ISSUE BRIEF

Rethinking Green Industrial Policy in ASEAN: Regionalism in the global dis-order

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AUTHORS : Hadi Rahmat Purnama, Nur Firdaus, Pihri Buhaerah, Rachmi Hertanti, Rizky Banyualam and Salsabila Aziziah

COPY EDITOR: Deborah Eade
DESIGN LAYOUT : Leo
ILLUSTRATION : Agah Nugraha Muharam

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Content

ILLUSTRATION By: Agah Nugraha Muharam

SECTION 1

Background

The climate crisis has catalysed a global shift towards greening and decarbonising industrial production. Global investments in clean energy surged by 17% in 2023 to USD 1.77 trillion (BloomberNEF,2024). The United Nations Environment Programme (UNEP) argues that green industrial policy (GIP) can serve as a driving force for structural transformation, enabling countries to diversify their economies, strengthen resilience, and align their productive capacities with a low-carbon future (Altenburg and Assmann, 2017). In this context, GIP has emerged as a promising framework for economies across the Global South to advance up value chains and reduce their vulnerability to external economic shocks.

GIP has shown encouraging areas of interest across both advanced and low- and middle-income countries (LMICs), even aimed at heightened geopolitical and geo-economics tensions (Fang, 2025). Although green technology remains dominated by the advanced economies, policy incentives for GIPs, including clean technology, electric vehicles (EVs), semiconductors, and related industries, have been increasingly adopted by LMICs, offering them a potential pathway towards a low carbon economy. Moreover, the emergence of GIPs opens new technical spaces in which developing countries may compete on more equal footing than in previous waves of industrialisation (Maltais and Suljada, 2025).

Southeast Asian countries, in particular, are actively pursuing strategies to move up the value chain, shifting from low-cost labour and resource supply towards higher-value technologically intensive production. Sectors such as electronics, semiconductors, machinery, EVs, and batteries have become focal points of these upgrading strategies. Indonesia's emergence as a key player in the EV battery supply chains, leveraging its substantial nickel reserves to attract downstream investment, exemplifies this strategic orientation (Phoumin and Purwanto, 2025). However, policymakers and practitioners across the Global South face the compounded challenges of designing industrial policies that simultaneously address climate-related risks, create decent jobs, reduce poverty, and build endogenous technological capabilities (UNIDO, 2026).

The prospect of green industrialisation also raises legitimate concerns about the reproduction of asymmetric North–South economic relationships under new conditions (Chavez and Serrani, 2026). Historical precedent offers a cautionary parallel. The Global South's push for a New International Economic Order in the 1970s represented an ambitious multilateral initiative to combat economic injustice, yet it yielded few lasting gains (Sacerdoti, 2015). Instead, the subsequent decades saw the consolidation of economic liberalisation agendas that curtailed state-led industrial strategy and deepened structural dependence on developed economies. In this case, the green industrialisation era risks replicating these dynamics (Alkhalili et al., 2023; Dejonghe and van de Graaf, 2025; Dunlap and Laratte, 2022; Hamouchene and Sandwell, 2023). Without a fundamental reordering of who controls green technology, who captures industrial value, and who bears the costs of transition, countries across the Global South may once again find themselves confined to supplying critical minerals while the Global North consolidates its dominance over high-value green production, reproducing, under the banner of climate action, the very hierarchies that earlier

development struggles sought to dismantle. These dynamics arise not only from economic structures but also from legal frameworks that shape policy choices. Examples include World Trade Organization (WTO) rules that constrain local-content requirements and subsidies, investment treaties that may expose industrial policies to investor–state disputes, intellectual property rules that can limit technology diffusion, and export controls and private sustainability standards that influence access to international markets (IBRD, 2023).

Given such conditions, translating the promise of GIP into concrete developmental outcomes remains deeply challenging for most LMICs. Several critical issues have been identified, organised here around five analytical categories: (i) governance models, encompassing the tensions between developmental ambition and authoritarian governance under state-driven models; (ii) fiscal space, referring to fiscal constraints on financing industrialisation and development; (iii) technology sovereignty (Caravella et al., 2024); (iv) trade and investment constraints, arising from neoliberal economic frameworks that limit the state's role in directing industrial transformation; and (v) justice risks, associated with neo-extractivist development models that risk creating new dependencies and t sacrifice zones.[1]

These challenges have reinvigorated the theoretical and political debates on development strategies within the energy transition framework. Notably, critical perspectives that foreground (re) industrialisation and state planning as essential public policy instruments have gained renewed prominence, suggesting a broader pragmatic shift. At the same time, many Global South countries possess critical resources essential for the energy transition, placing them in a stronger international bargaining position. This presents an opportunity to challenge extractivist practices and neo-colonial dynamics, break dependency cycles, and advance up the value chain through industrial policies that are just, democratic and green.

Different regions, however, face distinct challenges in directing state-led GIP. Southeast Asia occupies a particularly significant position in this regard. The region combines substantial demographic weight, abundant natural resources to assist in making the low-carbon transition, strategic maritime trade routes, and some of the largest remaining forest ecosystems on earth, all of which shape its role in the global economy. Yet, Southeast Asian countries have simultaneously experienced a discernible shift towards autocratic forms of governance (Ockey, 2023) and state-led economic statecraft that is prone to economic capture and co-optation (Caroll, 2020). Understanding GIP's political economy in this context is therefore paramount.

These conditions render Southeast Asia's position both strategically significant and structurally problematic. On the one hand, the region is endowed with considerable resources and emerging capabilities to promote a green industrialisation agenda. The Association of Southeast Asian Nations (ASEAN) member states have begun integrating green industrial ecosystems through downstream nickel processing (Indonesia), EV manufacturing (Thailand), solar panels (Vietnam), and semiconductor production (Malaysia). On the other hand, ASEAN economies remain highly exposed to global economic shocks, given their

1. *A 'sacrifice zone' is a geographic area that has been permanently changed by environmental degradation, often due to heavy industry or other forms of development that prioritize economic gains over the well-being of the local population.*

deep integration into global supply chains anchored by the US, China, and the European Union (EU). Moreover, intense intra-regional competition to attract green investment risks reproducing a 'race-to-the-bottom' dynamic, in which lowering labour and environmental standards becomes the primary competitive instrument, ultimately undermining the long-term developmental interests of the region as a whole.

Against this backdrop, this report makes a preliminary contribution to conceptualising a new approach to GIP for economic structural transformation in the Global South, with a particular focus on Southeast Asia. It explores the kinds of industrial policy strategies needed to promote development pathways that are just, accountable, inclusive and environmentally sustainable. The report is based on the findings of a regional workshop on Green Industrial Policy in Southeast Asia, held on 25-27 August 2025, in Jakarta, Indonesia. The workshop was organised by the Transnational Institute (TNI), The Legal Center for International Trade and Investment (LCITI) Faculty of Law, Universitas Indonesia, and Research Center for Macroeconomics and Finance – Research and Innovation Agency (BRIN). Building on the workshop discussions and findings, the report aims to define the contours of future research and policy advocacy, including key priorities, and desired outcomes for the region. It offers critical reflections on the challenges shaping the ASEAN trade and green industrial policy landscape, particularly in relation to technology access, financing, and sustainability considerations.

Finally, the report seeks to support researchers and activists across Southeast Asia in reconceptualising green industrial policy and advancing a more compelling narrative for new structural transformation grounded in social justice and democratic aspirations. The proposed research agenda is intended to strengthen linkages between ongoing advocacy efforts and policy engagement, enabling more effective interaction with Southeast Asian policymakers, including ASEAN Bodies in promoting a just and inclusive economic transformation.

SECTION 2

The crisis of Rules-Based System: An Urgent Agenda for a Strong Regionalism

Recent years, particularly since the COVID-19 pandemic, have witnessed a fundamental shift in global economic thinking. The fragility of extensive transnational value chains has become starkly apparent, while escalating geopolitical tensions between the US and China have systematically undermined the global neoliberal production model. This transformation has triggered the resurgence of tariffs, protectionism, and strategic state intervention in industries deemed critical for national security.

The economic uncertainty and upheavals, exacerbated by the US–China trade war, have created widespread vulnerability for LMICs. These nations now face greater multidimensional inequality, shrinking fiscal space, and mounting debt burdens. UNCTAD (2023) reveals that LMICs

dependent on global markets and commodity exports are particularly exposed to these shifts. Fluctuating prices generate volatile incomes and sluggish economic growth for commodity-dependent LMICs, while export overconcentration constrains sustainable development investments.

Consequently, countries across the Global South urgently need economic structural transformation to achieve sustainable and equitable development (UNCTAD, 2024). This is essential for improving economic growth and overall competitiveness by creating economic value-added activities and upgrading production value chains. It is imperative, however, for developing countries across multiple regions to revisit and accelerate economic diversification strategies, presenting an opportunity to break free from historical dependencies and unequal trade patterns, characterised by heavy reliance on primary commodity exports with minimal local economic impacts.

Meanwhile, industrial policy has re-emerged as a central instrument of economic statecraft, particularly in advanced industrialised countries, shaped by the intensifying geopolitical rivalry between the US and China. This return of industrial policy aims to 'reshore' critical production capacities in response to conflicts over territory, resources resilience, and technological leadership in areas such as artificial intelligence (AI), semiconductors, quantum computing, and clean energy. In response, countries across the Global South have increasingly employed a poly-alignment strategy, simultaneously engaging multiple power poles in an effort to maximise investment, technology transfer, and market access while avoiding dependence on any single power (Alami et al., 2025).

In Southeast Asia specifically, GIP's success requires active state intervention. The extent to which governments provide policy support for domestic industry, particularly nascent green industries, will be decisive. It is suggested that governments in LMICs should be equipped with more trade and investment policy flexibility to protect new industries in the green sector, to increase technology absorption in domestic industry, through selective export subsidies, local-content requirements, and tariffs on related imports, and government procurement (UNCTAD, 2023). Without a fundamental realignment of these conditions, public investment in corporate-led 'green' solutions risks producing green colonialism in which climate mitigation becomes a vehicle for resource appropriation and the dispossession of peripheral economies (Hamouchene, 2023).

A related dimension of this asymmetry is the tendency of multinational corporations (MNCs) to relocate the pollution-intensive stages of green supply chains to the Global South, taking advantage of nascent or weakly enforced environmental and labour rules (Li et al., 2025). Addressing this requires intervention by both home and host states rather than host states alone. Home states can require parent companies to exercise human rights and environmental due diligence over subsidiaries and supply chains, an approach now codified in the European Union's Corporate Sustainability Due Diligence Directive (Directive 2024/1760). Judicial developments in transnational litigation point in the same direction, including Holcim vs Asmania in Switzerland and Lungowe vs Vedanta Resources plc in the United Kingdom, where courts in the parent company's jurisdiction applied private international law rules in ways that allowed claims against parent companies for the climate and environmental impacts of their subsidiaries (Cantonal Court of Zug, 2025; Ojeda, 2021; Varvastian and Kalunga, 2020).

The asymmetric application of industrial policy as between the Global North and the Global South reflects deeply entrenched structural inequalities in the international economic order.Developed countries have historically enjoyed the privilege of implementing expansive industrial policies while LMICs have faced severe constraints in doing so. This asymmetry has manifested across three successive phases.

" The asymmetric application of industrial policy as between the Global North and the Global South reflects deeply entrenched structural inequalities in the international economic order."

First, calls for sovereignty over natural resources, the right to regulate MNCs, technology transfer, and reform of the global financial architecture were systematically resisted, contributing to economic crises across LMICs. Second, the consolidation of neoliberal hegemony compelled developing countries to implement the Structural Adjustment Programmes imposed by the International Monetary Fund (IMF) and World Bank, including liberalisation, privatisation, and deregulation, which further curtailed state-led industrial strategies. Third, the incorporation of environmental and climate concerns into the global economic order has introduced new double standards, creating conditions that risk steering LMICs towards green colonialism. Currently, such a challenge is further exacerbated by the Trump administration's efforts to restructure the global trade order through aggressive tariff policies (Sundaram, 2025).

