



G20

SOUTH AFRICA 2025



Solidarity

Equality

Sustainability

Removing International Obstacles to Sustainable Industrial Policy

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November 2025

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Acknowledgements

The authors express their gratitude to the President of South Africa, His Excellency Cyril Ramaphosa, for constituting the G20 Task Force on “Inclusive Economic Growth, Industrialisation, Employment And Reduced Inequality”, the work of which this report aims to support.

We offer our deep thanks to Mr Zane Dangor, the G20 Sherpa of South Africa and the Director General of the Department of International Relations and Cooperation and Acting Director-General in the Department of Trade, Industry and Competition, Dr Mabitjie-Thompson, together with Sous-Sherpa Ambassador Xolisa Mabhongo and Ambassador Dave Malcomson for supporting and championing the work of the Task Force and this report.

The authors also wish to acknowledge with gratitude the exceptional support provided by the Institute for Economic Justice (IEJ), a resource partner to the Task Force 1 and the G20 Sherpa, who were critical to the completion of this report. In particular, we thank Kamal Ramburuth, Nerissa Muthayan, Given Sigauqwe, and Helen Bhuka for their support.

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Acronyms

AI	Artificial Intelligence
COP	Conference of the Parties (to the UNFCCC)
COVID-19	Coronavirus Disease 2019
DRC	Democratic Republic of the Congo
EMDE	Emerging Markets and Developing Economies
EST	Environmentally Sound Technology
EU EPA	European Union Economic Partnership Agreement
FTA	Free Trade Agreement
G20	Group of 20
GATS	Global Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GPA	Agreement on Government Procurement
ICJ	International Court of Justice
IMF	International Monetary Fund
ISDS	Investor-State Dispute Settlement
MDB	Multilateral Development Bank
NAFTA	North American Free Trade Agreement
R&D	Research and Development
SDG	Sustainable Development Goal
SDR	Special Drawing Rights
SOE	State-Owned Enterprise
TRIMs	Agreement on Trade-Related Investment Measures
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UNFCCC	United Nations Framework Convention on Climate Change
USMCA	United States-Mexico-Canada Agreement
WTO	World Trade Organization

1. Introduction

The world is grappling with intersecting and mutually compounding crises. Seven of the nine planetary boundaries have been breached, pushing Earth's biophysical systems towards tipping points. Beyond these points, ecological, hydrological, and climatic disruptions become irreversible, accelerate, and become subject to abrupt jumps and complex feedback loops.¹ Social institutions and economic structures are approaching critical limits, as deepening inequality, debt distress, and precarity propel cycles of fragility, unrest and geopolitical instability.

Crucially, these crises do not unfold in isolation. Climate change, material pollution, and biodiversity loss endanger not only ecosystems, but also livelihoods, health, and economies. Poverty and economic underdevelopment threaten the dignity and wellbeing of individuals, families, and communities. They also limit the capacity of countries to respond to environmental risks or to harness the opportunities of environmentally sustainable transformation. Both within countries and across borders, economic inequality damages social trust, weakening cooperation and amplifying uncertainty in domestic and international politics alike.

Bold, transformative, and sustainable policies are needed to tackle these crises and to deliver sustainable and inclusive development across the globe. Moving beyond a logic of incremental intervention to tackle the structural drivers of inequality and ecological harm, requires national strategies, anchored in international solidarity and cooperation mechanisms, able to align production structures with economic, environmental, and social goals. This requires sustainable industrial policies. This report recognises the growing global imperative for sustainable industrial policies, outlines the key international constraints that hinder their implementation, and proposes pathways to remove these barriers. Removing these barriers would empower states to design and implement industrial policies on their own terms, so this report does not focus on what these policies could look like.

When unimpeded by multilateral constraints, sustainable industrial policies can drive productive transformation, industrialisation, diversification, and quality job creation,² while respecting both planetary boundaries and social foundations.³ A sustainable industrial policy toolkit would include instruments such as public procurement, subsidies, credit and guarantee schemes, public investment, tax incentives, intellectual property regulations, trade policies, environmental and labour standards, and technology transfer frameworks.⁴ (An overview of core industrial policy tools can be found in Appendix 1). Sustainable industrial policy leverages planning institutions and pipeline development,⁵ industrial ecology,⁶ national and regional supply chain coordination,⁷ and value-added strategies⁸ under a holistic, 'multi-solving',⁹ and transformational approach. Sustainable industrial policy is able to address both the generation and distribution of economic value, and is aimed not only at energy and heavy industry, but also at sectors such as agriculture, transport, health, and digital infrastructure. It ensures that needs are fulfilled equitably and sustainably,¹⁰ and drives a true expansion of human capabilities.¹¹

Sustainable industrial policies must play a central role in economic transformations and just transitions, by reshaping national and international systems of production and provisioning. They are indispensable tools for strengthening and diversifying productive capabilities,

including through technological development and deployment, infrastructure planning and development, industrial regulation and investment, resource governance, enhanced energy security and access, skills development, and decent job creation. Such transformation is needed across all economies, although these tools are particularly important for addressing the needs of developing economies. They are particularly necessary for those vulnerable to physical climate risks and biodiversity loss, in light of chronic underinvestment in climate change adaptation and nature conservation; for those dependent on greenhouse gas (GHG) emissions-intensive and/or extractive industries, and thus highly exposed to transition-related risks and macroeconomic risks related to commodity cycles;¹² and for those where the economic base to produce necessities, or to generate foreign exchange to procure necessities from abroad, is insufficient to secure dignified living standards for all.¹³

Sustainable industrial policy offers the chance to move beyond a more limited policy that centres economic growth, at the expense of other developmental objectives. Instead, it has the potential to remake production and provisioning structures in a way that confronts systemic causes of poverty, hunger, un-/under-employment, and inequality, both within and across countries (under the right governance frameworks); to align productive capabilities with national and global climate and environmental goals; and ultimately to strengthen international cooperation and multilateralism in the face of global challenges.

Despite its wide adoption in already industrialised nations, the sustainable industrial policy agenda is still out of reach for developing nations. This raises distributional concerns, potentially reinforcing an unequal international division of labour, and limiting the ability of developing nations to reach the sustainable development frontier.¹⁴ Yet again, rich nations are kicking away the ladder, with practices and global norms that prevent the effective and full use of sustainable industrial policy tools by the world's poorest nations.¹⁵

Rather than enabling the policies needed for sustainable economic transformation, the rules and norms that currently shape international trade, investment, and finance pose many obstacles to implementing sustainable industrial policies.¹⁶ On international trade and investment, WTO rules often explicitly limit the use of core industrial policy instruments, free trade agreements impose stricter constraints on sustainable industrial policy tools than the WTO 'baseline', and Investor-State Dispute Settlement (ISDS) clauses have a chilling effect. On technology and intellectual property, the WTO agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and TRIPS+ intellectual property rules limit access to technologies and know-how, while formal restrictions on the use of strategic procurement policy curtail technology transfer. On financing, costs are systemically biased against developing countries, including through flawed risk models and biased credit ratings and global regulatory agreements, such as the Basel frameworks; financial liberalisation, debt distress and underinvestment in development banks compound this.

