these new extractive narratives bear the same old extractive costs**.

The downstreaming (or, rather up, mid, down, and side streaming) trap

Downstreaming is the new buzzword. Indonesia's 2014 ban on the export of raw nickel sparked a wave of similar policies in the region and around the world. Vietnam and Malaysia have tightened their exports of rare-earth and likewise, introduced domestic content requirements. They are also fostering partnerships with Australia, Korea, and Japan for processing. Meanwhile, Thailand is moving into EV and battery manufacturing, while Singapore is increasingly developing capabilities in battery recycling, resource recovery, and advanced materials. Together, these examples illustrate that strategic upgrading can occur through multiple pathways beyond mineral extraction and refining.

The above is quite promising, as, rather than pursuing midstream activities, such as refining or smelting, which have triggered a ramp-up of captive coal power plants and high environmental and social costs, other countries in Southeast Asia are developing complementary capabilities and ecosystems.

The recent **ASEAN Minerals Cooperation Action Plan (AMCAP-IV) 2026-2030** underscores the view that Southeast Asia's strategic autonomy may be best safeguarded through a regional system that fosters cooperation, rather than through mineral-resource nationalism. Upstream-to-downstreaming is an important feature of AMCAP-IV, which aims to create new opportunities from exploration to the production of mineral-based chemicals and mineral-related equipment and services. A **scoping study by ASEAN and the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF)** examined opportunities for ASEAN to develop integrated regional supply chains from raw materials to manufacturing and capture a larger share of the downstream technology value chain in five connected sectors: e-mobility, lithium-ion batteries, semiconductors, solar photovoltaic (PV), and wind power.

While the above is good news, the reality is that several Southeast Asian countries remain heavily reliant on foreign investment to pursue these strategic endeavours. Downstreaming does not necessarily bring autonomy. If anything, Indonesia's case shows the opposite, as the country is now caught in two dependencies: from Chinese investments, which dominate the nickel ecosystem; and from nickel itself, as most of the downstreaming revolves around a single mineral whose long-term strategic value remains uncertain as battery technologies diversify toward sodium-ion batteries, Lithium Iron Phosphate (LFP) chemistries,

and other alternatives. Unlike previous commodity booms, Southeast Asia is increasingly becoming not only a producer but also a consumer of clean technologies. Growing domestic markets for electric vehicles, batteries, and renewable energy equipment create opportunities to retain materials within the region through repair, reuse, remanufacturing, and recycling. This could gradually reduce reliance on imported inputs and transform the region from a supplier of critical minerals into a more self-sustaining ecosystem.

Circularity as the missing link of strategic autonomy

The AMCAP-IV reinforces the use of sustainability language in critical mineral strategies. It states that mineral development should be anchored in key strategies, including the Framework for the Circular Economy of the ASEAN Economic Community, the ASEAN Strategy for Carbon Neutrality, and the ASEAN Blue Economy Framework. Yet it still largely approaches mineral security through expanding supply and processing capacity. Recycling, urban mining, material substitution, and resource efficiency remain secondary considerations rather than central pillars of regional mineral governance.

In a **recent policy brief**, I highlighted how, in the context of critical minerals, several **new developments** are reshaping pathways and trajectories, and generating considerable innovation. From exploring secondary mining, to creating new, rare-earth-free materials to substitute existing ones and scale-up the recovery of tailings, industrial waste, and end-of-life products. Hence, the next frontier of mineral security may not be opening new mines but recovering minerals already embedded in products, infrastructure, and waste streams through recycling, urban mining, materials efficiency, and innovative new ways to avoid linear models of extraction. This is particularly relevant for Southeast Asia because of the rapidly growing and largely unmanaged electronic waste streams and expanding EV markets, which could provide important inputs for minerals in the near future. Looking into such alternatives would drive sustainable innovation that maximises resource use and avoids endless extraction that undermines the region's nature and biodiversity, as well as its security, given that mining has, thus far, produced protests and environmental harm. Ironically, in pursuit of other countries' interests, countries across the Global South could literally **extract their own security**.

Hence, circularity here should not be intended as environmental policy only, but as industrial, and ultimately, security policy. Countries such as Japan, Korea, and the European Union have already embedded recycling and circularity mechanisms into their resource policies. Noteworthy efforts are underway in Singapore and Vietnam.

Singapore's growing investments in battery recycling and resource recovery illustrate how mineral security can be pursued without relying exclusively on new extraction. But more is needed, and this is another area where regional cooperation could advance development and innovation.

Ultimately, Southeast Asia's strategic autonomy will not be determined solely by how much it extracts. It will depend on whether governments can enhance their state capacity to regulate and monitor investment, foster innovation, coordinate industrial upgrading, and ensure that the benefits of mineral development are broadly distributed. In a world shaped by US–China rivalry, autonomy is not about choosing sides but about reducing dependence and establishing self-sustaining and resilient systems. As the region becomes a market for electric vehicles, batteries, and renewable-energy technologies, a shift is necessary. Rather than viewing critical minerals solely as export commodities, policymakers could begin treating them as strategic resources to be retained, recovered, and reintegrated into regional production systems. This would make autonomy not only a question of supply but also of stewardship.

Angela Tritto is an Assistant Professor of Human-Nature Interactions and Biodiversity at the Institute of Asian Studies, University of Brunei Darussalam.