While countries across the Global South are embracing GIP, these structural constraints continue to hinder its effective deployment as a tool for economic transformation.A study by Thrasher et al. (2025) indicates that LMICs are disproportionately subject to trade and investment disputes, both within the WTO framework and through Investor-State Dispute Settlement (ISDS), as a consequence of the implementation of industrial policies, particularly those related to the green industry. By contrast, the advanced industrialised countries maintain a significantly higher volume of industrial policies, with 740 policies currently in place, three-quarters of which consist of subsidy and state aid measures, including financial assistance in foreign markets, grants, and state loans. Developing countries and emerging markets, by comparison, have implemented 230 policies, nearly half of which are export and import measures and local-content requirements designed to support infant industries. While on the Investment tribunal, expropriation and fair and equitable treatment, both of which have been raised with increasing frequency in investor-state disputes.

The UNCTAD Report (2025) documents a rise in ISDS cases throughout 2024, particularly in the mineral and extractive sectors, driven by increased demand for critical minerals in the energy transition. A total of 58 cases were documented related to extractive activities and energy supply, with around 55% filed against LMICs and 80% of claimants originating from developed countries. This dynamic poses a significant challenge for ASEAN, where over 85% of international investment treaties concluded by member states are old-generation treaties (ASEAN Investment Report, 2023). Under the green transition agenda, fossil fuel companies have increasingly deployed ISDS mechanisms to obstruct energy transitions and can constrain ASEAN countries' abilities to unlock and leverage resources, such as critical minerals, for domestic benefit (Wu, 2025).

In contrast to the growing effectiveness of ISDS mechanisms in protecting the interests of foreign investors from the economically advanced countries, WTO rules and dispute-settlement procedures have become increasingly paralysed. The WTO's Appellate Body has ceased to function due to the US blockade, leaving the organisation with formal rules but no effective enforcement capacity. The WTO Appellate Body Crisis offers LMICs greater flexibility to implement industrial policies, emboldening policymakers across the Global South to pursue strategies without immediate fear of legal repercussions (Alami, 2025).

The international trading landscape has shifted from the WTO's multilateral framework to a more complex and asymmetric system of bilateral arrangements. The emergence of US reciprocal trade agreements has precipitated a deep crisis

in the global rule-based order. The US agenda is effectively transforming trade governance into a power-based system, producing more asymmetric agreements and foreclosing development pathways for weaker economies. The Trump administration has used bilateral tariff negotiations as a mechanism to reset the rules of globalisation on terms favourable to US interests, weaponising tariffs to extract concessions from LMICs, including on their position within the WTO, as a condition for tariff relief to reform the WTO and push for various plurilateral agreements, such as those relating to e-commerce, investment facilitation and domestic services regulation (Hertanti, 2025).

In the context of critical minerals, referring to Indonesia–US tariff deals, the framework of the Indonesia–US reciprocal tariff agreement has succeeded in forcing the Indonesian government to abolish its export restriction policy, particularly on critical minerals, and succeeds in pushing Indonesia to exempt US companies and US-originating goods from localcontent requirements. Unsurprisingly, the US government will not allow this to happen due to the enforcement of intellectual property protection. This multilateral crisis has intensified pressure on LMICs to escape economic and political coercion. The result is a progressive erosion of bargaining power and policy sovereignty, not only through US unilateral agreements, but also through highly asymmetric bilateral free-trade agreements (FTAs) with the EU, Canada, and others.

The issue of critical minerals has emerged as the dominant agenda in most of these bilateral trade deals. The US has secured critical minerals cooperation in its reciprocal tariff agreements with Cambodia, Malaysia, and Thailand, with a similar arrangement with Indonesia expected in early 2026. Meanwhile, ASEAN's GIP faces mounting competitive pressure for China's near-dominant control over high-tech supply chains, including green technology, across the region. ASEAN thus confronts dual shocks, China's dominant role in regional production networks, and aggressive Western (mainly US) trade policies that undermine the ability of Southeast Asian economies to capture value from their mineral resources (Kamiya, 2025). Several Southeast Asian countries aspire to develop solar panels, EVs, and battery manufacturing capacities. However, Western approaches, as reflected in the Indonesia–EU FTA negotiations and the US reciprocal trade framework, have prioritised strong intellectual property protections and effectively constrained Southeast Asian countries from imposing export quotas, export taxes, or local-content requirements on critical minerals and rare earth elements. The extent to which China may offer knowledge transfer to ASEAN, providing technology and management practices to lower-income countries, and the terms and costs of any such arrangement, remain open and consequential questions.

Pursuing bilateral deals has progressively undermined ASEAN-centred regionalism. Domestic political instability across Southeast Asia further constrains ASEAN's collective capacity to respond to growing global economic and security pressures (East Asia Forum, 2026). Divergent national interests and uneven exposure to US tariff policies have incentivised member states to pursue relative advantage against one another, revealing the bloc's limited political cohesion and institutional mandate for effective collective negotiation (Ha, 2026). Yet, a cohesive and strategically capable ASEAN is precisely what the current moment demands. The region's ability to navigate geopolitical shocks will depend on member states acting collectively, positioning themselves as key nodes in restructured production networks, rather than passively integrating into shifting global value chains, and realigning GIP spaces to secure technology transfers and favourable financing terms (Alami, 2025).

Effective GIP requires more than regulatory flexibility. It demands moving beyond 'one-size-fits-all' global templates towards regionally grounded strategies that prioritise structural transformation, technological learning, and

inclusive development, while guarding against new forms of green dependency amid intensifying geopolitical rivalry. Regional cooperation and integration are critical to this process, enabling ASEAN to pool resources and enhance its collective bargaining power.

Rethinking GIP in Southeast Asia from a Global South perspective, therefore, entails a twofold imperative: redefining developmental objectives, especially on regional integration, and identifying practical pathways for implementation.In this context, ASEAN could use common negotiating positions, especially in discussing the deepening of RCEP cooperation. The plan for a General Review of the RCEP Agreement in 2027 presents a valuable opportunity to assess the significance of flexibility rules in creating policy space for LMICs in the region. It is imperative for ASEAN to consolidate its collective bargaining position allowing for more substantive special and differential treatment (S&DT), greater flexibility to apply industrial subsidies, local content requirements, and technology transfer policies.

This should encompass more than mere access to obsolete technology; it should also extend to participation in R&D, the training of the local workforce for high-level managerial and technical positions, and the establishment of joint ventures that provide substantial ownership and control to local partners. ASEAN should advocate for the introduction of flexibility rules within its regional trade rule framework. These rules would create policy space for developing countries, allowing for more substantive S&DT, greater flexibility to apply industrial subsidies, local-content requirements, and technology-transfer policies. Against this backdrop, the following section maps GIP across Southeast Asia, identifying key gaps and constraints, including digital and technological dependency, and financing landscape, as foundational conditions for realizing the region's green industrial potential.

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SECTION 3

GIPs of ASEAN Member States: An overview

ASEAN consists of predominantly LMICs with varying degrees of economic development. Given that ASEAN is considered a region with loose arrangements and respect for each member state's sovereignty, each member state can retain its policy autonomy. In 2025, ASEAN issued a document entitled 'Our Shared Future 2025-2045' to advance sustainability and inclusivity by building a supportive ecosystem to unlock green economy potential, enhancing resilience to climate adaptation, and accelerating the decarbonisation of regional supply chains. These strategies reflect the umbrella of 'regional' GIPs, envisaging ASEAN's position as a competitive

hub for green industries (ASEAN, 2025) *(Table 1)*.An analysis of current policy frameworks reveals several commonalities in how ASEAN member states navigate the green industrial transition. Primarily, GIPs in the region adopt a top-down model, which is consistent with the developmental trajectories focused on maintaining national policy space. These interventions are predominantly operationalised through state-led instruments, ranging from fiscal incentives, such as tax relaxations and the development of eco-industrial parks, to more protectionist measures like Local Content Requirements (LCRs). However, carbon lock-in continues to constrain green pathways (IEA, 2024). Despite these shared characteristics, the ASEAN landscape is marked by structural heterogeneity. The divergence in policy priorities is largely a function of differing natural resource endowments and historical development paths.

For instance, resource-rich states like Indonesia have pivoted towards 'downstream' industrialisation, specifically targeting the global EV value chain. In contrast, resource-scarce economies like Singapore focus on high-tech services and digital integration. The uneven fiscal capacity across the region further complicates this disparity. Because effective GIP necessitates substantial public investment, the ability of a state to intervene is fundamentally constrained by its fiscal space, leading to a 'developmental gap' between member states. Finally, a critical institutional gap persists in the regional governance architecture. While the ASEAN 2045 vision provides a normative long-term direction for sustainability, its realisation depends on individual state policies along with coordination among states. The current reliance on non-binding commitments offers a degree of regulatory flexibility and preserves national sovereignty. From a risk-management perspective, this presents a dual challenge. It acknowledges that there are no 'one-size-fits-all' templates, yet it simultaneously increases the risk of a 'race to the bottom'. Closing this gap does not require abandoning the principle of non-interference in the internal affairs of ASEAN member states, but it does mean distinguishing that principle, which properly governs political and security matters, from the narrower question of whether member states can agree to shared technical benchmarks.

Regionally agreed minimum standards on labour protection, environmental safeguards, tax incentives, and investment facilitation, backed by peer review and reporting rather than supranational enforcement, would curb competitive downgrading without touching sovereignty over domestic political choices. Existing ASEAN bodies are already positioned to carry this forward, including the AEC Council and ASEAN Economic Ministers meetings for cross-cutting economic coordination, the ASEAN Secretariat for technical monitoring, the ASEAN Taxonomy Board for green finance criteria, and the ASEAN Centre for Energy for sector-specific benchmarks.

Table 1 : ASEAN Members' GIP Policy and Strategy

ASEAN Member	GIP Policy	Strategy
Singapore	Green Plan 2030	Capital-intensive development and circularity of resources
Malaysia	New Industrial Master Plan 2030 (NIMP 2030)	Regional hub for green technology and industrial upgrading to the low-carbon industry
Thailand	Bio-Circular-Green (BCG) Economy Model, BCG Action Plan 2021-2027	• Innovation-driven low-carbon supply chain • Green industry mark certification (i.e. sustainable production practices) • Bio-Circular-Green Strategy

Indonesia	RPJPN 2025-2045	• Production and sourcing basis for green and environmental goods • Mineral down-streaming (EV ecosystem, including batteries) • Industrial parks
Philippines	Philippine Development Plan (PDP) 2023–2028, Green Jobs Act	• Development of eco-industrial parks (e.g. recycling sector, biofuel industry) • Justice in green jobs
Brunei	Wawasan Brunei 2035, Brunei National Climate Change Policy (BNCCP 2020)	• Downstream petrochemical diversification (e.g. Hengyi Industries methanol and refining complex) • Renewable energy target of 30% of installed power capacity and electric vehicle target of 60% of new car sales by 2035
Vietnam	Vietnam's Green Growth Strategy (VGGS 2021–2030, vision 2050); Green Label Vietnam	Regional hub for green technology and industrial upgrading to the low-carbon industry
Cambodia	Long-Term Strategy for Carbon Neutrality (LTS4CN); Cambodia Vision 2050	Circular Strategy on Environment 2023-2028 and National Circular Economy Strategy and Action Plan
Myanmar	Industrial Policy of Myanmar (2016)	No distinct green industrial strategy identified as of writing, reflecting the disruption of policy institutions since 2021
Lao PDR	National Green Growth Strategy of the Lao PDR; Lao PDR Vision 2030 and the 8th – 10th National Socio-Economic Development Plans (NSEDPs).	Regional hydropower export hub, with plans to dedicate 18,000 MW of installed capacity to cross-border sales by 2030 and early-stage green hydrogen and ammonia development
Timor Leste	National Industry Development Policy	No dedicated green industrial strategy identified as of writing, given the country's recent ASEAN accession and early stage of industrial policy development