This is why global collaboration on sustainable industrial policy is essential moving forward. Without this, national governments will not have sufficient policy space to implement robust sustainable industrial policy. Global coordination allows for the fostering of access to 'innovation space' for all countries and peoples, and strengthens cohesion around shared challenges, and opportunities to improve global resilience to macroeconomic, financial, ecological, and sociopolitical risks.

This report unpacks why sustainable industrial policies are needed to grapple with today's overlapping crises and how we can work towards a multilateralism that enables, rather than obstructs, transformative national policies. The foundational concepts, practices, histories, and critiques of industrial policy in general, and sustainable industrial policy in particular, have been extensively examined in other literature. This report does not seek to rehash or summarise that, nor to prescribe specific approaches to designing or implementing sustainable industrial policies. Its purpose is, instead, to investigate the elements of multilateral governance — particularly in trade, investment, intellectual property, and finance — that constrain the potential of sustainable industrial policies to advance national development priorities, and to identify steps the international community can take to address these obstacles.

This report was prepared alongside the deliberations taking place in the G20 Task Force on Inclusive Economic Growth, Industrialisation, Employment and Reduced Inequality, an initiative of the South African G20 Presidency. The Task Force sought to develop the G20 Non-Binding High-Level Principles on Sustainable Industrial Policy. This process revealed fractures within the G20, and a lack of alignment between G20 members on global economic governance, climate change, the financing of transitions, and the deployment of industrial policies. These fractures played out against the backdrop of a backlash against the Sustainable Development Goals and international human rights standards and development norms. The focus on sustainable industrial policy within a leading forum of multilateral engagement, together with the structural constraints of the G20 as a consensus forum, prompted the South African G20 Presidency to request the authors to interrogate, more broadly, the manner in which the existing multilateral system restrains policy space for sustainable industrial policy.

2. Why the world needs sustainable industrial policy

Meeting the economic, social, and ecological crises the world is facing requires reshaping how economic value is created, captured, and distributed. This reshaping includes technological innovation and deployment, the reconfiguration of energy and resource systems, the reorganisation of local, regional, and global supply chains, and the realignment of labour markets and skills infrastructure. This can be done through sustainable industrial policies, which provide the means to navigate converging crises, while directing structural change toward sustainability. This section begins by examining how today's ecological and economic crises are rooted in systems of production, and then considers the role of sustainable industrial policy in enabling structural transformation that advances ecological integrity, social inclusion, and economic resilience.

Global ecological crises stem from prevailing production structures, particularly in the patterns of production and consumption of advanced economies. Climate change, an effect of increasing atmospheric concentration of GHG, is driving more frequent and intense heatwaves, floods, and storms that affect hundreds of millions of people each year, as well as having impacts

related to rising sea levels, altered precipitation patterns, ocean acidification, deforestation, and degradation of soils, land, ecosystems, and habitats. Fossil-fuel based energy systems, industrial processes, and deforestation and other land-use change (often directly linked to economic production), are the principal sources of GHG emissions. These include carbon dioxide, methane, and nitrous oxide, which have increased 50%, 200%, and 25%, respectively, from pre-industrial levels.¹⁷ Wildlife populations have declined by an average of 73% since 1970¹⁸ and one million species (over 10% of total described species) are at risk of extinction.¹⁹

Habitat destruction/fragmentation and ecosystem degradation are caused by deforestation, chemical-intensive agriculture, extractive industries, and infrastructure expansion.²⁰ Renewable natural resources, including soils, forests, fish stocks, and fresh water are being used roughly 1.8 times faster than their global regenerative capacity,²¹ while the use of non-renewable, extracted material resources, including metals and minerals, has tripled since 1970 and could double again by 2060.²² Global levels of waste and pollution have reached dangerous thresholds, contaminating air, land, and water, while threatening ecosystems and causing millions of premature deaths each year.²³ Low- and middle-income countries and frontline communities bear the brunt of these impacts.²⁴

Market forces alone will not suffice in addressing ecological crises; this depends on a transformation of production and provisioning at a scale and speed that requires using sustainable industrial policy tools.²⁵ This requires reconfiguring energy systems, including: industrial production; transportation and construction; agriculture, forestry, and fishing. It also requires reconfiguring consumption patterns. All this must be done in a manner that reverses rising GHG emissions, toxic pollution and waste, resource attrition, and biodiversity loss. It entails a scaling up of clean production and a scaling down of destructive activities, both among industries (for example, scaling down fossil fuel industries while scaling up clean energy industries), and within industries (for example, scaling down harmful production processes and technologies in industries such as steel, cement, glass, paper/pulp, etc., while scaling up circular business models²⁶ and new production technologies).²⁷ Such strategies must recognise the uneven distribution of industrial capabilities, and the associated need for differentiated obligations among nations in the sequencing of these changes.

Economic crises of underdevelopment, poverty, and inequality are equally rooted in current systems of production and provisioning. Most notably, many countries' weak industrial base limits their ability to produce domestically all the necessities required for dignified living standards for all, or to secure sufficient foreign exchange to procure those necessities from abroad. Similarly, countries with highly concentrated economic structures, particularly those dependent on production of primary commodities, whether extractive or agricultural, face tremendous obstacles to building macroeconomic and financial resilience and diversifying economic production. These countries are often locked into a vicious cycle of exposure and vulnerability to volatile global commodity markets. Undiversified productive structures that rely heavily on low-value-added commodities limit domestic value creation and capture.²⁸ They also keep countries in a state of technological dependence, and undermine efforts to alleviate poverty, embedding structural constraints that curtail economic and policy autonomy. For these reasons, productive capabilities (proxied by economic complexity, export diversity, and sophistication) display strong persistence over time.²⁹ Such persistence is reinforced by the organisation of global value chains,

which tend to lock countries into specific stages of production, with limited opportunities for technological upgrading or diversification. Breaking out of low-value segments of global value chains is a profound challenge.³⁰

