Expert Views December 2025

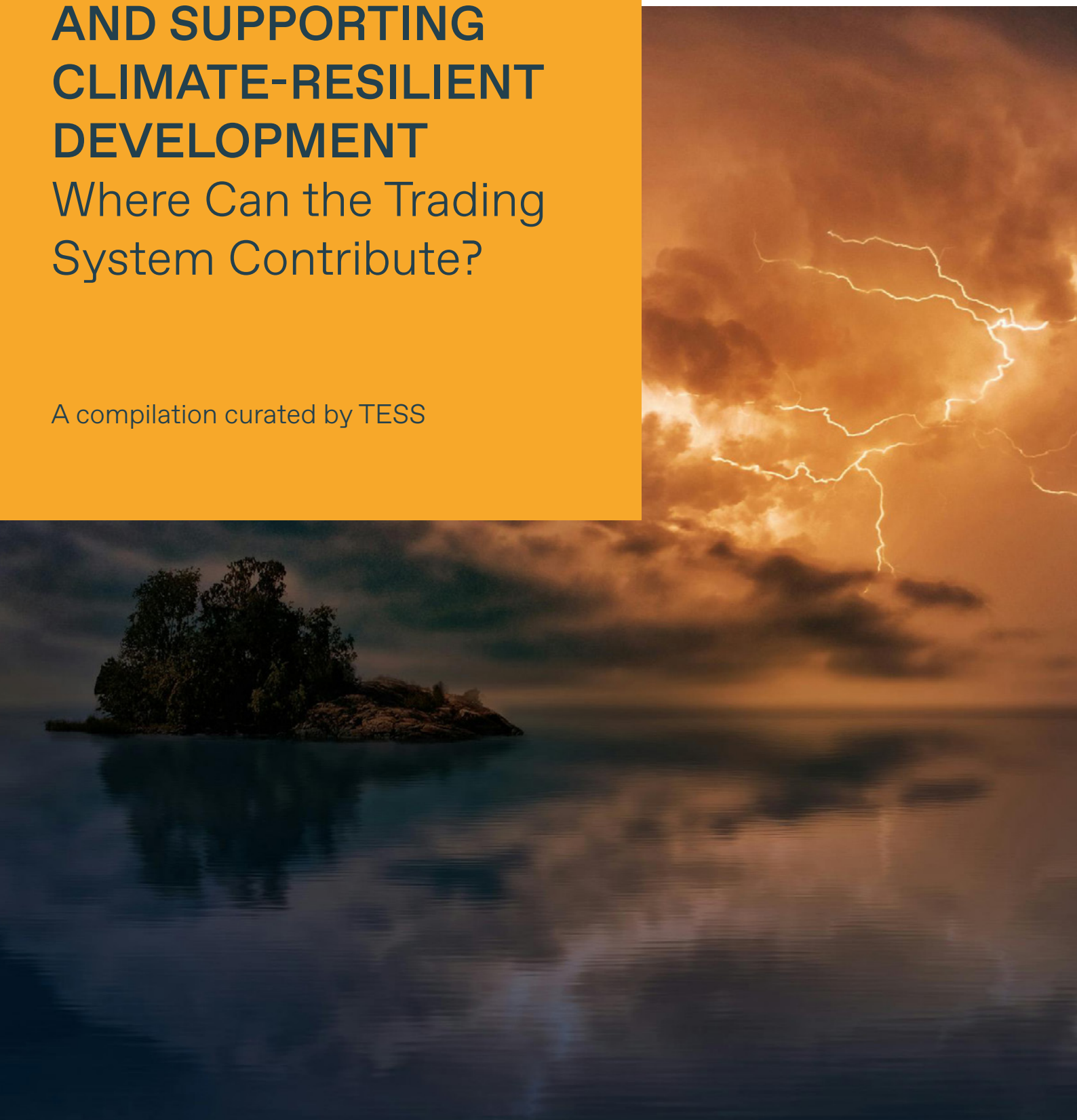
TESS Forum on Trade, Environment, & the SDGs

Synergies

ADDRESSING THE CLIMATE CRISIS AND SUPPORTING CLIMATE-RESILIENT DEVELOPMENT

Where Can the Trading System Contribute?