SECTION 4

ASEAN's Trade Landscape

ASEAN's economic development has demonstrated consistent and positive progress over the past two decades. Between 2004 and 2024, the region achieved an average annual growth rate of 4.8%, supported by abundant natural resources, an expanding skilled workforce, and a large youthful population (IMF, 2025). Among ASEAN member states, Vietnam has emerged as the fastest-growing economy (7.1%), followed by the Philippines and Cambodia at 5.7% and 5.6%, respectively. Indonesia remained the region's largest economy, with a nominal gross domestic product (GDP) of USD 1,357.3 billion, ahead of Singapore (USD 547.5 billion) and Thailand (USD

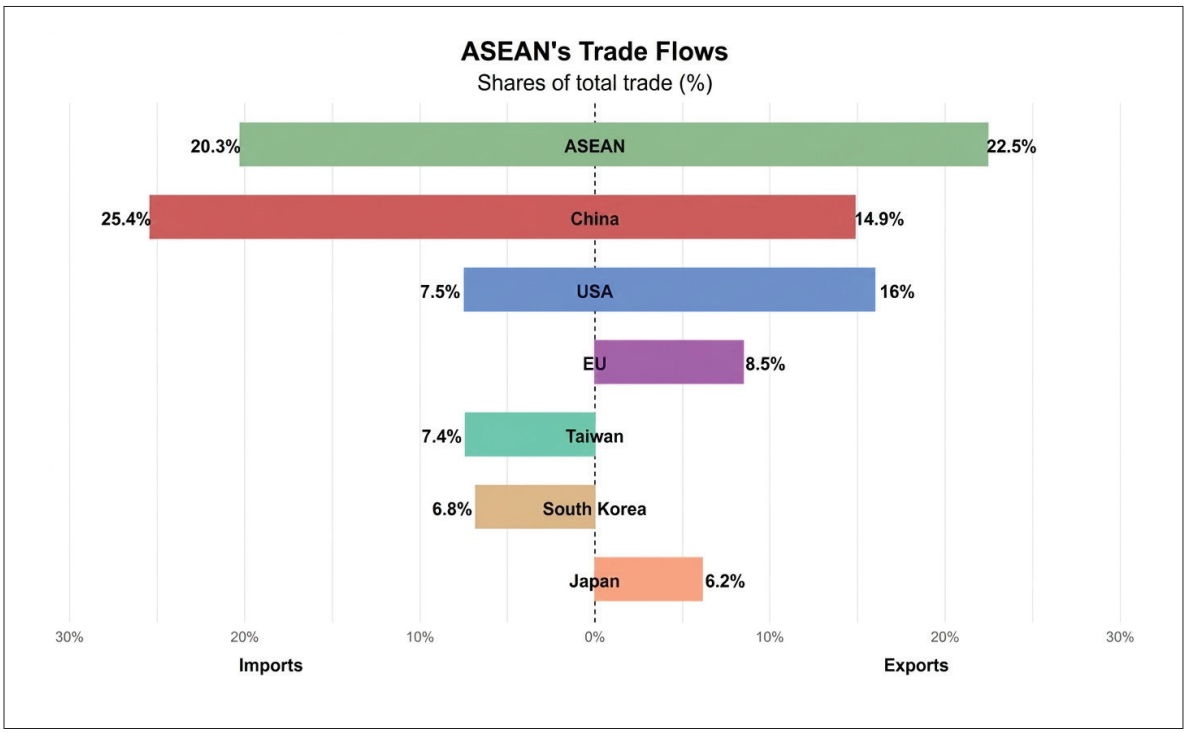
526.5 billion). These figures reflect both the region's overall dynamism and marked differences in economic scale across ASEAN member states.

ASEAN's rapid industrial expansion has been driven by both low- and high-technology manufacturing. Low-technology industries, including textiles, apparel, and footwear, have historically provided the foundation for export-led growth, while high-technology sectors, such as semiconductors and automotive manufacturing have grown in strategic importance. Agriculture and mining have continued to contribute significantly to economic output across the region. This industrial structure has important implications for the design and sequencing of green transition strategies.

In terms of trade, ASEAN member states have maintained extensive engagement with major global economic blocs, as both exporters and importers (Figure 1). The US (16%) and China (14.9%) were top export destinations. Finished goods dominated ASEAN's trade with the US, positioning it as a key market for products such as electronics, electrical machinery, medical equipment, furniture, textiles and apparel. Trade with China, by contrast, was more diversified, encompassing raw materials, intermediate inputs, and finished products, reflecting ASEAN's deep integration into China-centred regional supply chains.

On the import side, China has been ASEAN's largest source, accounting for 25.4% of total imports. This imbalance indicates a trade deficit, highlighting the region's significant reliance on Chinese inputs for manufacturing and industrial production. As a result, supply-chain disruptions in China may pose significant risks to ASEAN manufacturing stability. Other major import partners, including the US, Taiwan, and South Korea, account for smaller shares at 7.5%, 7.4%, and 6.8%, respectively. While trade with the US generates a surplus for ASEAN, increasing protectionist measures and high import tariffs may expose ASEAN exports to demand-side vulnerabilities.

Figure 1 : ASEAN's market



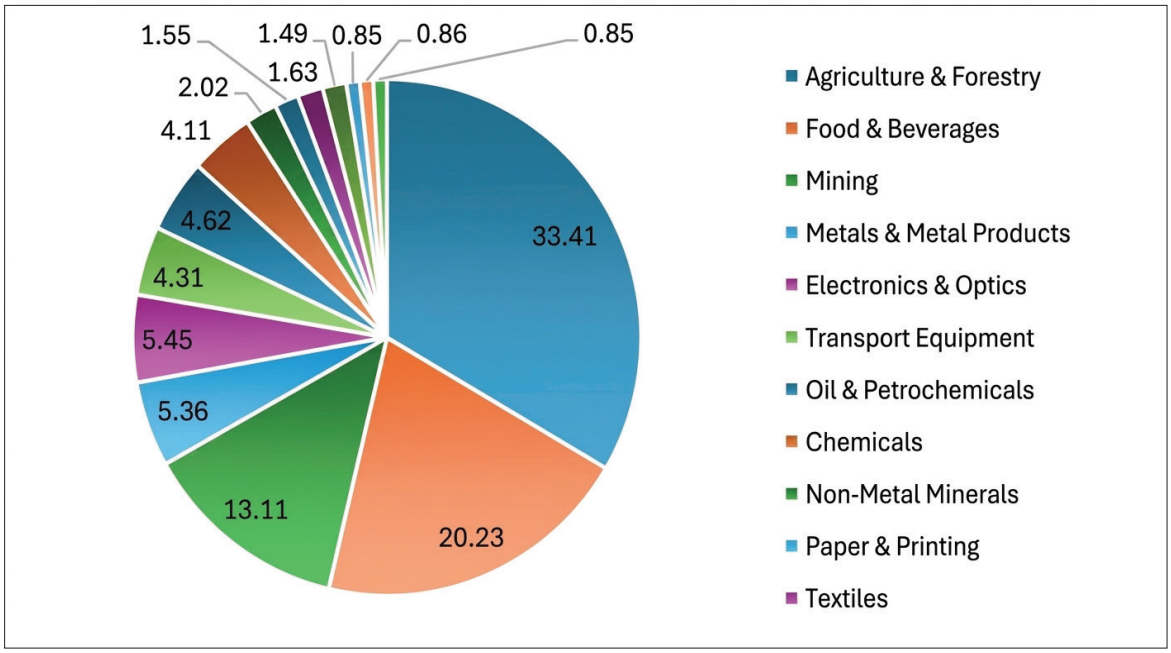
Source: ASEAN Secretariat (2024)

Despite extensive trade partnerships with major global markets, intra-ASEAN trade remains a critical component of the region's overall trade structure, reflecting the depth of regional economic integration. Intra-regional exports accounted for 22.5% of total ASEAN exports, supplying raw materials, intermediate goods, and final products to industries across the region (Figure 2). The slightly higher share of exports relative to imports indicates reciprocal and relatively dense trade relationships, reinforcing ASEAN's dual role as both an integrated production base and a regional consumer market. Underpinning this pattern is the fact each ASEAN economy has developed its manufacturing base in accordance with its comparative advantages, shaped by industrial policies, geography, historical trajectories, and resource endowments. These differences account for the region's evolving specialisation pattern and the differentiated economic roles among its major economies.

ASEAN has developed diverse manufacturing structures, enhancing the region's attractiveness as a production and assembly base for manufactured goods and components (Kamiya, 2025). Some member states, particularly Singapore, Thailand, and Malaysia, have established relatively advanced manufacturing capabilities, including higher value-added activities. Singapore's manufacturing strengths lie in electronics, chemicals, and petroleum processing, supported by a highly skilled workforce, advanced technological infrastructure, and a well-developed logistics system. Thailand and Malaysia have similarly developed substantial manufacturing capacities, although with different areas of specialisation.

Thailand functions as a major manufacturing hub for automobiles and automotive components, serving both regional and global markets, while also producing a wide range of electronic products and processed foods, reflecting a diversified and relatively mature industrial base. Malaysia has established a strong presence in the semiconductor industry, positioning itself as a key supplier of electronic components such as chips and processors. Beyond electronics, Malaysia also possesses significant capabilities in palm-oil refining, enabling the conversion of crude palm oil into higher-value processed products.

Figure 2. Intra-ASEAN Trade Structure by Sector



Source: ADB Multiregional Input-Output Database (2025)

In contrast to these more advanced manufacturing economies, Indonesia and Vietnam have competed for investment through relatively low labour costs and fiscal incentives. While this strategy has supported rapid industrial expansion, it also carries the risk of locking both countries into intermediate positions within global value chains, where progress toward higher value-added activities, such as research and development (R&D), product design, and branding, remains limited. As the largest economy and market in ASEAN, and a country richly endowed with natural resources, Indonesia faces a particular strategic challenge in this regard. Its role in the regional economy has long been that of a supplier of energy and industrial raw materials, including coal, nickel, crude palm oil, rubber, and other commodities. Recent efforts to promote downstream processing, especially in nickel for EV batteries, signal a gradual shift from raw materials export toward semi-finished goods. However, more sustained and deliberate policy efforts are required to enable a broader transition towards innovation- and capability-driven industrial development.

Vietnam, meanwhile, has emerged as an important production base for labour-intensive industries such as garments and footwear, and a final assembly and export hub for major markets, particularly the US and EU member states. Alongside Malaysia, Vietnam has also made notable advances in solar-panel manufacturing, positioning itself as a direct competitor to Indonesia in global labour-intensive manufacturing. Yet, like several of its regional peers, including Myanmar, Cambodia, Lao PDR, and Indonesia, Vietnam faces the risk of a downward competitive spiral in some labour-intensive sectors. The intense competition among ASEAN members to attract foreign investment has, in many cases, prioritised short-term gains over long-term industrial upgrading necessary to sustain inclusive development. This dynamic is compounded by ASEAN's continued dependence on imported raw materials and intermediate

Table 2. Maps of the Manufacturing Sector in ASEAN

Country	Major Manufacturing Hubs	Key Sectors	Notable Facts
Vietnam	Ho Chi Minh City, Hanoi, Hai Phong	Electronics, textiles, furniture	Electronics and textile powerhouse; fastest supply chain expansion
Thailand	Bangkok, Rayong, Chonburi (EEC)	Automotive, electronics, food, EV parts	27% of GDP in manufacturing; global player in EV and automotive
Malaysia	Penang, Kuala Lumpur, Johor	Semiconductors, electronics, machinery	Semiconductors, advanced machinery; 22% of GDP in manufacturing
Indonesia	Jakarta, Bekasi, Surabaya, Morowali	Electronics, automotive, textiles	Leading in electronics, auto parts, textiles, and a large labour market
Singapore	Jurong, Tuas, Woodlands	Biotech, chemicals, electronics	High-value R&D and advanced manufacturing; strong in logistics
Philippines	Manila, Calabarzon	Semiconductors, food, BPO	Large electronics/semiconductor exports and the BPO sector
Cambodia	Phnom Penh, Sihanoukville	Textiles, apparel, footwear	Major exporter of garments, benefiting from the ASEAN market

Source: Kamiya (2024)

inputs, particularly from China, as well as from Taiwan and South Korea. China-sourced inputs are relatively low-cost, enabling ASEAN producers to remain competitive in export markets. However, maintaining low final prices, especially in East Asian markets, places persistent downward pressure on production costs, which in practice translates into wage suppression and weakened enforcement of environmental standards. The resulting tension between export competitiveness and the protection of labour and environmental conditions represents one of the structural conditions of ASEAN's current growth model.