History shows that countries need proactive industrial policy to build and maintain strong, diversified, and resilient productive bases, and thus to overcome the structural vulnerabilities that contribute to poverty, instability, and dependence.³¹ Indeed, the advanced economies of the G20 have historically used industrial policy to transform their economies over extended periods of time. Some of the most successful cases of economic transformation come from the countries that have used industrial policy most proactively and ambitiously, such as the ‘East Asian Tigers’.³² The Japanese and Korean auto industries required decades of loss-making public investments before national automakers succeeded in the global market.³³ Manufacturing is often central to industrial policy because it underpins economic diversification and resilience. Manufacturing drives productivity growth through economies of scale and technological progress, offers more stable and exportable outputs than primary commodities, buffering the balance of payments, and generates quality employment while stimulating labour demand in other sectors.³⁴

The climate transition raises the stakes of industrial transformation: the uneven geographical distribution of jobs, trade, innovation, and value related to low-carbon technologies and industries magnifies the potential gains and losses for national economies.³⁵ The rapid pace of technological change and shifting patterns of demand that are associated with green ‘windows of opportunity’ underscore the importance of urgent, active industrial policy interventions at scale, to enable firms in developing countries to seize the opportunities of the green transition. Climate finance, limited in scale and unequal in access, has so far done little to mitigate the risk of deepening inequality associated with decarbonisation. And yet, an exclusive focus on financing the transition is not sufficient: even with adequate financing, the climate transition risks pushing developing countries still further to the periphery if they remain dependent on imported technologies.³⁶ This highlights the importance of strategies that prioritise technology, intellectual property, and capability exchange — not just financing.

Decent work — including the creation of quality jobs, and respect for labour rights, social dialogue, and social protection — is an essential mechanism for advancing a just transition, and ensuring that industrialisation is inclusive and that its benefits are delivered equitably to people and communities.³⁷ The prospects for employment growth in sustainable transitions are strong, but it is critical that new jobs are quality jobs.³⁸ Sustainable industrial policy offers an opportunity to enhance the quality of work; deliver good wages; advance gender equality in access to employment, career progression, and pay; improve occupational safety and health; ensure better conditions for small and micro enterprises that constitute the bulk of employment in many developing countries; and provide universal social protection, including through employment formalisation. However, jobs in the green industries remains concentrated in a handful of countries. For instance, over 42% of renewable energy jobs are in China, followed by the EU, Brazil, and the USA, which altogether account for three-quarters of renewable energy jobs. Meanwhile, the entire African continent has only captured about 2.4% of jobs created in the sector globally.³⁹ Skills development plays a central role in ensuring that countries can not only create jobs, but also fill them. That includes strategies for reskilling workers in declining industries, as well as aligning training systems and skills frameworks with industrialisation goals;

supporting partnerships among employers, workers, governments, and educational institutions; and ensuring inclusive access to training opportunities, including for youth, women, and marginalised groups.⁴⁰

Sustainable industrial policy can drive purposeful economic transformation that supports human and ecological flourishing in an integrated way. This entails recognising the interlinkages across the environmental, social, and economic dimensions of sustainable development, while using policy to address development gaps across all three simultaneously.⁴¹ It is imperative that industrial policy frameworks do not make the mistake of assuming that environmental and human ecologies can withstand endless levels of pollution, degradation, and disruption.⁴² Rather, they must prioritise and directly address ecological concerns, because systems of economic production are responsible for ecological challenges, and economic resilience depends on preserving our environment and ecologies. In doing so, participation in global sustainable transitions can open new avenues for economic development, if pursued strategically and on fair terms. For example, growing global demand for renewable energy and electrification offers opportunities for value capture and industrial upgrading, but requires that countries carefully assess their engagement options and weigh associated costs and benefits.⁴³

Reinforcing the economic and ecological necessity for sustainable industrial policies is the recognition that there are legal protections, and indeed obligations, for state action to address climate change. This has been emphasised in a recent Advisory Opinion from the International Court of Justice (ICJ).⁴⁴ The opinion highlights a broad range of measures — naming many industrial policy tools, including licensing, subsidies, and the regulation and reform of production and consumption — that are not merely permissible, but also necessary, when aligned with states' duties relating to climate change mitigation and adaptation. It also highlights the duty of sustained, good-faith cooperation among states, in recognition of climate change as a common concern. Notably, these obligations are defined not only by climate treaties, such as the Paris Agreement and the UN Framework Convention on Climate Change (UNFCCC), but also international human rights conventions and customary international law. As such, the advisory opinion forms part of a broader body of international law and legal discourse that establishes states' duties to respect and protect human rights, including those mediated by the environment, such as the rights to life, health, food, water, and housing, as well as the right to a clean, healthy, and sustainable environment. These duties should inform the interpretation of state obligations under trade and investment regimes.⁴⁵

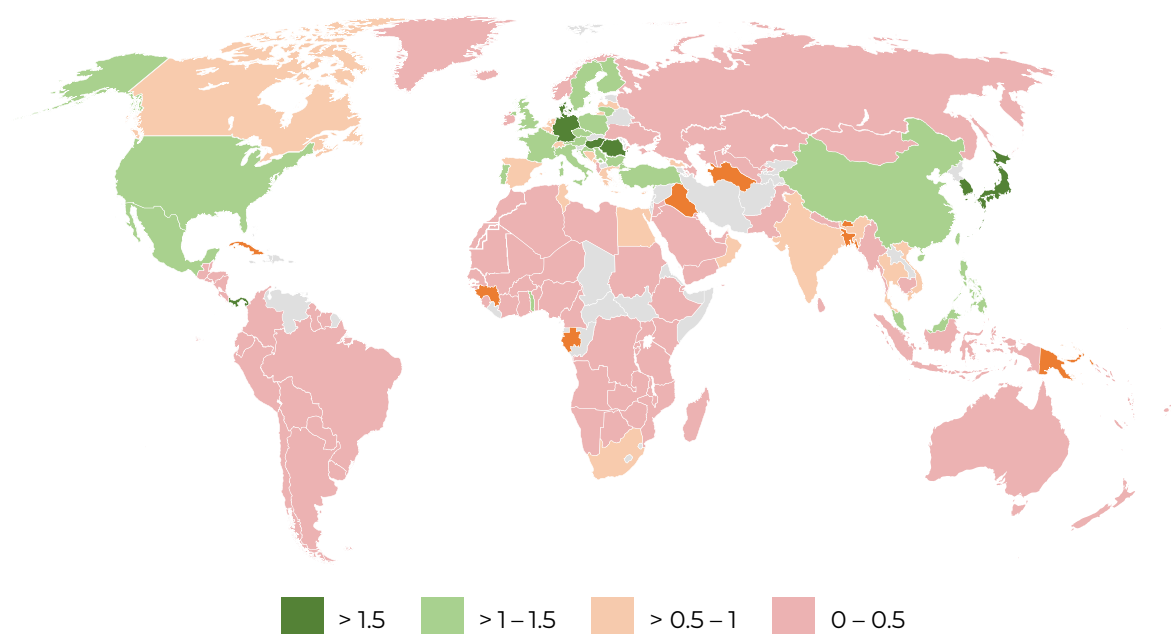
Sustainable industrial policy can also invigorate locally-grounded development and democratic governance. It stands to do this by prioritising endogenous innovation, human needs, and sovereignty over extractive or dependency-based approaches. This is realised through an emphasis on inclusion and accountability in policy design and implementation.⁴⁶ Furthermore, public participation and democratic accountability — far from encumbering transformative development agendas — have been shown to add speed and efficiency to their implementation, including in infrastructure development and regulatory reform.⁴⁷

In sum, when put into practice, targeting deep economic transformation, sustainable industrial policy tackles multiple, interconnected problems at once, promoting diversified economic structures, while ensuring productive systems respect both planetary boundaries and social foundations.