A compilation curated by TESS



TESS Forum on Trade, Environment, & the SDGs

About TESS

The Forum on Trade, Environment, & the SDGs (TESS) works to support a global trading system that effectively addresses global environmental crises and advances the sustainable development goals. To foster inclusive international cooperation and action on trade and sustainability, our activities seek to catalyse inclusive, evidence-based, and solutions-oriented dialogue and policymaking, connect the dots between policy communities, provide thought leadership on priorities and policy options, and inspire governments and stakeholders to take meaningful action.

About Synergies

Curated by TESS, Synergies is a blog dedicated to promoting inclusive policy dialogue at the intersection of trade, environment, and sustainable development, drawing on perspectives from a range of experts from around the world. Curated for experts and policymakers from different policy communities, Synergies seeks to foster a shared understanding on options to shape a trading system that effectively addresses global environmental crises and advances sustainable development.

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Overview

Recognizing the urgent need to forge collaboration and solutions at the nexus of trade, climate, and sustainable development, TESS commissioned a series of expert views to spur discussion on a proactive, forward-looking, and inclusive agenda on where the trading system can contribute to addressing the climate crisis and supporting climate-resilient development.

As Carolyn Deere Birkbeck and Christophe Bellmann of TESS emphasize in this publication's opening article, there are no credible pathways to tackle the climate crisis without trade policies and cooperation that actively support the objectives of the Paris Agreement and enable countries, especially developing ones, to participate in and benefit from the global transition. Deliberations at this year's UN Climate Change Conference in Belém further served to illustrate the centrality of inclusive trade cooperation for climate action, resilience, and justice.

The articles in this compilation were published online from November 2024 to December 2025 in Synergies, our TESS online platform dedicated to promoting inclusive policy dialogue at the intersection of trade, environment, and sustainable development. The compilation includes 34 contributions authored by a broad diversity of experts from around the world, including from academia, business, civil society organizations, senior current and former government officials, and thought leaders from the climate and trade policy communities.

The experts contributing to the series were invited to address the following questions:

- Where does progress on the global climate agenda most require enhanced trade cooperation?
- Where are the greatest opportunities and priorities for trade cooperation to make a difference?
- What kinds of options and concrete outcomes can be envisaged at the WTO and/or in other fora?
- What is required to make this happen?

In answering these questions, the authors were asked to explore how international trade cooperation can be enhanced to drive urgent action on the Paris climate goals in ways that support climate-resilient development.

Bringing together the range of perspectives that experts provided, this compilation does not claim to be comprehensive of the range of issues, priorities, challenges, and opportunities for cooperation at hand. It is structured around eight themes: pursing cooperation on trade, climate, and sustainable development; managing and reducing climate-trade tensions; bolstering equitable clean energy access and transitions; fostering cooperation on green industrial policies; accelerating decarbonization of key industrial sectors; promoting sustainability and climate goals in agriculture and food systems; advancing climate justice and climate-resilient development; and supporting climate adaptation and just transitions.

This compilation demonstrates that there is a vibrant and diverse community of experts who are committed to finding pathways for effective inclusive international cooperation on climate and trade. We see it as one instalment in an ongoing effort with partners to build and sustain momentum on positive agendas for international cooperation on a range of critical issues at the nexus of trade, climate, and sustainable development. TESS is committed to providing visibility to a range of perspectives and expert views from around the world.

We hope that these efforts will help translate into action the vision of an international trading system that effectively addresses the climate crisis and advances climate-resilient development.

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Pursuing Cooperation on Trade, Climate, and Sustainable Development

Towards a Global Cooperation Agenda on Trade, Climate, and Sustainable Development

Christophe Bellmann & Carolyn Deere Birkbeck

Over the coming years, a top task for governments and stakeholders will be to forge a global cooperation agenda on trade, climate, and sustainable development. This article outlines the contours of a seven-part agenda. Importantly, advancing such cooperation will require connecting the dots between climate and trade processes at the international level along with investment in integrated policymaking processes nationally and regionally, ensuring that approaches to climate and trade are grounded in sustainable development and equity considerations.