This tension is more acute in labour-intensive industries, where low labour costs and relaxed environmental regulations are frequently treated as sources of comparative advantage rather than as symptoms of structural vulnerability (Porter, 1999; Davies and Vadlamannati, 2013; Shaari, 2022). The similarity of export structures across the region further intensifies competitive pressures. Many ASEAN countries export comparable products, including electronics, textiles, and automotive components, while competing simultaneously for the same pools of foreign direct investment (FDI). Under these conditions, the risk of a 'race to the bottom' is not merely theoretical. Countries face concrete incentives to offer lower taxes, reduced minimum wages, and more flexible labour and environmental regulations to attract and retain investors, with potentially significant long-term costs to both human welfare and ecological sustainability.

SECTION 5

Digital and Technology Capabilities

Technology is central to shaping the success of GIPs. Technological dependence is not only a technical problem, but also a political and economic challenge with far-reaching structural consequences, including low-quality employment, the risk of premature deindustrialisation, and long-term financial and debt dependence" (Loong and Azizi, 2025). Across ASEAN, readiness in terms of information and communication technology (ICT), skills development, R&D, industrial capabilities, and access to finance remains deeply uneven. While countries such as Singapore and Malaysia benefit from advanced infrastructure, skilled labour markets, and more favourable financing conditions, several ASEAN members, including Indonesia, Cambodia, Myanmar, Lao PDR, and Timor-Leste, continue to face fundamental capability gaps that limit their ability to capture value from green industrialisation. Such dependence is reinforced through multiple legal and institutional channels rather than a single mechanism, including intellectual property and licensing regimes, procurement rules, R&D partnership arrangements, standards-setting processes, data-governance frameworks, and investment approval requirements governing technology transfer.

Low investment in R&D represents a key constraint across the region. Most ASEAN countries invest far less in R&D than advanced East Asian economies, despite its importance

Table 3. ASEAN Readiness Index related to ICT, skills, R&D, industrial capacity, and finance

No.	Country	Total Score	Top Rank 2022	Score Group	ICT Rank	Skills Rank	R&D Rank	Industry Rank	Finance Rank
1	Singapore	0.96	3	High	7	8	17	4	17
2	Malaysia	0.76	32	High	30	64	28	7	16
3	Thailand	0.64	49	Upper Middle	40	90	46	41	10
4	Philippines	0.62	54	Upper Middle	94	79	52	3	80
5	Vietnam	0.58	62	Upper Middle	69	117	41	23	11
6	Brunei Darussalam	0.55	69	Upper Middle	54	38	95	97	93
7	Indonesia	0.49	85	Lower Middle	102	107	50	47	97
8	Cambodia	0.34	112	Lower Middle	122	123	121	95	14
9	Timor Leste	0.27	129	Low	159	104	140	60	143
10	Myanmar	0.26	133	Low	132	143	107	101	118
11	Lao PDR	0.25	134	Low	130	134	152	56	133

Source: UNCTAD (2023)

for fostering innovation and for absorbing and adapting foreign technology.

"Technological dependence is not only a technical problem, but also a political and economic challenge with far-reaching structural consequences, including low-quality employment, the risk of premature deindustrialisation, and long-term financial and debt dependence"

Only a few countries allocated more than 1% of GDP to R&D, while many invest below 0.5% (Lowy Institute, 2023), reflecting development strategies that have not adequately positioned innovation as a driver of long-term growth. Weak R&D capacity, combined with limited skills and weak innovation ecosystems, tends to trap countries in lower or intermediate positions within global value chains, where industrial upgrading remains structurally difficult.

Addressing these challenges requires a policy mix that combines incentives for private R&D, sustained public support for strategic research, regional collaboration to share technical capabilities, mechanisms that broaden access to key green technologies, and public procurement programmes that encourage domestic innovation.

Technological challenges in ASEAN are further shaped by the accelerating pace of digital transformation.Digital developments, particularly those driven by data utilisation, have the potential to reduce transaction costs and information barriers in international trade. However, control over digital technologies and data has become highly concentrated among large multinational technology firms.

Trade policies that promote unrestricted cross-border data flows can place LMICs at a significant economic disadvantage (Rohman,

2025). Once data crosses borders, governments may lose effective authority over its use, limiting domestic value creation and reinforcing patterns of digital dependence. The issue of data governance is key to data sovereignty and the right to development for LMICs.

However, the main data-governance issues often arising in preferential trade agreements (PTAs) frequently push for unimpeded cross-border data flows and prohibitions on data-localisation requirements. Certainly, with varying capacities, developing ASEAN countries will face the challenge of restricted policy space in protecting data sovereignty during the negotiation process of trade agreements in the region. Unrestricted cross-border data flows create difficult trade-offs for developing countries, particularly in balancing data mobility, monetisation, privacy, and security.

"The issue of data governance is key to data sovereignty and the right to development for LMICs."

Without clear strategic frameworks and robust regulatory safeguards, LMICs face heightened risks of data breaches and the erosion of sovereign authority over strategically significant data. For this reason, digital development must therefore be accompanied by strong data-governance frameworks capable of protecting privacy while enabling the domestic economic utilisation of data.

Data-localisation policies, requiring certain categories of data to be stored and processed within national borders, have emerged as one such response. Several ASEAN countries have adopted, or are actively considering, such measures, although approaches vary widely across the region (Table 4). It is worth noting that data localisation is neither inherently beneficial nor inherently harmful. Its effects depend on the type of data involved. Requiring data to be stored domestically may enhance control over strategically sensitive information, but it can also increase compliance costs, reduce interoperability with global systems, and place a disproportionate burden on smaller firms. These trade-offs differ across personal, financial, industrial, public-sector, and critical infrastructure data. Consequently, blanket localisation requirements may impose unnecessary costs in areas where the rationale for domestic control is weak. Data governance has also emerged as a key issue in regional and global trade negotiations.Many preferential trade agreements include provisions promoting unrestricted data flows and limit the use of data-localisation measures, potentially constraining the policy space available to LMICs. This challenge is particularly relevant as ASEAN negotiates the Digital Economy Framework Agreement (DEFA), which contains provisions on data governance and cross-border data flows.

Given the significant disparities in digital readiness among ASEAN member states, DEFA should be designed to preserve flexibility, including tailored exceptions, longer implementation periods, limited dispute-settlement exposure, and capacity-building support for less digitally advanced economies. Given the differing levels of development and readiness among ASEAN member countries, it is crucial to guarantee policy space to restrict free cross-border data flows and for data protection. One such effort is to formulate flexibility rules within DEFA that might include things like: (i) tailored exceptions; (ii) limited application of dispute settlement to data-related commitments; (iii) S&DT mechanisms, including longer implementation periods; and (iv) capacity building.[2] Beyond regulation, infrastructure

2. *See Illo and Shepherd, Where Next? Priorities for the ASEAN Economic Community Post 2025.*

gaps remain a major barrier to digital and technological sovereignty (Caravella, 2024). Limited domestic capacity in data processing, cloud computing, and AI infrastructure deepens reliance on foreign digital platforms, concentrating innovation and economic power outside the region. Addressing this challenge requires a more active and strategic role for the state, not only as a regulator, but also as an investor and co-creator of digital infrastructure. Strategic priorities, in this regard, could include the development of common data spaces, the establishment of public data trusts in collaboration with communities, and the creation of shared AI infrastructure designed to support collaborative innovation rather than reinforce competitive technological dependencies.

Table 4. Regulation on Data Localisation and Cross-Border Transfers in Southeast Asia

Country	Localisation Requirement Strength	Cross-Border Transfer Rules	Main Supervisory Authority
Indonesia	Moderate to Strict (sectoral): Public sector and financial data must be localised. Private non-financial organisations may use offshore storage under oversight.	Allowed if: (i) Adequacy; (ii) Contractual safeguards; or (iii) Explicit consent. Pre/post notification to the Ministry required.	Ministry of Communication and Digitalisation (Komdigi); future Data Protection Authority.
Singapore	Low: No general localisation; limited sector-specific obligations (banking, healthcare). Actively promotes cross-border flows.	Transfers permitted if the recipient is bound to PDPA-equivalent protection. Mechanisms: contracts, binding rules, CBPR participation, or consent.	Personal Data Protection Commission (PDPC).
Malaysia	Low to Moderate (sectoral): Some industry regulators (e.g. financial, telecom, health) impose restrictions. No blanket localisation.	"Adequacy-based" model: transfers are permitted to destinations that have laws substantially similar to the PDPA.	Department of Personal Data Protection (JPDP) (under Ministry of Digital).
Thailand	Low: No general mandate, but sector regulators (finance, telecoms) may impose storage obligations.	Transfers allowed if: (i) Adequacy; (ii) Safeguards (contractual clauses, BCRs); or (iii) Consent. GDPR-style framework.	Personal Data Protection Committee (PDPC).
Philippines	Low to Moderate (critical sectors): No broad localisation, but banks and government entities may be required to keep local copies.	Transfers allowed where recipient jurisdiction ensures equivalent protection. Alternatives: contracts, consent.	National Privacy Commission (NPC).

Source: Rouse (2025)

Note: the table reflects a mix of instruments at different stages, spanning binding statutes already in force, draft legislation still under deliberation, and regulator guidance or practice that has not been codified in law, and readers should consult the underlying source before treating any single entry as settled law.

Vietnam	High (broad localisation): Foreign service providers (telecom, online services, e-commerce, etc.) may be requested to store user data locally. May also need a local office/branch.	Offshore transfers of personal data, important and core data subject to MPS notification/approval. Must satisfy consent, necessity, and safe handling. Strictest in ASEAN.	Ministry of Public Security (MPS).
Cambodia	Minimum (developing framework): No general localisation law yet. Some restrictions in banking/telecom.	No omnibus law; transfers generally allowed with consent or contractual arrangements. Future law will likely introduce adequacy/safeguard models.	Currently sectoral regulators (eg, National Bank, Telecom Regulator). Draft PDP Law pending.

SECTION 6

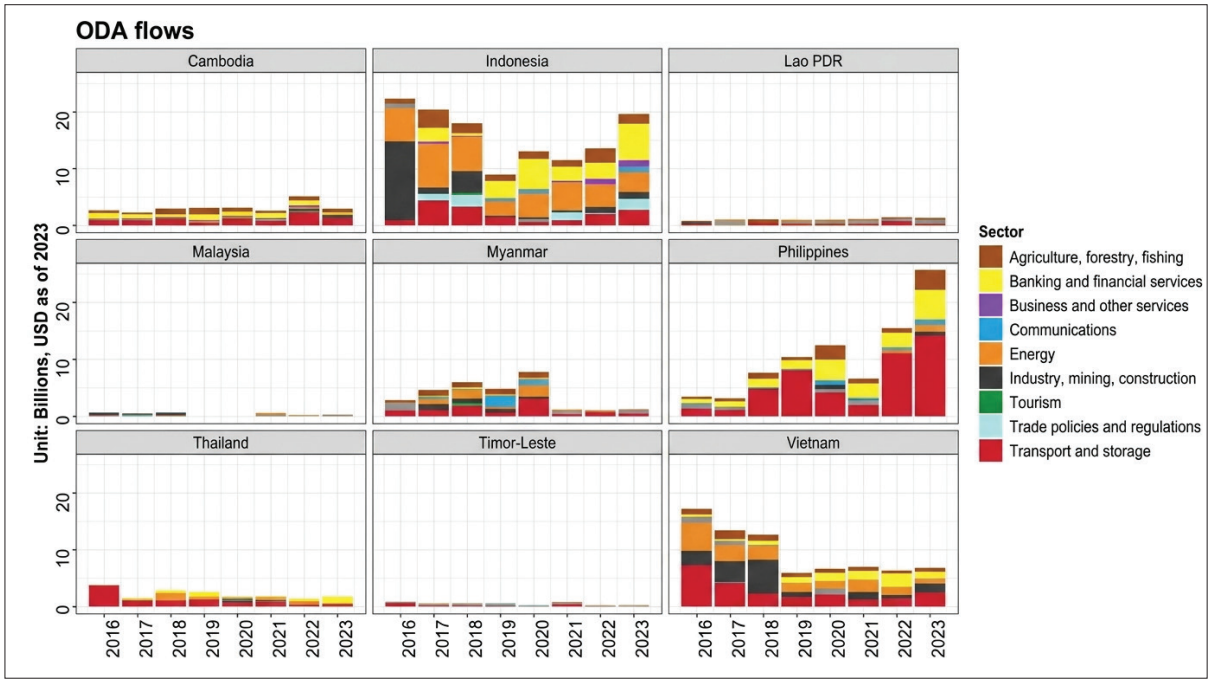
Financing GIPs

Financial capital is a critical enabler of GIP, yet for LMICs, access to adequate and affordable financing cannot be disentangled from the constraints imposed by the prevailing global financial regime. Power asymmetries between developed and developing countries, marked by concentration of financial actors in the former, rising reliance on private credit, and the internalisation of market discipline by Global South policymakers, reinforce patterns of dependency and financial subordination (Muchhala, 2022; 2025). These conditions make it structurally difficult for LMICs to implement strategic industrial policies, including large-scale investment in green technologies, pushing them towards conventional development paths even as pressures for industrial decarbonisation intensify.