3. International constraints on sustainable industrial policy

Most sustainable industrial policies implemented to date have been in the Global North. This has concentrated sustainable industries within just a few countries. As Figure 1 shows, the distribution of low-carbon technology products and environmental goods is highly concentrated. If the transition to a low carbon economy enables high-value sustainable industrialised prospects for already-industrialised nations, while renewing the limited role of most developing countries as sources of raw materials, economic disparities within and across countries will be reinforced. This would undermine the central promise of the UN sustainable development goals — to leave no one behind.

Figure 1. Revealed comparative advantage in low carbon technology products and environmental goods (2019-2021)



Source: Lebdioui (2024),⁴⁸ based on the data from the IMF climate dataset.

The scope and effectiveness of sustainable industrial policy are constrained by international regimes that restrict the policy choices available to countries, especially developing nations.

Global rules, norms, and systems ('international regimes') that govern trade, investment, technology, and finance have systematically narrowed the 'policy space' available to countries for adopting even basic measures to advance sustainable development, particularly in the field of sustainable industrial policy. This section discusses the relationship between international regimes and national policy space, and explores the constraints on sustainable industrial policy created by three regimes in particular: trade and investment; technology and intellectual property; and finance. It also incorporates a complementary table that takes specific policy tools as a starting point, highlighting where these conflict with international regimes.

Recent decades have seen a proliferation of global rules, norms, and systems that govern international trade, investment, and finance. In some cases, these are developed and enforced by international institutions — for example, trade rules under the World Trade Organization (WTO). In other cases, they are simply the product of institutional norms, practices, and interactions — for example, the widespread reliance on narrowly framed risk methodologies in global finance.⁴⁹

Taken together, the proliferation and entrenchment of global rules and norms represent an encroachment on the autonomy and sovereignty of *all* countries. Indeed, countries of all income levels have objected to these constraints in one form or another, including countries who were instrumental in setting many of the rules. Yet, the erosion of policy space is particularly damaging in those countries at earlier stages of industrialisation, where proactive measures to achieve structural transformation and escape from low-value segments of global value chains are most needed. Global rules that favour the rights and interests of incumbent firms and investors, particularly in combination with a structural tendency towards economic concentration, have led to increasing concentration of productive capabilities in a handful of countries and corporations. Although this is most detrimental to developing countries, it is also a threat to global economic resilience, and even to economic prosperity in developed countries.⁵⁰ Reversing this encroachment on policy space, and responding to the exigency of sustainable transformation, requires confronting the specific obstacles that international regimes create for sustainable industrial policy, particularly in the three regimes examined below.

3.1 International trade and investment

WTO rules often explicitly limit the use of core industrial policy instruments, such as subsidies, export incentives, and technology transfer requirements. The limited exemptions sometimes made for Least Developed Countries⁵¹ are not sufficient. Most fossil fuel-dependent economies are still bound by such restrictions, limiting their ability, for example, to redirect energy asset rents into sustainable industries and diversification strategies, while climate-vulnerable countries, populous economies facing employment pressures, and middle-income industrialising countries are not included in such exemptions. Although WTO rules do preserve some policy flexibility in areas that do not affect imports or exports,⁵² WTO jurisprudence tends to adopt a very broad interpretation of ‘affecting trade’.⁵³ Many policies that were not designed to distort trade — such as consumer or environmental protection measures — have come under WTO scrutiny on the grounds that they “modify the conditions of competition”.⁵⁴ Similarly, the expansive interpretation of “national treatment” clauses under WTO agreements have been used to restrict the use of local content requirements and many other industrial policy tools (which, furthermore, are explicitly restricted under the Agreement on Government Procurement, or GPA). Additionally, WTO agreements, such as the Agreement on Safeguards, define the public interest primarily through the frame of fair trade and market efficiency, restricting the use of emergency measures that promote public welfare but are not considered corrective to market competition. Moreover, under WTO law, the concepts of fair trade and market efficiency are applied only within discrete product markets. This product-level segmentation of competition analysis excludes cross-sectoral or systemic dimensions of ‘injury’, severely constraining the scope of measures permitted for structural adjustment and industrial transformation.⁵⁵

WTO+ commitments — normative commitments expressed in free trade agreements (FTAs), bilateral investment treaties and other bi-/plurilateral agreements — often impose stricter constraints on sustainable industrial policy tools than the WTO ‘baseline’, including through prohibitions/limitations on the use of performance requirements, state-owned enterprises, and strategic public procurement as developmental tools.⁵⁶ This ‘deep integration’ agenda narrows policy space.⁵⁷ This is the case not only with regard to border measures, but also deep within the domestic policy domain, eroding the flexibility that states require to align production structures with sustainable development, technological upgrading, and value-chain advancement.⁵⁸

Investor-State Dispute Settlement (ISDS) clauses in trade and investment agreements allow investors to bypass national judicial systems to sue states in international arbitration tribunals (yet do not allow states to sue investors). Under such arbitration, national measures to safeguard public health, raise labour and environmental standards, or shape the energy transition have been portrayed by investors — and interpreted by tribunals — as violations of protections against expropriation, fair and equitable treatment, or full protection and security.⁵⁹ Defending a case can cost millions of dollars in legal fees, and awards can reach billions. Through ‘regulatory chill’, the threat of such losses systematically discourages countries from implementing industrial policies that protect the environment and human wellbeing.⁶⁰ Moreover, ISDS is structurally biased in favour of foreign investors, in both its substantive protections and its procedural mechanism. It grants expansive enforceable rights to foreign investors, while imposing no equivalent obligations upon them.⁶¹ Expected profits are interpreted by ISDS tribunals, and in some cases defined within the legal text, as protected property, while arbitration tribunals tend to favour the investors’ speculative valuation of such profits.⁶² The investor bias of ISDS arises not only from asymmetric capacities in litigating such cases, but also from the structural financial incentives that encourage arbitrators to broaden investor protections and set legal precedents favouring investors.⁶³

3.2 Technology and intellectual property

The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and TRIPS+ intellectual property rules limit access to technologies, technological innovation space, and manufacturing know-how, including in low-carbon and other environmentally sound technologies (ESTs). This constrains the ability of countries to nurture sustainable industries and diversify production. Many FTAs embed expansive intellectual property rules (‘TRIPS+’ provisions) such as extended patent terms and data exclusivity rules. More recently, FTAs have included the protection of trade secrets and digital trade opacity, which prevents public oversight of digital platforms and AI systems. TRIPS+ provisions directly limit even those flexibilities that were expressly built into TRIPS to promote technology transfer, for example through restrictions on compulsory licensing and parallel imports.⁶⁴ Limitations such as these prolong monopoly protection for global corporations, block or delay entry for domestic competitors, and curtail options for promoting local production, all in the context of a multilateral judicial environment that favours intellectual property holders.