Discussions over recent years on the trade, climate, and sustainable development nexus have highlighted the extraordinary complexity of the issues at hand as well as the many perspectives and concerns that need to be reconciled. Yet growing consensus is emerging around a simple fact: there are no credible pathways to tackle the climate crisis without trade and trade policies aligned with the Paris Agreement objectives. Critically, not only is such alignment an essential component of any global strategy to reduce greenhouse emissions, adapt to climate change, and foster climate-resilient development to be effective and just, it will require inclusive international cooperation.

There are no credible pathways to tackle the climate crisis without trade and trade policies aligned with the Paris Agreement objectives.

At a time of growing tensions on a range of trade and trade-related measures with climate objectives, there is mounting recognition that a patchwork of uncoordinated initiatives is generating challenges of transparency, effectiveness, and equity, while generating avoidable costs for business. Amidst clear evidence that some trade flows and policies are directly contributing to rising greenhouse gas emissions, there are a range of proposals for how trade cooperation can make a positive contribution to the global climate agenda, from calls to harness trade disciplines to reform environmentally harmful subsidies that slow the transition to net zero to proposals for facilitating development, diffusion, access, uptake, and rapid scaling up of technologies, goods, and services vital for decarbonization, climate adaptation, and resilience.

As governments meet at the 2025 UN Climate Change Conference (COP30), this is a timely moment to reflect on what a comprehensive and strategic approach to cooperation on trade, climate, and sustainable development could look like, and crucially, how to shape a cooperative agenda that is inclusive. In so doing, a critical task is to focus on approaches to climate action that generate economic opportunities and prosperity, while responding to the socio-economic vulnerabilities and structural handicaps of developing countries, and avoiding unfair adjustment burdens or marginalizing them in the transition process.

Given the multidimensional nature of the challenges at hand, addressing the nexus of climate, trade, and sustainable development will require connecting the dots between multiple international processes and breaking traditional silos prevailing in the international arena.

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An Agenda for Inclusive Cooperation

Over the coming years, the contours of a global cooperation agenda on trade, climate, and sustainable development could be articulated around the following set of key priorities.

(i) Managing and Reducing Climate-Trade Tensions

The array of trade-related policies governments are implementing or considering to achieve their climate goals range from border carbon adjustment measures, climate standards, and due diligence requirements through to green industrial policies and strategies to secure access to critical minerals. The fragmented nature of the growing number of domestic trade-climate measures, combined with their potential effects on trade and development, has resulted in competitiveness tensions among trading partners and significant compliance costs for businesses. Developing countries, in particular, fear that these measures could further marginalize them and affect their participation in international supply chains; highlighting the need for approaches that are fair and reflect wider, long-standing development priorities.

As these tensions threaten progress on both climate and development, a foremost challenge for international cooperation is to reduce fragmentation and differences in approaches. While harmonizing existing trade-climate measures at the global level is unlikely to occur, there is mounting recognition that international cooperation in this area is needed to foster coherence in the development of such measures, enhance transparency, and promote interoperability, mutual recognition, or equivalences among different policy approaches and processes while at the same time taking into account development considerations.

(ii) Bolstering Clean Energy Access and Transition

The transition to a net-zero emission global economy will rely heavily on resilient supply chains for critical minerals such as lithium, cobalt, nickel, manganese, and graphite as well as rare earth elements, which are essential to manufacture batteries, wind turbines, solar panels, electric vehicles, and other technologies vital for the clean energy transition. Yet, competing demands on critical minerals and the risk of supply chain disruptions are increasingly generating concerns among businesses engaged in the clean energy sector, as well as stakeholders concerned about tensions slowing climate action. While a number of large resource-dependent economies are deploying a variety of approaches to "secure" reliable critical mineral supplies as part of both competitiveness and economic security strategies, resource-rich developing countries are focused on implementing trade-related strategies that promote value addition, economic diversification, and green industrialization. Cooperative arrangements will be essential to ensure resilient supply chains while maximizing benefits for resource-rich developing countries and promoting sustainable development opportunities.