ASEAN member states reflect these global patterns through a regionally differentiated financial landscape. As illustrated in Figure 3, disparities in Official Development Assistance (ODA) are pronounced in which Indonesia, the Philippines, and Vietnam received significant development financing for infrastructure and industry while lower-income states, such as Cambodia, Lao PDR, and Myanmar, continue to face constraints in accessing affordable capital. Upper-middle-income countries like Malaysia and Thailand navigate the financing landscape with greater strategic capacity. High-income economies such as Singapore and Brunei, benefiting from stronger fiscal autonomy, are better positioned to set ambitious sustainability priorities.

Across the region, however, limited fiscal space and modest green finance mobilisation collectively constrain the scaling of green industries and the broader pursuit of industrial decarbonisation.Despite these constraints, ASEAN member states have made tangible progress in advancing green finance ecosystems (see Damuri et al., 2025). As shown in Table 5, national frameworks have emerged across the region, including Malaysia's Green Technology Financing Scheme (GTFS), Indonesia's Green Bond and Sukuk Framework, Singapore's carbon tax and Green and Sustainability-Linked Loan

Figure 3. Disbursed Official Development Assistance (ODA) flows, 2016-2023



Source: Compiled from OECD (2025)

Note: Malaysia and Thailand receive less ODA, particularly compared to Indonesia, the Philippines, and Vietnam, because they are relatively economically advanced, face fewer structural development challenges, have greater domestic financing capacity, and are lower-priority targets in donors' strategic allocations within Southeast Asia.

Grant Scheme, and Vietnam's guidelines on green bonds. Regional standards like the ASEAN Taxonomy for Sustainable Finance have also been established. Complementing these frameworks, initiatives such as the ASEAN Catalytic Green Finance Facility (ACGF), the ASEAN Infrastructure Fund (AIF), alongside global partnerships including the JETP and ETM have mobilised blended finance for phasing out coal-fired power plants, deploying renewable energy, developing solar manufacturing and wind technology, as well as expanding transmission grids.

To date, the ASEAN Taxonomy for Sustainable Finance has functioned mainly as a labelling tool that helps classify which activities qualify as green for lenders and investors, but its criteria could be extended further, for instance by linking taxonomy alignment to industrial policy conditionality, public procurement preferences, mandatory disclosure requirements, and anti-greenwashing enforcement, none of which is yet systematically in place. Notwithstanding this progress, green finance in ASEAN has remained modest in scale.

Across the region, however, limited fiscal space and modest green finance mobilisation collectively constrain the scaling of green industries and the broader pursuit of industrial decarbonisation.[3]

3. *Example: Fiscal and policy space has constrained Malaysia's green transformation. Fiscal policies, including deficit limits and caps on guarantees, and external vulnerabilities restrict expansionary spending. Meanwhile, extensive FTA commitments, reduced industrial policy tools, and a bureaucratic bias towards liberalisation restrict the government's policy space and regulatory flexibility (Afzfar and Loong, 2025).*

As shown in Figure 4a, ASEAN countries have issued significantly fewer green bonds than the global top five issuers concentrated in Europe, East Asia, North America, and the Pacific OECD (Organisation for Economic Co-operation and Development) member countries. Within the region, Indonesia, Singapore, the Philippines, and Thailand have been the primary issuers (Figure 4b). The immaturity of regional capital markets has constrained the broader uptake of financial instruments, such as green bonds, green loans, and equity financing (ACE, 2025). In terms of sectoral allocation, around 43% of green-bond proceeds in Southeast Asia were directed towards green building projects, particularly in Singapore and Malaysia, while roughly one-third has supported energy transition-related initiatives, mainly geothermal and solar projects, in Indonesia, Thailand, and the Philippines (Azhgaliyeva et al., 2020).

This distribution reveals a critical gap in the use of green-finance proceeds for green industrialisation, particularly in investments in energy efficiency and green technologies, which have been underfunded. In other words, green finance in the region has predominantly supported energy transitions in power generation, with limited focus on industrial transformation for green growth. Addressing this imbalance is precisely the objective of the fourth recommendation in this report, which proposes a dedicated green industrial financing facility with eligibility criteria that prioritise manufacturing upgrading, energy-efficiency retrofits, and the development of green technological capabilities. Such a facility would direct capital to segments of the value chain that existing green-bond proceeds and blended-finance instruments have overlooked.

A useful regional precedent already exists in the form of the ASEAN Infrastructure Fund and its Catalytic Green Finance Facility (ACGF), jointly owned by ASEAN finance ministries and the Asian Development Bank (ADB). By combining co-financing with technical assistance, the facility helps governments prepare commercially viable green projects. However, its portfolio remains concentrated in infrastructure and services, including renewable energy, sustainable transport, water and sanitation, waste management, and climate-resilient agriculture (ADB, 2026). Even ASEAN's most advanced collective green-finance mechanism has therefore done little to support manufacturing capabilities or industrial technology upgrading, underscoring the need for future facilities to explicitly prioritise productive-sector investment.

Regional development banks elsewhere offer valuable design lessons. The Development Bank of Latin America and the Caribbean (CAF) has combined strong climate ambitions with a broad mandate that encompasses industrial, energy, and technological development. Its use of sovereign and private-sector lending, as well as blended-finance instruments, demonstrates how a regionally owned institution can support both public and private green industrial investment while maintaining strategic autonomy (CAF, 2026). Likewise, FONPLATA illustrates the benefits of a focused mandate, having successfully targeted productive sectors and underserved regions through tailored financing terms (FONPLATA Development Bank, 2024). The experience of the United Nations Industrial Development Organization (UNIDO) is equally instructive. Through its accreditation with the Global Environment Facility (GEF) and the Green Climate Fund (GCF), UNIDO has developed specialised expertise in linking industrial development with energy efficiency, renewable energy, and climate technology innovation (GEF, 2016; UNIDO, 2021). Embedding comparable technical capabilities within any future ASEAN financing facility – whether through partnership with UNIDO or through an in-house secretariat – would help ensure that lending criteria promote industrial capability building rather than simply replicate infrastructure-oriented models.

Table 5. Summary: Environmental objectives of assessment approaches of ASEAN member states taxonomies

TAXONOMY	ENVIRONMENTAL OBJECTIVES					ASSESSMENT APPROACHES	
	CLIMATE CHANGE MITIGATION	CLIMATE CHANGE ADAPTATION	BIODIVERSITY PROTECTION	CIRCULAR ECONOMY	OTHER LISTED OBJECTIVES	PRINCIPLES-BASED ASSESSMENT	TECHNICAL SCREENING CRITERIA
ASEAN Taxonomy	√	√	√	√		√ (Foundation framework)	√ (Plus standard)
Indonesia	√	√	√	√		√ (for MSME*)	√ (For non-MSME)
Malaysia-CCPT*	√	√				√	
Malaysia SRI** Taxonomy	√	√	√	√		√	
Philippines	√	√	To be addressed	To be addressed		√	
Singapore	√	√	√	√	Pollution prevention and control		√
Thailand	√	√	√	√	Sustainable use and protection of marine and water resources. Pollution prevention and control		√

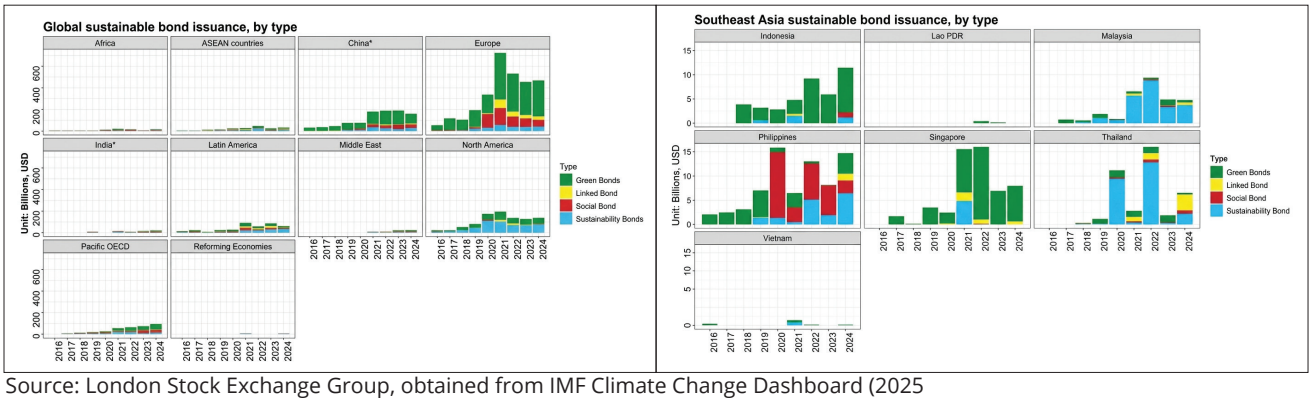
Source: UNEP-FI (2025)

Note: CCPT: Climate Change and Principle-based Taxonomy; SRI: Sustainable and Responsible Investment

The profile of green-bond issuers further underscores this structural gap. Most issuers were non-financial corporations, mainly operating in the property, energy, and infrastructure sectors, followed by governments (including state-owned enterprises, SOEs) and financial institutions (Climate Bond Initiative, 2022). The limited participation of manufacturing companies highlights the sector's untapped potential as a driver of industrial transformation.[4]

While private capital plays an important role in bridging the financing gap, effective public finance remains indispensable. In practice, private capital tends to follow public investment once enabling conditions create a favourable investment environment, underscoring the importance of strong state leadership in green finance mobilisation. Public financing instruments, including concessional loans, guarantees, grants, and co-investments, can derisk early-stage green projects, lower capital costs, and catalyse private-sector participation (Bachner et al., 2019; Bodnar et al., 2018; IPCC, 2022; Michaelowa et al., 2021; Polzin et al., 2019).