Formal restrictions on the use of strategic procurement policy to stimulate technology transfer form part of the WTO Government Procurement Agreement (GPA). Although many

developing countries are not GPA signatories, these restrictions have also been embedded, often in highly asymmetrical ways, in trade agreements such as the United States–Mexico–Canada Agreement (USMCA, formerly NAFTA) and the EU Economic Partnership Agreements.⁶⁵ In this context, rules prohibiting discrimination against foreign bidders have made it difficult to require foreign companies to partner with local actors or to transfer technology as a condition for participating in the procurement market. Similarly, rules prohibiting ‘offsets’ restrict the ability of countries to tie procurement contracts to local licensing of technology, R&D investment, or workforce training.

Multilateral climate agreements have repeatedly failed to deliver on their commitments around technology transfer, despite the recognition that technology diffusion is essential for reaching climate goals. Provisions under UNFCCC rely on market-based mechanisms for technology transfer, while creating no binding obligations for developed countries. The mandate of the Technology Mechanism established at COP16 (2010) in Cancún is limited to information sharing and capacity building, not actual technology transfer,⁶⁶ while the Mechanism’s implementation arm is chronically underfunded, relying almost exclusively on voluntary contributions.⁶⁷ The Technology Transfer Framework established under the Paris Agreement acknowledges the importance of public procurement as a strategic tool to stimulate technology transfer.⁶⁸ Yet, like the Mechanism, it does little to resolve tensions with global rules that restrict such an approach, or other structural barriers that limit the efficacy of market-based mechanisms for technology transfer. This includes barriers related to intellectual property rights regimes; underinvestment in related workforce skills, R&D, and manufacturing capabilities; and systemic risk aversion. The result is that multilateral climate action has largely reinforced a system that protects incumbents, leaving many countries dependent on costly imports of equipment, know-how, and services, in the context of climate transition. This dependency not only raises the cost of climate action but also undermines local innovation, constrains industrial upgrading, and perpetuates structural inequalities.

The detrimental effects of global trade and investment rules have long been noted in the developing world. For many years, researchers and multilateral organisations have catalogued the manifold ways in which they harm sustainable development, industrialisation, and the quality of growth.

The United Nations Economic Commission for Africa, for example, published a report in 2016 that analysed how global rules of trade and investment hinder industrialisation in Africa and beyond. Building on that report, Andreoni et al. (2019) explored how such rules constrain the use of industrial policies that advance the Sustainable Development Goals related to sustained growth and industrialisation. The authors also demonstrated how these rules foster corporate concentration and oligopolistic dynamics.

Drawing on those works, Table 1 offers an overview of common industrial policies and the way in which these are constrained by trade and investment agreements within and beyond the WTO. While the table highlights illustrative examples specific to African countries, similar restrictions apply around the developing world.

Table 1: Impact of global rules on quality of growth proxies for SDGs 8 and 9, with illustrative examples from Africa

Policies to achieve quality of growth proxies SDG8 and SDG9	Global rules that affect policies
1. Performance requirements (including technology transfer)	The WTO's TRIMS Agreement constrains local content requirements, but not conditions for joint venture and transfer of technology. The activities covered by the GATS-Mode 3 (services delivered through commercial presence) are subject to fewer restrictions than those covered by the TRIMS. WTO+ agreements, however, increase restrictions on performance requirements. For example, U.S. Bilateral Investment Treaties strictly prohibit all performance requirements; signatories in Africa include, for example, Cameroon, Congo, DRC, Mozambique, Rwanda, and Senegal.
2. Procurement	The WTO Agreement on Government Procurement restricts the use of procurement policy for industrial development, but most developing countries are not signatories. However, some WTO+ trade and investment agreements also include similar restrictions. For example, the EU economic partnership agreements (EU-EPAs) categorically prohibit many procurement measures. Cameroon, Côte d'Ivoire, Mauritius, Seychelles, and Zimbabwe are among the African countries that have in force EU-EPAs or are working towards them.
3. Targeted investments in infrastructure, training, education, research and development (R&D)	Not directly affected by WTO or WTO+ agreements.
4. Coordinated investments and government-mediated mergers	Not directly affected by WTO or WTO+ agreements.
5. Subsidies for key industrial sectors	The WTO's Agreement on Subsidies and Countervailing Measures considers subsidies to be trade distorting measures and prohibits any sector specific subsidies, as well as those for export promotion and for enforcing the use of local content in manufacturing. It also prohibits indirect subsidies through intra-private sector transfers brought about by government regulation. In practice, however, subsidies can be used until they are challenged or countervailed. Subsidies for R&D, regional balances, and environmentally friendly technologies are "actionable" but have seldom been disputed, in part because developed countries often use them. Least developed countries are permitted to use export subsidies under certain conditions, but are not exempted from countervailing measures from trading partners.

Policies to achieve quality of growth proxies SDG8 and SDG9	Global rules that affect policies
5. Creation of stateowned enterprises (SOEs)	The use of SOEs is not directly affected by WTO agreements. However, tariff cuts in the General Agreement on Tariffs and Trade (GATT) and market access and national treatment requirements in the General Agreement on the Trade of Services (GATS)—Mode 3 (commercial presence)—can be fatal for SOEs, limiting the potential to use them as industrial policy tools (e.g., a stateowned telecom company buying from local handset makers) or to supply services to locally owned industries at a subsidised rate (e.g., stateowned electricity companies giving concessional rates to designated industries or “industrial zones”). Service sector commitments apply only to the sectors that countries agree to include, but developing countries are being pressured to expand and deepen their commitments in the Doha Round of WTO negotiations. WTO+ agreements are effectively used to achieve these aims despite the stagnation of the WTO's Doha Round of negotiation.
6. Infant industry protections	WTO member countries are all required to bind at least some of their tariffs at an upper limit. In the Doha Round of Non-Agricultural Market Access negotiations, industrial countries are pushing for all unbound tariffs to be bound and substantially reduced. The GATT (Art. XVIII) allows developing countries with low standards of living to temporarily raise tariffs to promote the establishment of a particular industry, but this requires difficult negotiations, approval of WTO members, and compensation through other tariff reductions. Furthermore, the time frame allowed (eight years) is very short relative to historically effective time frames for infant-industry protections. ⁶⁹
7. Capital controls and capital outflow taxes	Under the GATS and Trade-Related Investment Measures (TRIMS) regulations, restrictions on capital controls exist, but violations of the rules can be challenged in a dispute only if a member country initiates state-state arbitration. WTO+ agreements are much more restrictive. U.S. Bilateral Investment Treaties, for example, require that U.S. firms be allowed to freely transfer payments in and out of host countries without delay.
8. Government allocation of foreign exchange	Not directly affected by WTO or WTO+ agreements (or IMF)