(iii) Fostering Cooperation on Green Industrial Policies

There is broad recognition that public interventions will be required to accelerate the clean energy transition while contributing to climate-resilient development. Here, there is growing emphasis from a range of governments in harnessing green industrial policies—from subsidies and subsidies reform to measures related to investment, government procurement, and technology. At one end of the spectrum, some argue that market-correcting policies are essential to catalyse and shape private financial flows to address the climate crisis. Alongside, there is broad recognition that achieving net zero will require a shift away from industrial policies that have long supported fossil fuels, such as through fossil fuel subsidy reform. Others fear that some forms of government intervention, such as green subsidies, may generate negative economic externalities, including unfair and undue impacts on the competitiveness of developing countries without the fiscal space to match such subsidies, and undermine investment and other financial flows toward them. Striking the right balance between the potential benefits of different industrial policy instruments and the varying abilities of governments to use such policies as well as their possible production and trade-distorting effects will require close international cooperation.

(iv) Accelerating Decarbonization of Key Industrial Sectors

A just transition to a low-carbon economy will require massive decarbonization of key industries such as steel, cement, or aluminium, which are heavily traded commodities and generate about one quarter of global carbon emissions. It will also require a shift away from energy systems driven by fossil fuels. In emerging markets and developing countries, the deployment of decarbonization technologies faces several obstacles, including high costs of both technology and capital, policy and financing challenges, as well as complexities around the adaptation of new and existing technologies to specific contexts. Sector specific cooperation on trade-related policies and successful approaches to technology co-development will have to play a critical role in fostering such transformation.

Another critical sector for international trade cooperation is shipping, which plays a key role in today's global interconnected economy, transporting close to 90% of internationally traded goods by sea, and accounting for about 3% of global emissions. The International Maritime Organization has set clear ambitions for the sector's full decarbonization, yet concrete measures—both economic and technical—for delivering on this strategy still need to be agreed and implemented. These are likely to shape the shipping industry for decades and influence global trade patterns, with implications for all countries, but particularly developing and least developed countries and small island developing states. Equitable cooperation that addresses developing country concerns will thus be vital.

(v) Promoting Sustainable Agriculture and Food Systems

Agriculture represents a critical source of food, feed, fuel, and livelihoods. Yet, the current food system fails to deliver food and nutrition security for all. It also accounts for around 30% of greenhouse gas emissions, when considering the combined emissions of agriculture and land use changes, storage, transport, packaging, processing, retail, and consumption. The immense challenge facing the sector is to improve access, availability, and stability of nutritious food while sustaining livelihoods, protecting ecosystems, restoring biodiversity, and reducing emissions. The case for trade cooperation is particularly clear for measures aimed at removing perverse incentives, such as environmentally harmful agricultural subsidies as envisaged under the Kunming-Montreal Global Biodiversity Framework, or fostering trade in environmentally preferable products. In a similar vein, ensuring that environmental regulations, due diligence requirements, standards, or agriculture-related labelling schemes are applied in a way that minimizes trade frictions and takes into account broader sustainable development imperatives has become a growing priority.

(vi) Advancing Climate-Resilient Development

For the majority of developing countries, which account for a small share of global greenhouse gas emissions, the transition to a low-carbon economy is only viable if it contributes at the same time to poverty reduction, structural economic transformation, employment, and other pressing developmental imperatives. In this context, developing countries have called for various forms of cooperation on trade and investment that can support their efforts to build capacity and competitiveness in key green sectors, achieve greater value-addition, such as in processing of raw materials critical to the climate transition, and foster technology co-development, access, transfer, absorption, and adaptation to local conditions. Notably, trade-related cooperation that supports climate-resilient development will need to respond to both mitigation and adaptation priorities, with economic diversification being a vital strategy for resilience-building. In addition, trade cooperation for climate-resilient development will require consideration of intersecting challenges related to finance, investment, and debt, recognizing that for developing countries with limited fiscal space, high debt burdens, and restricted access to private investment, effective financing mechanisms will be vital for just transitions that respond to sustainable development priorities.