Figure 4. Green bond issuances by global region (a) and by ASEAN member states (b)



Source: London Stock Exchange Group, obtained from IMF Climate Change Dashboard (2025

Note: China+ (China, Korea, Mongolia, Taiwan), India+ (Bangladesh, India, Pakistan), Pacific OECD (Australia, Japan, New Zealand), Reforming Economies (Belarus, Georgia, Kazakhstan, Russia, Ukraine, Uzbekistan)

4. *To address sustainability challenges, manufacturing companies participate in business-to-business (B2B) initiatives to promote low-carbon development. One notable example is the Joint Crediting Mechanism (JCM), a Japanese government initiative that encourages Japanese companies to invest in low-carbon development projects in partner countries. This initiative provides incentives for projects, such as energy efficiency, renewable energy, and waste management. The JCM serves as an alternative financing source to mainstream green industrialisation. Many manufacturing companies in Southeast Asia affiliated with Japanese companies were the recipients of JCM. Another means includes loans from financial institutions to finance green-related activities.*

SECTION 7

Sustainability and Justice in ASEAN's GIPs

Sustainability has become a central principle of global development since the 1987 Brundtland Commission, reflecting growing recognition of development models to safeguard intergenerational well-being. Subsequent global frameworks, including Agenda 21, the Millennium Development Goals (MDGs), and the Sustainable Development Goals (SDGs), have translated this understanding into institutional commitments, underscoring that environmental, social, and economic systems are inseparable. Over time, sustainability has evolved from an environment-focused discourse into a multidimensional development paradigm, demanding systemic shifts in production, consumption, and governance.

Yet sustainability alone is insufficient to determine whether transitions work both socially and politically. The principle of justice has therefore become indispensable in shaping the future, as it accounts for diverse interests and voices while recognising the uneven distribution of costs and benefits that structural transformation inevitably produces. Without explicit attention to justice, the risks associated with sustainability transitions may reinforce or even deepen persistent development challenges, including inequality. In practice, translating this justice principle into something enforceable requires anchoring it in specific legal and procedural instruments, including environmental and social impact assessment (ESIA) requirements applied before projects proceed, meaningful public participation in permitting decisions, labour inspection regimes with the capacity to act on findings, accessible remedies for communities harmed by transition-related projects, and corporate human rights and environmental due-diligence obligations that extend liability up the supply chain.

Progress on environment-related SDGs has remained slow and fragmented (Table 6). ASEAN member states continue to struggle with SDG 14 (life below water) and SDG 15 (life on land), while performance on SDG 12 (responsible consumption and production) and SDG 13 (climate action) reveals persistent difficulties in decoupling economic growth from environmental degradation (Sachs et al., 2025). Although governments have begun promoting green industrialisation, especially through energy transitions, their efforts are constrained by structural dependencies, fiscal limitations, and entrenched reliance on carbon-intensive sectors. The result has been uneven and inconsistent transition pathways that fall considerably short of long-term sustainability ambitions.

Indonesia provides a compelling case of the tensions and contradictions that arise between economic growth imperatives and sustainability commitments. Its green industrial strategy centres on increasing domestic value from critical minerals through nickel processing and developing EV and battery ecosystems, reflecting the recent surge in regional investment (Figure 5). With limited domestic financial capacity, Indonesia has relied heavily on foreign investment, particularly from China, to develop these industries. As one of the world's leading producers of mined and refined nickel, ranking third globally with a total value of USD 51.9 billion between 2003 and 2024, Indonesia has become a major player in global

EV supply chains (FDI Markets, in Walker and Palaon, 2025).

However, this industrial policy achievement has been accompanied by severe environmental degradation, labour rights violations, and governance failures that fundamentally undermine justice in the transition process (Astuti et al., 2025; Walker and Palaon, 2025). Industrial parks powered by coal further contradict national climate commitments, creating high volumes of future committed emissions (Schreier et al., 2024). Similar tensions appeared in the Philippines, where its PET recycling sector suffered from weak law enforcement and hazardous labour practices (Asuncion, 2025). Meanwhile, Thailand's small and medium-sized enterprises (SMEs) remained far from meeting higher-level green industry standards (Durongkaveroj, 2025).

From an industrial policy perspective, Indonesia's down-streaming strategy has delivered important gains. It has expanded domestic processing capacity, attracted investment, and enabled the country to move up the nickel value chain. These achievements demonstrate that down-streaming can be an effective tool for industrial upgrading and should not be overlooked. The governance record, however, is less favourable. Weak environmental oversight, licensing systems that have not kept pace with rising risks, limited enforcement of labour standards, continued reliance on captive coal power, insufficient community participation, and inadequate remedies for affected workers and communities have undermined the legitimacy of the strategy. Experience from mineral-processing regions elsewhere suggests that these problems are not inherent to down-streaming itself. Safeguards such as phased licensing tied to environmental performance, independent monitoring of environmental impact assessments, specialised labour inspections, renewable-energy requirements for new industrial parks, and formal grievance mechanisms could preserve the industrial gains already achieved while strengthening their environmental and social foundations.

A deeper structural critique concerns the prevailing character of state-led GIP agendas across the region. These agendas have frequently been characterised as top-down, market-driven, and technocratic, failing to be genuinely people-centred and lacking meaningful 'democratic ownership' of the transition process. High state capacity does not necessarily lead to just outcomes. In some cases, state power has been deployed to bypass environmental impact assessments and to facilitate a form of para-coloniality in which the state acts as an intermediary enabling the extraction of critical minerals, such as nickel for the benefit of Global North supply chains while local communities and workers bear the primary costs of the resulting environmental and economic contradictions (Ridha, 2025). Institutional mechanisms for meaningful two-way technical engagement between government authorities and civil society or affected communities has frequently functioned as a 'one-way channel' for socialising policy decisions rather than as a genuine mechanism for gathering substantive input. In this context, community or labour welfare concerns tend to be treated as procedural compliance requirements, not a central objective of a just transition policy (Lalisang, 2025).

A related and equally significant critique concerns what has been described as a privatise-to-carbonise agenda, in which the public sector assumes financial risk and guarantees returns to attract private investment in green energy infrastructure while progressively hollowing out public institutional capacity. This model often leads to higher electricity tariffs for communities and imposes a substantial subsidy and debt burden on the state (Steinfort, 2025). In Indonesia, this dynamic is particularly pronounced, given that the state-led energy transition has

Table 6. Country-level performance on environment-related SDGs[5]

Country	SDG 12		SDG 13		SDG 14		SDG 15	
Brunei Darussalam		→		↓		→		→
Cambodia		→		→		→		→
Indonesia		→		→		↗		→
Lao PDR		→		↓				→
Malaysia		→		→		→		→
Myanmar		↗		↗		→		→
Philippines		→		↓		↗		↗
Singapore		↗		↓		↓		→
Thailand		→		→		→		→
Timor-Leste*				↑		→		→
Vietnam		→		→		→		→

Source: Sustainable Development Report 2025 (Sachs et al., 2025)

Notes:

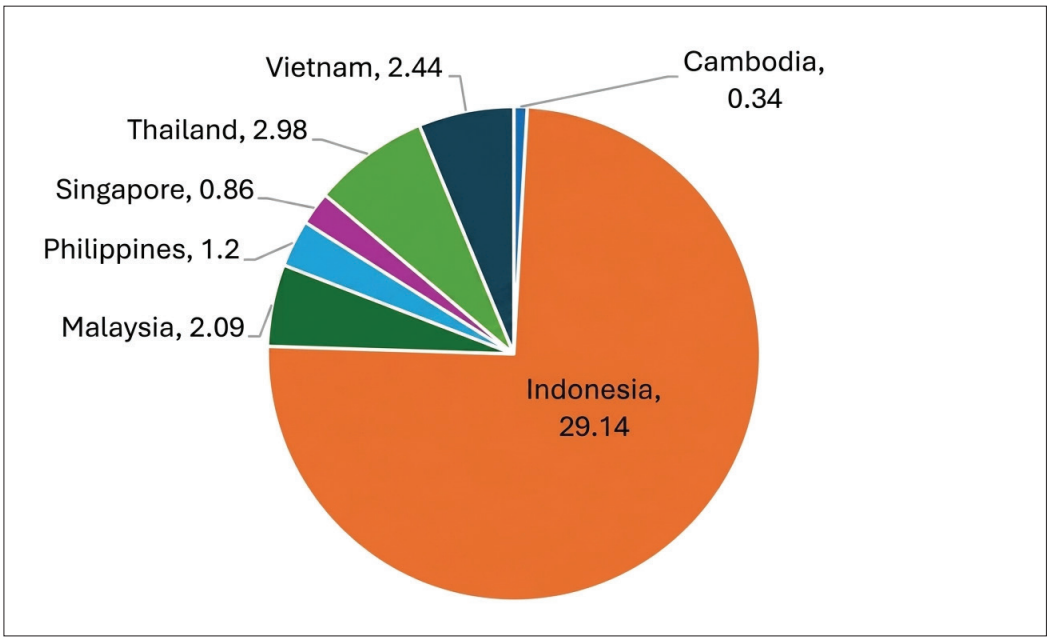
1. *Colour scale: Green: goal achieved; Yellow: challenges remain; Orange: significant challenges; Red: major challenges; Grey: insufficient data.*
2. *Trend arrows: ↑ on track or maintaining achievement; ↗ moderately improving; → stagnating; ↓ declining.*
3. *Timor-Leste became an official ASEAN member in October 2025.*

involved government guarantees of profits for Independent Power Producers (IPPs), effectively resulting in the state financing around 75% of new renewable capacity through the private sector.

The fiscal implications, in the forms of subsidies, compensation payments, and contingent liabilities, represent fundamental questions about who ultimately bears the costs and who captures the benefits of the green transition (Wijaya, 2025). Moreover, these specific guarantees could increase ISDS exposure as investors' 'legitimate expectations', which could form a breach of an investment treaty upon change in government policy regarding the guarantees.

5. *Following Mangukiya and Sklarew (2023), SDGs 12–15 are classified as environmental indicators*

Figure 5. EV investments in ASEAN, 2016-2024 (USD billion)



Source: FDI Markets in Walker and Palaon (2025)

SECTION 8

ASEAN's GIP Trajectory

Many developing ASEAN member states currently function mainly as assembly hubs within East Asian production networks, sourcing key components from economies such as China, South Korea, and Taiwan. These roles are highly mobile and can be easily relocated when production costs change. As a result,

Competition among ASEAN countries to attract foreign investment, through fiscal incentives and regulatory flexibility, tends to weaken collective bargaining power and deepen dependence on external technology providers. At the same time, ASEAN production networks remain more closely integrated with global markets than with regional ones, increasing exposure to external shocks. Recent trade tensions, supply-chain disruptions, rising logistics costs, and China's dominant position in regional value chains have made these vulnerabilities increasingly visible.These structural conditions suggest ASEAN member states should strengthen regional value chains and integrated production networks so they can reduce exposure to geopolitical and supply-chain risks.Structural transformation across Southeast Asia remains deeply uneven. While some countries have achieved notable progress in industrial upgrading, export structures also reveal intensifying competition among ASEAN members themselves (Figure 2). If this competition is not carefully managed, it risks triggering a regional 'race to the bottom', in which countries lower labour, environmental, or regulatory standards in pursuit of short.

term gains. Such dynamics can lead to stagnant wages, deteriorating working conditions, and weakened environmental protection. In the

absence of coordinated regional safeguards, Southeast Asia could even emerge as a pollution haven for industries labelled as 'green' but operating under lax standards, undermining both sustainability objectives and long-term industrial competitiveness. Energy-intensive data centres, marketed as digital or green infrastructure while drawing heavily on carbon-intensive grids and water resources, are a particular case in point.

To avoid adverse implications, ASEAN's development trajectory needs to shift away from a low-cost model towards one based on quality, innovation, and capability building. This requires coordinated action both nationally and regionally. At the national level, countries should align industrial policies with long-term sustainability goals supported by technological advancements, identify realistic entry points into green value chains, and invest strategically in skills development, R&D, and domestic supporting industries. Importantly, even mature or imported technologies can be adapted to local contexts, enabling countries to develop specialised roles based on their absorptive capacity rather than attempting to replicate frontier technologies.

National strategies alone are insufficient, given the wide differences in industrial capabilities across ASEAN member states. Differentiated development pathways are therefore necessary. More advanced economies can focus on higher-value and technology-intensive activities, while labour- or resource-intensive production may gradually shift to less-developed member states. However, rapid digitalisation and automation within global value chains are reducing the relevance of low-skilled labour and increasing demand for specialised skills, which remain scarce across much of the region. This structural shift weakens traditional manufacturing-led development models and raises serious questions about the continued applicability of the 'Flying Geese' development paradigm under current technological and geopolitical conditions.