Source: Adapted from Andreoni et al., 2019⁷⁰ and Chang et al., 2016⁷¹

3.3 Finance

Financing costs — notably, sovereign debt yields, which determine the minimum interest rate for all borrowing in the national currency — are systematically biased against African and other emerging markets and developing economies (EMDEs), despite strong growth fundamentals in many cases. The high cost of capital severely constrains both public and private investment in energy and industrial transition, by reducing the financial viability of projects.⁷² High borrowing costs raise the return threshold that determines a project's viability, while higher debt service

costs reduce the capacity to shoulder risks over the financing term. In Sub-Saharan Africa, for instance, the average cost of capital for renewable energy can reach 15–20%, which is 3–4 times higher than in advanced economies.⁷³ This leads to distortions and lock-in into carbon-intensive economic pathways, while constraining the ability of African countries to seize some of the green windows of opportunities.⁷⁴ This is well illustrated by the fact that in 2021, which had been a record year for global renewable energy investment, renewable energy investment per capita was below \$1 in sub-Saharan Africa, and over \$100 in the USA, Canada, Japan, China, and the EU. Exposure to physical climate risks is itself a factor in high capital costs,⁷⁵ illustrating the distortion inherent in a global financial architecture that directs capital away from where it is most urgently needed, further reinforcing underdevelopment and dependency for many countries.⁷⁶

Flawed risk models and biased credit ratings distort perceptions of sovereign risk, contributing to the pronounced bias in the costs and flows of capital, with devastating effects for EMDEs. Based on an assessment of 16 African countries in 2022, the UN Development Programme estimated, for example, that one level of misalignment in a sovereign credit rating can cost a country a combined \$74 billion in lost investment opportunities and increased interest payments.⁷⁷ Credit ratings methodologies include gross domestic product (GDP) per capita as a direct determinant of the credit score for sovereign borrowers, with higher GDP per capita contributing to a higher credit rating. A recent study found that, among a range of tested variables, GDP per capita was the most decisive factor in sovereign credit ratings, while the debt-to-GDP ratio was not even statistically significant.⁷⁸ This not only represents an explicit ‘penalisation of poverty’ but also signals that economic growth potential, quality of governance, and expected returns on public investments likely have less influence on credit ratings, and therefore on capital flows and investment, than current levels of income. This damages lower-income countries’ access to finance and development trajectories, but also leads to risk mispricing and inefficient capital allocation for investors.

The Basel Accords — capital, liquidity, and leverage standards set by the Basel Committee on Banking Supervision to guide global banking regulation — disincentivise productive investment and amplify procyclical capital flows in developing economies. The Basel III framework’s risk weightings favor liquid financial instruments over long-term, illiquid loans for infrastructure or industry.⁷⁹ As a result, ‘capital efficiency’ in the banking system is defined at odds with efficient capital allocation in the real economy; that is, investment aligned with strategic and structural objectives, including strengthened external balances, productive capacities, employment, and sustainability. Assets denominated in the currencies of developing countries are also penalised under Basel capital rules. Formal reliance on external credit ratings agencies thus transforms distorted credit ratings from a market convention into a codified bias within prudential regulation itself.⁸⁰ This entrenches structural privilege, hardwires procyclical mechanics in financial flows,⁸¹ and reinforces constraints on productive investment in the economies where it is most needed.⁸²

Financial liberalisation has increased the exposure of EMDEs to capital flight risk and heightened vulnerability to external shocks. Deregulated capital accounts have made national governments more sensitive to global risk perception and investor sentiment. This increases the pressure to align with the expectations of Bretton Woods Institutions and private financial markets around

debt sustainability, with the effect that expansionary and/or countercyclical spending may be avoided to prevent capital flight and contain the cost of capital. Capital account liberalisation has also amplified exchange rate volatility.⁸³ Alongside sovereign credit risk, foreign exchange risk is a key factor shaping country-level risk perception, and thus contributes directly to the high cost of capital in many EMDEs.^{84,85} In sum, the effects of financial liberalisation have reduced states' fiscal space for responding to social and ecological exigencies, with particularly adverse effects on women and girls.⁸⁶

Debt distress has become a norm for many developing countries, simultaneously exposing and reinforcing interlinked fiscal, macroeconomic, and financial vulnerabilities, while deterring investment in sustainable development. Since 2010, the volume of public debt has grown twice as fast in developing economies as in advanced economies. Furthermore, average sovereign borrowing costs between 2020 and 2025 were roughly two times higher in developing Asia, Oceania, Latin America, and the Caribbean than in the USA, for example, and three times higher in Africa. A combination of growing debt loads and high financing costs have led to onerous debt-service costs for many developing countries — exceeding 10% of the fiscal budget in a record 61 countries in 2024.⁸⁷

This debt overhang perpetuates a vicious cycle: rising credit risk premiums drive up borrowing costs, eroding fiscal space, and stifling productive investment, which in turn weakens growth and further undermines debt sustainability. The problem is compounded by procyclical capital flows and exchange-rate pressures, especially for issuers of U.S. dollar or other hard-currency debt. Currency depreciation increases debt-service costs in domestic terms and strains the balance of payments, with knock-on effects across household and enterprise balance sheets.⁸⁸ Sovereign debt restructuring, meanwhile, is hindered by fragmented global governance and asymmetrical creditor power, with no binding international process to ensure timely or equitable resolution. The broader debt regime privileges enforcement over negotiation. As a result, restructurings are reactive and procyclical, prolonging crises and increasing their economic and social costs.⁸⁹

International, regional, and national development banks remain weakly capitalised relative to the scale of investment needs, limiting their ability to provide concessional, long-term, and patient capital. Most multilateral development banks (MDBs) operate under conservative capital adequacy frameworks and AAA credit rating constraints, which cap their lending headroom well below their balance-sheet potential.⁹⁰ National development banks face even greater resource constraints: they typically depend on national budgetary allocations and struggle to access global capital markets, particularly where the sovereign credit rating is low. Multilateral climate funds, such as the Green Climate Fund, are similarly undercapitalised and difficult to access. The result is a chronic shortfall in lending capacity for sustainable development. These institutions, which should be leading providers of affordable finance for sustainable transformation, are instead structurally constrained — leaving EMDEs reliant on more expensive, short-term private finance. Sustainable transformation ultimately depends on public investment that prioritises developmental additionality, captures public value, and leverages public institutions to develop and demonstrate investible project pipelines. Only with these conditions in place can public capital responsibly assume risks that private capital avoids, and deploy fiscal and financial tools that steer private finance towards development.⁹¹

4. Removing the constraints: Priorities for a transformational multilateralism

The constraints on sustainable industrial policy imposed by the international regimes examined above highlight the urgency of embedding a new set of priorities into multilateral institutions, agreements, and norms — priorities that enable, rather than obstruct, sustainable industrial policy and transformative development. As shown in Section 2, sustainable industrial policy has the potential to spur sustainable development; reduce inequality, including gender inequality; strengthen social and economic resilience; address ecological crises of pollution, resource degradation, and biodiversity loss; and drive low-carbon, climate-resilient transformation. Realising this potential requires reasserting its legitimacy as an instrument of sustainable development; reforming restrictive global rules; mobilising legal frameworks and precedents that expand policy space; promoting equitable access to finance; and reimagining multilateralism itself as an engine for national strategies to advance sustainable, productive transformation.

As a foundational step, multilateral institutions must reassert the legitimacy of sustainable industrial policy as a core function and obligation of developmental and democratic governance, particularly in the context of intensifying global risks and shared transformational goals. Restoring narrative and normative space for sustainable industrial policy means recognising that: state measures that shape structures of production and provisioning towards public purpose are both legitimate and necessary; sustainable transformations have the potential to restore social trust within and across borders, as well as equilibrium between humanity and its natural environment, including to address the climate emergency; and making space in international regimes to better allow sustainable industrial policy will not only accelerate progress towards ecological and economic goals, but also reinvigorate the legitimacy of multilateralism,⁹² by elevating its role of enablement alongside discipline. The inclusion of green industrial strategies in the G20 2024 Leaders' Declaration⁹³ and the negotiation of G20 Principles on Sustainable Industrial Policy in 2025,⁹⁴ represent a positive development indicating an emerging consensus that frames climate action as socioeconomic development and recognises the importance of sustainable industrial strategies, momentum that can be consolidated in this year's COP30 and in future G20 workstreams and meetings.

Providing space for sustainable industrialisation policies to flourish means reforming those global rules and norms most restrictive of sustainable industrial policy space and most deleterious to social, environmental, and economic outcomes, particularly for EMDEs. International regimes must be aligned with the recognition of fiscal policy, public procurement and investment, industrial regulation, and macroprudential regulations — including capital flow management — as sovereign domains of sustainable industrial policy. This requires terminating ISDS provisions, especially sunset and arbitration provisions, and revising WTO rules and other

norms shaping trade and investment (WTO+) that restrict the use of these critical policy tools. This could entail, for example, including carve-outs in investment treaties that recognise performance requirements as lawful policy tools. More fundamentally, it means shifting the applicable law governing investor-state relations from open-ended treaty standards towards specific, balanced contractual arrangements. Removing obstacles to sustainable industrial policy also depends on advancing legal norms, together with capable mechanisms, that promote technology diffusion and a more equitable distribution of innovation space. This includes defending traditional knowledge and community innovation from transnational appropriation by patents,⁹⁵ and acknowledging the limitations of market-based technology transfer for strategic and life-critical technologies (as evidenced in the WTO's June 2022 TRIPS Waiver Decision, which loosened compulsory licensing rules and waived Covid-19 vaccine patent protections).⁹⁶

The reform of global rules can be further advanced by drawing on legal frameworks and precedents that counterbalance restrictive norms and safeguard policy space. Obligations under climate treaties, international human rights law, and customary international law (particularly with respect to international cooperation) can be used to strengthen the legal standing of sustainable industrial policy tools that are restricted or discouraged under international trade, investment, technology, monetary, and financial regimes. They can, for example, provide a credible legal basis for defending critical policy instruments when challenged in dispute settlement fora. While WTO panels and ISDS tribunals have been reluctant to fully embrace such arguments, there are precedents that signal the possibility of advancing legal interpretations that better integrate state obligations under different domains of international law, such as the *Urbaser v Argentina* dispute.⁹⁷ In particular, international climate-related and human rights obligations can be invoked as context for the interpretation of trade or investment treaties, as stipulated in the Vienna Convention on the Law of Treaties.⁹⁸ Advisory opinions or judgements issued by international courts that add clarity and specificity to such obligations are especially helpful in this context, as they can be cited as 'persuasive authority' in dispute settlement processes. Examples include the recent advisory opinion issued by the ICJ, described above, as well as the 2017 opinion from the Inter-American Court of Human Rights, which held that states must not interpret trade or investment agreements in ways that undermine human rights or environmental obligations.⁹⁹

In addition to lifting formal constraints, it is essential to expand the substantive space for action by addressing informal or de facto barriers that undermine countries' ability to implement sustainable industrial policy, particularly as regards financial access. These include the 'penalisation of poverty' in sovereign credit ratings, procyclical capital flows, and vulnerability to shocks, and the reliance on debt sustainability frameworks that prioritise short-term liquidity considerations over long-term structural determinants of debt sustainability, ignoring the economic, social, ecological, and fiscal returns of public investment.¹⁰⁰ Addressing these de facto barriers requires technical enhancements to both public and private financial tools and infrastructure,¹⁰¹ as well as a broader rebalancing of influence within international financial institutions, accounting for the growing economic and political influence of the industrialising world. It also means strengthening multilateral and national development finance institutions and climate funds through stronger capitalisation, capital adequacy framework reforms, innovation in governance and operational models, and streamlined processes for accessing finance, with the goal of lowering the cost of capital and increasing financial flows for sustainable transformation.¹⁰²