These challenges point to the importance of regional coordination. At the ASEAN level, deeper cooperation can help pool resources, facilitate re knowledge sharing, and strengthen the region's collective position within global value chains. Coordinated social and environmental standards, particularly through the ASEAN Economic Community (AEC), are essential to prevent downward regulatory competition and the emergence of internal pollution havens. If implemented consistently, such coordination could support ASEAN's transformation into a more integrated, inclusive, and sustainable economic area. In practical terms, this coordination could take several possible legal forms, ranging from a non-binding ASEAN protocol or model law that member states adapt domestically, to a sectoral standard administered by an existing body such as the ASEAN Centre for Energy, to lighter-touch mechanisms such as peer review, periodic reporting, a complaint procedure for affected communities, or conditional access to ASEAN green finance facilities for states that meet agreed benchmarks.

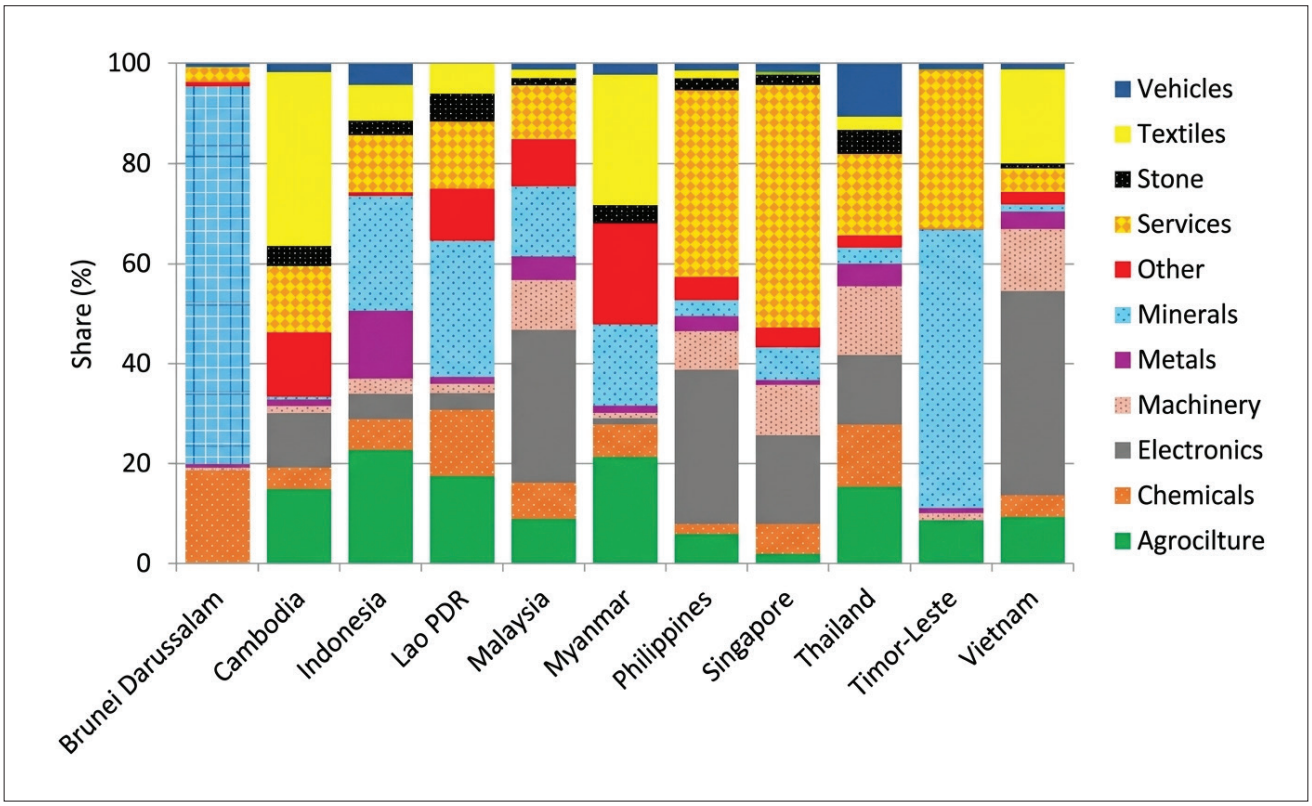
Realising this agenda also requires strengthening the region's collective capacity to access, adapt, and deploy critical technologies without excessive dependence on external actors. Technological sovereignty demands sustained investment in R&D and education, the acquisition of strategic technology combined with deliberate domestic capability building, effective local-content policies, and deeper regional collaboration to develop integrated ASEAN value chains.

Green industrial strategies should therefore aim not only to reduce technological dependence, but also to strengthen intra-regional linkages that facilitate the flow of inputs, skills, and knowledge. The ASEAN Vision 2045 offers an important framework for advancing this agenda, provided that GIPs are adapted to local conditions and aligned with climate -mitigation and adaptation priorities. Financing and institutions play a decisive role in translating these strategies into practice. Recent efforts to de-risk green-transition investments have

gained momentum, yet they risk reproducing business-as-usual outcomes if not carefully designed, particularly in contexts of weak fiscal discipline (Gabor and Braun, 2025). Addressing this risk requires institutional reforms that enhance the state's capacity to allocate resources strategically and regulate capital flows. There is therefore a need for a more coordinated, state-led green development mode, one in which public actors actively finance and steer transitions despite political economy constraints. This includes expanded public provision of essential services, credit and fiscal policies aligned with democratically ratified goals, and more democratic forms of production, such as worker or community ownership (Hauge and Hickel, 2025). A state-led approach can be effective only if it is accompanied by strong safeguards. Giving the state a larger role in allocating resources can also increase the risk that powerful interests capture the process.

To mitigate this risk, governments should ensure transparent decision-making, enforce anti-corruption measures, maintain competition so that public support does not create entrenched monopolies, subject major green investments to independent audits, and provide meaningful opportunities for communities affected by projects to participate and seek redress. These institutional dynamics are already emerging across Southeast Asia, albeit in different forms. Indonesia and Vietnam rely heavily on SOEs to shape transition pathways, while the Philippines exhibits stronger private-sector leadership (ACEN, 2022). Despite these differences, a growing convergence between public direction and private initiative suggests that the region has meaningful potential to pursue more coordinated and transformative transition trajectories. The entrepreneurial role of the state, particularly its capacity to invest in research, manufacturing capabilities, and emerging industries, remains critical (Mazzucato, 2014). This is reflected in

Figure 6. Export basket by sector in 2023



Source: Harvard Growth Lab (2025)

Vietnam and Malaysia's emergence as solar photovoltaic manufacturing hubs and Indonesia's efforts to build an integrated EV ecosystem. However, realising this potential requires sustained investment in enabling infrastructure, including resilient power grids, transport networks, research facilities, and low-carbon industrial zones. By building these foundations, the state can reduce risks for firms, crowd in private investment, and ensure alignment with long-term sustainability objectives.

Finally,these strategies must be grounded in a justice-centred sustainability framework to ensure that green industries provide equitable employment, uphold ecological limits, and prioritise livelihoods over accumulation.Fair distribution of benefits and costs, meaningful participation in decision-making, and universal access to a healthy environment are essential conditions for the legitimacy and durability of green industrial transitions. In practice, this requires reskilling programmes, social-protection measures, inclusive community engagement, and robust safeguards for and representation of marginalised and Indigenous groups. Advancing a genuinely just transition demands two foundational shifts in the orientation of GIP: (1) confronting predatory political and economic structures that distort policy outcomes; and (2) recognising communities as active agents in governance and implementation. Justice in this sense, must not be reduced to a procedural compliance requirement, but understood as a living process rooted in local realities, power relations, and collective agency (Lalisang, 2025).

Without integrated regional governance, harmonised standards, strong enforcement mechanisms, and inclusive institutions, Southeast Asia risks advancing green industrialisation in form while reproducing long-standing patterns of inequality, environmental harm, and fragmented development. Within ASEAN, the principle of 'non-interference' is criticised as a structural barrier that allows member states to disregard each other's internal labour and environmental conditions. This critique concerns the use of non-interference as a shield against scrutiny of national conduct, and it is worth being precise about what would and would not change if the barrier were addressed. Non-interference as a foundation for political and security relations among sovereign states need not be abandoned for ASEAN to adopt the agreed technical standards, peer review, and reporting mechanisms discussed earlier in this report, since those mechanisms operate through voluntary commitment and mutual monitoring rather than supranational enforcement. Therefore, regional policies must move beyond 'formal consultations' to genuine strategic negotiations that account for structural power asymmetries and protect local livelihoods.

A people-centred regionalism is a key to define 'democratic ownerships' to design what kind of green industrial policy will be built, from whom, for whom, and by whom. It requires a more active, integrated, and justice-oriented approach to regional governance, in which ecological survival and social equity are treated not as secondary considerations but as foundational imperatives.

"these strategies must be grounded in a justice-centred sustainability framework to ensure that green industries provide equitable employment, uphold ecological limits, and prioritise livelihoods over accumulation"

SECTION 9

Conclusion and Recommendations

The mainstream discourse on GIP has thus far been dominated by the perspectives of advanced industrialised countries, which tend to emphasise decarbonisation, carbon efficiency, and compliance with global environmental standards. Within this framework, LMICs are positioned as recipients of technology, objects of green investment, or suppliers of raw materials for the global energy transition. Consequently, GIP in the Global South often reproduces practices of green colonialism.

ASEAN, as a region with diverse economic development trajectories, currently exhibits structural vulnerabilities and mounting tensions between national interests and global pressures. The region stands at a crossroads, confronting two major and simultaneous pressures, namely China's dominance over green-technology production chains, and the US's deployment of tariffs as an instrument to reshape global trade governance. Faced with these pressures, member states have tended to pursue bilateral pathways in search of short-term gains, which in turn weakens ASEAN's collective position, deepens regional fragmentation, and ultimately contradicts several agreed regional agendas. ASEAN's limited political cohesion and weak institutional mandate render the region structurally vulnerable to external pressures.

GIP in ASEAN is further constrained by global geopolitical competition for accessing critical natural resources. These dynamic risks turning the ASEAN region into merely a stage for US–China rivalry, potentially dragging ASEAN countries back into the role of supplying green raw materials. Beyond the historically uneven global economic order, the fragmented and competitive regional political economy of ASEAN could also trigger a new 'race to the bottom'. Loose coordination mechanisms among member states have proven insufficient to prevent cut-throat competition in attracting FDI, whether in labour standards, environmental regulations, or fiscal incentives. The cumulative effect of this competition has been to entrench ASEAN's position as an assembly hub without generating the meaningful technological sovereignty and justice-based protective frameworks necessary for genuine industrial upgrading.

The main barriers to a just green transition in ASEAN converge on three structural issues, which include dependence on external technology and financing, dependence on foreign-controlled data and digital systems, and inequality in policy space within the international trading and investment regime. Without technological capacity ASEAN countries risk remaining permanently confined to roles as natural resources providers, labour suppliers, and assembly platforms, unable to advance within the local value chain. Without sovereign control over data and digital systems, ASEAN countries will be unable to optimise their participation in or derive benefit from global supply chains. Without equal policy space, ASEAN governments will lack the legal and institutional instruments needed to compel technology transfer from global corporations and ensure meaningful local representation and benefit-sharing. These three weaknesses are deeply interconnected and must be addressed collectively, going beyond national efforts that often undermine each other.

The success of ASEAN's green industrialisation depends critically on the region's ability to build

a mutually reinforcing and integrated economic bloc. This is needed to champion policy space, technological sovereignty, and green standards aligned with responsible environmental, labour, and fiscal benchmarks. Without regional coordination as its foundation, GIP will struggle to transform ASEAN's economies into ones that are more just, inclusive, and sustainable. ASEAN member states must also collectively exercise political caution regarding current models of green industrialisation and investment. If not, the region's considerable potential risks being captured once again for the benefit of external powers, reproducing, under green legitimacy, the colonial extractive patterns of previous eras.