Lifting these informal constraints also means shifting the focus of International Monetary Fund activities away from deficits and austerity. The IMF should take better account of long-term development investment needs (and returns) and re-envision its liquidity-focused programmes as responses to those needs. For example, this could be achieved through assisting countries to align sovereign debt term structures with investment terms, and build capacity in credit risk management.¹⁰³ Special Drawing Rights (SDRs), issued by the IMF as a global reserve asset (akin to a ‘fiat gold’), have conventionally been used to ease global liquidity shortages and balance-of-payments pressures. Recent innovations, however, highlight their underutilised potential as a tool for scaling development and climate finance. For example, the IMF’s Resilience and Sustainability Trust, established in 2022, ‘re-channels’ SDR loans from high-income members to provide long-term, low-interest, policy-based financing for vulnerable economies undertaking structural reforms.¹⁰⁴ In 2024, the IMF Executive Board approved the use of SDRs for acquiring hybrid capital instruments, enabling them to function as capital rather than as liquidity for designated institutions, including many MDBs.¹⁰⁵ These innovations should be seen as prototypes for a more ambitious reconfiguration of the global reserve system — one that expands the developmental use of SDRs, including by increasing their scale, diversifying intermediaries, and strengthening linkages between SDR allocation and global public investment goals.¹⁰⁶ Such reforms should be complemented by mechanisms to manage currency risk in international climate and development finance, reduce the risk burden on local borrowers, and unlock financial flows from risk-averse institutions, including MDBs and climate funds.¹⁰⁷

Ultimately, this means reimagining multilateralism as a platform to enable, rather than constrain, sustainable industrial policy. Reimagining multilateralism means reorienting the international trade, investment, finance, and intellectual property regimes to empower countries to pursue development trajectories that reflect national and regional priorities and are rooted in shared benefit, rather than protectionism. This includes advancing broad-based reforms to existing institutions, as discussed above, but it also means creating opportunities for institutional innovation. Mechanisms for technology sharing can accelerate both technological diffusion and progress in global goals, while supporting local industrial development and ecological resilience. Such a ‘Global Technology Commons’ could operationalise new and existing global licensing pools and patent buyouts, waivers of intellectual property rules, and open-source models for ESTs, making them accessible as global public goods.¹⁰⁸ Similarly, a global public investment facility, founded on the principle of capacity-based contribution and need-based distribution, could help to rectify the asymmetries of finance, technology, and infrastructure that private markets entrench rather than resolve — particularly in climate change adaptation, which has to date received far less attention and investment than climate change mitigation. Positioning technology sharing and investment platforms as formal alignment mechanisms among distinct regimes — for example, by linking UNFCCC, World Intellectual Property Organization, WTO, and the World Bank — could diversify their levers of action and strengthen their systemic impact. Additionally, a mechanism for peer learning and cooperation — for documenting and exchanging national experiences, developing best-practice guidelines, and accessing technical assistance and capacity building — could support country-level sustainable industrial policy frameworks, as reforms in key regimes begin to open space for policy innovation. Such a platform would also contribute to cross-border knowledge exchange, coordination, and supply chain development¹⁰⁹ — and with these, trust, solidarity, and dignity among peoples.¹¹⁰

Where multilateral structures cannot reach agreement and remain unable to act, overlapping coalitions focused on specific goals could step in to bridge critical gaps.¹¹¹ Regional procurement, production, and investment clubs, for example, could build collective leverage and strengthen coordination, raising standards for labour, the environment, and fiscal governance in the process.¹¹² Among countries linked by geography, shared vulnerabilities, or complementary strengths, joint efforts on infrastructure, technology, and institutional capacity among countries could lay the foundations for climate resilience. Transboundary, bioregional approaches that restore reciprocity between the economy and the living environment, while respecting local knowledge and institutions, could anchor cooperation in the social and ecological foundations of economic development. The Sevilla Platform for Action, the Baku-to-Belém Roadmap, and other global projects are uncovering promising formats of international (and multi-stakeholder) collaboration.¹¹³ Indeed, there are opportunities for solidarity at every level and scale.

The breakdown in the global trade consensus and increasing political instability have created a moment that should be understood not as a crisis of multilateralism, but as an opportunity to reimagine its purpose and practice — and recommit to shared values.¹¹⁴ Rather than reinforcing global rules and institutions that constrain development choices, the international community can use this juncture to advance new legal norms, cooperative mechanisms, and financial architectures that expand policy space and collaborative potential for driving sustainable, equitable, and productive transformation. We stand at an inflection point. Our present challenge is to shape the trajectory beyond it — by placing social inclusion, ecological integrity, industrial development, and economic resilience at the centre not only of national policy, but also global governance.

Appendix A: Taxonomy of industrial policy and planning tools

Table 2: Taxonomy of commonly-used industrial policies and planning tools

CARROTS <i>Policies that support desired productive activities and practices</i>	1. Public investments in strategic industries and infrastructure through: a. Grants b. Loans: preferential loans, forgivable loans, and loan guarantees c. Public banks to make strategic loans and to coordinate investment d. Public enterprises to produce strategic necessities better suited to public sector management e. Public equity stakes in private or worker-owned enterprises f. Public venture capital with fair risk and return sharing g. Public-private partnerships with private or worker-owned companies h. Tax credits or direct payments for producers and consumers i. Targeted government procurement (for example, using standards that give preference to sustainable products, local content, or fair labour practices) j. Advance market commitments and strategic stockpiling or buffer stocks of critical goods such as food. k. Targeted private procurement for publicly-supported projects: requirements for recipients of public money to give procurement preference to sustainable products, local content, or fair labour practices l. Investments in human capital and workforce development supportive of investments in target industries (education, training, apprenticeships) m. Investments in innovation: research, development, deployment, and demonstration n. Investments in human capital and workforce development supportive of target industries (education, training, apprenticeships) o. Quality infrastructure policy (standards, certification, laboratories) Note: These “carrots” can also come with their own “sticks” attached in the form of conditionalities.
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STICKS <i>Policies that curb undesired productive activities and practices</i>	1. Taxation of undesirable productive activities and practices 2. Performance standards for producers at the industry or product level (for example, pollution caps, reduction targets, transparency requirements, technology adoption standards) 3. Trade and investment regulations (for example, tariffs, carbon border adjustments, pollution dumping fees, performance requirements) 4. Financial sector regulation, such as differentiated interest rates to raise the cost of borrowing for polluting activities or decrease the cost of borrowing for sustainable activities 5. Labour regulations such as minimum wage, health and safety protections, protections for rights to organise 6. Corporate governance regulation to promote more equitable power-sharing and accountability 7. Antitrust regulation to prevent or discipline concentrated economic power 8. Nationalisation, acquisition of public equity stakes, and public management of critical industries currently being mismanaged by the private sector 9. Enforcement and litigation to ensure compliance with pollution and other standards
ENABLING INSTITUTIONS <i>Institutions that support implementation and coherence</i>	1. Planning bodies responsible for industrial strategy (prospective research, vision building, mission setting, targeting of investments, monitoring, evaluation, stakeholder engagement, and accountability) 2. Coordination bodies to ensure coherence across agencies and levels of government

Source: Estevez, Chang, and Schollmeyer, 2025

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We have included a mixture of primary research, secondary studies, policy briefs, and more accessible discussions of the topics at hand, recognising the diverse readership that we hope our report will receive.

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