"Strengthening regionalism is therefore an urgent and collective strategic imperative. Only by acting in concert can ASEAN enhance its bargaining power, secure the policy space necessary for a just green industrialisation and prevent new forms of dependency and resource exploitation that would reinforce green colonialism. Strong regionalism would enable ASEAN to position itself not merely as a market or resource supplier, but as an active and consequential participant in the restructuring of global production chains. This is not a defensive response to immediate crises; it is a long-term political project to build the foundations of sovereign, inclusive, and sustainable development. The region has the potential to serve as a model for Global South development agendas, charting a middle path between green growth, structural justice, and geopolitical resilience, especially amid the current disorder of global rules and institutions. Realising this potential requires reconceptualising GIP around a compelling and coherent narrative of structural transformation that is rooted in social justice, ecological balance, sovereign national development, and democratic aspirations. In this context, strengthening ASEAN regionalism for the GIP agenda should be organised around four interconnected collective priorities.

First, ASEAN needs to redefine GIP in order to restructure the industrial development pathways of each member state, directed towards a structural green economic transformation grounded in sovereignty, self-reliance, community-centred justice, and the strengthening of collective regionalism — not merely decarbonisation or compliance with global standards determined by market orientations, particularly in the advanced economies. The GIP agenda must become a strategic industrial framework aimed at achieving a just, sovereign, and sustainable structural transformation intended to create new advantages through technology-based and sustainability-oriented green industrialisation, while distributing economic benefits fairly without diminishing sovereignty in the green economy. This includes building a platform for economic and political cooperation based on the principle of South—South solidarity that opens equitable policy space for member states to achieve development equality, such as more substantive special and differential treatment rules for LMICs, including greater flexibility to implement industrial subsidies, local-content requirements, and technology-transfer policies. More specifically, ASEAN must actively promote the negotiation of genuine technology transfer.

"Strengthening regionalism is therefore an urgent and collective strategic imperative. Only by acting in concert can ASEAN enhance its bargaining power, secure the policy space necessary for a just green industrialisation and prevent new forms of dependency and resource exploitation that would reinforce green colonialism."

Second, ASEAN needs to establish a collaborative upgrading framework for green industrial strategy. This requires shifting member states' green industrialisation strategies from fragmented competition toward integrated cooperation, leveraging the region's institutional diversity and complementary economic structures as the foundation of collective strength. ASEAN should develop a complementary and integrated

green industrial ecosystem, implementing a coordinated regional division of labour based on each member state's absolute advantages. Central to this framework is the development and enforcement of binding collective green industry standards that harmonize environmental, labour standards, and fiscal incentives to prevent destructive and disadvantageous competition within ASEAN. This collaborative upgrading framework should also be supported by the establishment of a collective regional fund for R&D in green industrial technology, which would simultaneously address member states' fiscal constraints and reduce the region's collective dependence on external green and digital technologies.

Third, it is important to institutionalize people-centred regionalism within ASEAN's governance architecture. Realizing a just energy transition requires member states to commit to reforming ASEAN institutions so that the region moves beyond formal consultations toward genuine strategic negotiations that account for structural power asymmetries and protect local livelihoods. People-centred concerns should no longer be confined to the ASEAN Socio-Cultural Community (ASCC) pillar but also be integrated into the ASEAN Economic Community (AEC), embedding an orientation towards a regional economic agenda that prioritises people and the planet. The AEC Strategic Plan 2026–2030, which aims to realise an inclusive, participatory, and people-centred ASEAN under the ASEAN Community Vision 2045, provides an important institutional vehicle for this agenda. Translating this commitment into practice requires substantive societal interventions grounded in a justice-centred sustainability framework.

Fourth, building a sovereign and equity-oriented green financing architecture for ASEAN is critical, given that the current global green finance landscape, characterised by high borrowing costs, private capital dominance, conditionality-laden concessional flows, and the governance structures of the multilateral development banks (MDBs), has reflected the interests of advanced economies. This systematically constrains ASEAN member states' ability to finance green industrial transformation. Addressing this requires action at regional and multilateral levels. At the regional level, ASEAN should establish a dedicated green industrial financing facility, a collectively governed instrument that pools concessional resources, provides guarantees for early-stage green industrial investments, and offers longer-term patient capital suited to the timelines of industrial capability building. Such a facility should be designed to prioritise manufacturing-sector investments and technology development, addressing the critical gap identified in current green-bond allocations that have predominantly financed power generation and real estate rather than industrial transformation. At the multilateral level, ASEAN member states should coordinate their engagement with ongoing reform processes to ensure that the emerging global green finance architecture creates genuine policy space for LMICs to develop their own green industrial strategies rather than reproducing the conditionality-driven patterns of previous development finance regimes.

Moreover, ASEAN should also collectively advocate for debt-restructuring mechanisms that relieve the fiscal pressure constraining lower-income member states' green investment capacity. Precedents exist in the ASEAN Infrastructure Fund and its Catalytic Green Finance Facility, although their pipelines have concentrated on infrastructure rather than manufacturing (ADB, 2026), and in comparable institutions such as CAF in Latin America (CAF, 2026), FONPLATA (FONPLATA Development Bank, 2024), and UNIDO's experience channelling GEF and GCF resources into industrial upgrading (UNIDO, 2021; 2022), all of which offer design lessons for calibrating eligibility criteria towardw industrial capability building rather than infrastructure alone.

SECTION 10

Future Research Avenues

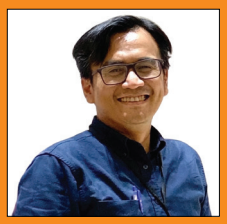
The conclusions of this report point to the need for further studies aimed at reformulating GIP in ASEAN within the context of strengthening regionalism as a strategic response to the instabilities and inequities of the current global rules-based order. Such studies are necessary to provide constructive and critical interventions at a moment when ASEAN, having agreed upon the ASEAN Vision 2045 in 2025, is now moving towards implementation through the AEC Strategic Plan 2026–2030. Future research should also engage substantively with regional agendas specifically designed to strengthen integration for green industrial transformation, including the ASEAN Plan of Action for Energy Cooperation and the ASEAN Minerals Cooperation Action Plan, both of which are progressively aligning their strategic objectives with the broader goals of the ASEAN Economic Community. Given the urgency of these challenges, future studies within this scope should prioritise the following two areas:

1. Developing a model of collaborative upgrading on ASEAN's regional integration for green industrialisation. This should focus on mapping the absolute and comparative advantages of its member states to build a more inclusive and complementary industrial collaboration model, and on identifying an equitable division of labour and specialisation among them. In this context, competition-based mechanisms are of limited analytical and policy relevance. Conducting a regulatory impact assessment to identify policy constraints and potential legal risks arising from the implementation of asymmetrical trade and investment agreements across ASEAN. This research agenda encompasses mapping and harmonising green trade and investment policies across member states, identifying legal gaps and inequalities embedded in existing agreements, and formulating an inclusive policy framework that supports green industrialisation, including local-content standards, technological sovereignty provisions, fiscal incentives, and protective mechanisms against trade and investment disputes. This study should also systematically assess the implications of bilateral agreements, most notably the US Reciprocal Trade Agreement framework, for ASEAN regional integration, particularly with respect to the governance of critical mineral processing and value addition. Such an assessment is essential for understanding the constraints these agreements impose on more sovereign ASEAN regional integration in GIP. Subsequently, this research stream is expected to contribute to the formulation of clearer rules of engagement in ASEAN's trade cooperation agreements with external partners, thereby strengthening the region's collective bargaining power in pursuit of an equal and inclusive GIP grounded in the principles of South–South solidarity.

2. Calling for a prospective and normative inquiry into people-centred regionalism as an alternative framework for ASEAN regional integration to design what kind of green industrial policy will be built, from whom, for whom, and by whom. This research strand should examine the conditions under which ASEAN can develop genuinely public and democratic pathways for green industrialisation. In doing so, this research agenda would provide the conceptual and empirical foundations for a form of ASEAN regionalism that is not merely institutionally stronger, but substantially more just, inclusive, and ecologically grounded.

ILLUSTRATION By: Agah Nugraha Muharam

Author Profile

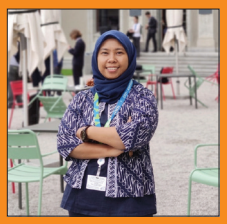


Hadi Rahmat Purnama

LCITI

Hadi Rahmat Purnama has been a lecturer in the International Law Studies Department of the Faculty of Law, University of Indonesia since 2003. He is currently in the final year of the Doctorate in Law at Vrije Universiteit Amsterdam, Netherlands. Hadi is currently the Chair of the Institute for International Law Studies (LPHI), Faculty of Law, University of Indonesia and the senior researcher at the Legal Centre of Corporation, International Trade and Investment (LCITI).

He currently serves as Convenor of the Southeast Asian Human Rights and Peace Studies Network (SEAHRN), a network of research centers and lecturers on Human Rights Law in Southeast Asia whose members come from various universities in Indonesia, Thailand, Malaysia, the Philippines, Vietnam, Myanmar, and Cambodia.



Rachmi Hertanti

Transnational Institute

Rachmi is a researcher at Transnational Institute on International Trade and Investment Policy and a PhD candidate at Philipps-Marburg Universiteit, Germany. She has been involved in several trade and investment policy advocacy and campaigns since 2011 with a focus on Intellectual Property Rights on seeds and medicines, Investment treaties and corporate lawsuits, including trade-related impacts on energy and raw materials.

Rizky Banyualam

LCITI

Rizky Banyualam Permana has been a lecturer in the Department of International Law at the Faculty of Law, Universitas Indonesia since 2020. He earned his Bachelor of Laws from Universitas Indonesia and a Master of Laws (LL.M.) in international trade and investment law from Maastricht University, the Netherlands, and completed his training at the Hague Academy of International Law in the Netherlands. Currently he is completing his doctorate research project on trade and sustainability at Universitas Indonesia in cooperation with Macquarie University.

His research focuses on international trade law, international investment law, ASEAN, and the international legal aspects of digital technology as well as sustainability. From the beginning of his academic career, Rizky has actively engaged in research, serving as a researcher at the Djokosoetono Research Center (2016–2018), the International Law Research Center (FHUI) since 2017, and the Legal Center for International Trade and Investment (FHUI) since 2019. He is also affiliated with Indonesian Society of International Law Lecturers (ISIL) and Society of International Economic Law (SIEL). He has also contributed his expertise to various projects with government institutions such as the Ministry of Foreign Affairs, Ministry of Trade, and Ministry of Industry, as well as with private sector stakeholders on issues of international trade and investment.

Nur Firdaus
BRIN

Nur Firdaus is a researcher at the Research Center for Macroeconomics and Finance, National Research and Innovation Agency (BRIN), Indonesia. He graduated from Universitas Indonesia with a Bachelor's degree in Business Administration. He obtained his master's in Banking and Finance from Monash University. He is a PhD student in the team on Sustainability Transitions at the Graduate School of Global Environmental Studies, Kyoto University. His research interests are finance, sustainability transitions, and ecological economics

Pihri Buhaerah
BRIN

Pihri Buhaerah is a researcher a the Research Center for Macroeconomics and Finance, Indonesia's National Research and Innovation Agency (BRIN), specializing in macroeconomics, development economics, and econometrics. He manages the Socio-Economic Data Center within the Governance, Economic, and Public Welfare Research Organization. He earned his bachelor's degree in economics from Universitas Padjadjaran and a master's degree in international and development economics from the Australian National University. His research interests include sustainable economic development and green industrialization

Salsabila Putri Noor Aziziah
PUANIFESTO

Salsabila (Bila) is the facilitator for Indonesia CSO for Economic Justice and co-coordinator for a feminist collective called Puanifesto. In both of her roles, she mainly manages programs, research projects, advocacy and campaigns on areas such as trade agreements, climate crisis, gender justice, and decolonization. Prior to her roles, she published a scoping study to explore the impacts of renewable energy policy and World Bank climate financing towards women in Indonesia co-authored with local communities of Solidaritas Perempuan and Netherlands-based environmental organization Re-Course. She holds an undergraduate degree from the Department of International Relations, Universitas Indonesia. In recent years she has also developed interests to conduct research on the climate-digitalization-trade nexus using a decolonial feminist perspective.

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