(vii) Supporting Climate Adaption

A wide range of developing countries are already suffering from the physical impacts of climate change, both directly through the effects of more frequent extreme weather events and changing sea levels, and indirectly through climate-induced changes in endowments and comparative advantages. Storms, sea surges, floods, prolonged heatwaves, and droughts affect the price, quality, and availability of essential goods and services. In sectors such as fisheries and agriculture, changes in temperature, precipitation, or the prevalence of pests and diseases affect yields, crop productivity, or natural resource endowments. In this context, developing countries have repeatedly highlighted the need for international support measures to address the economic and trade impacts of the climate crisis, and to support resilience of trade infrastructure and producers to recurring climate shocks. Trade cooperation will also have a vital role to play in offsetting climate-induced production shortfalls, ensuring food security, and facilitating the access, diffusion, and uptake of adaptation-related goods, services, and technologies. Finally, trade cooperation can support economic diversification as a key strategy to reduce vulnerability to external shocks.

Taking the Agenda Forward

The seven priorities described above provide the potential building blocks of an agenda for inclusive international cooperation on trade, climate, and sustainable development. Given the cross-cutting and multidimensional nature of the many elements of this agenda, it will be critical to ensure a degree of coordination across the various processes.

Several elements of this agenda can be pursued in existing multilateral fora and processes such as in the WTO or UNFCCC as well as the G20 or specialized UN agencies, such as UN Trade and Development, political initiatives such as the Coalition of Trade Ministers on Climate, or organizations focused on economic cooperation, such as the OECD or UN regional economic commissions.

Finally, a forum such as the Integrated Forum on Climate Change and Trade (IFCCT) proposed by the COP30 Brazilian Presidency could play a critical role in connecting the dots between different processes and acting as a unique bridge between the trade and climate communities focused on constructive dialogue and practical solutions.

Christophe Bellmann *is Head of Policy Analysis and Strategy, TESS.*

Carolyn Deere Birkbeck *is Founder and Executive Director, TESS.*

** This article is partly derived from a policy brief prepared for the T20 South Africa Task Force on Trade and Investment under the sub-theme Advancing the Reform of the Multilateral Trading System.*

For a Just Transition, Trade Cooperation Should Focus on Areas of Highest Impact for Both Climate and Development

Amina Mohamed

The intersection of trade and climate is no longer a peripheral niche. It is the new frontier of our global economic system—a frontier fraught with risks, but abundant with opportunity.

The intersection of trade, climate, and sustainable development sits at the very nexus of our collective future. The climate crisis is no longer a distant threat; it is a present reality, reshaping economies, disrupting supply chains, and testing the resilience of nations.

This urgency is the very drumbeat of our time. For many, especially on the African continent, this is not a future scenario but a lived reality of drought-stricken farmlands, climate-displaced communities, and immense pressure on economies that did the least to cause this crisis.

At the core of this urgent and essential discussion lies a fundamental truth: trade is not peripheral to the climate fight. It is central. Trade rules shape the global flows of the very goods that will power the green transition. These rules govern the exchange of clean technologies, the distribution of critical minerals and the resilience of our food systems.

At the core of this urgent discussion lies a fundamental truth: trade is not peripheral to the climate fight. It is central.

The questions that remain are: Who bears the adjustment costs? Who captures the value? And, how can small, vulnerable economies participate? The following three guiding questions can help untangle these critical concerns in relation to the opportunities and challenges of trade cooperation for climate action, resilience, and justice.

What is Changing in the World of Trade and Environment?

The Policy Landscape is Being Radically Reshaped

We are witnessing a rapid expansion of climate-aligned industrial policies, from massive investments in clean tech and critical minerals to the modernization of national grids. For example, the global race in battery technology and electric vehicle (EV) supply chains is not just about building a single factory—it is also about creating entire ecosystems, where a single policy can trigger a wave of investments in new EV and battery plants across a single country.

Concurrently, we see the growth of product-specific sustainability rules, for example the EU deforestation regulation—which represents a shift from the verification of a product to policing the production process across the supply chain. These are no longer niche standards. They are becoming market gatekeepers, which redefine competitiveness. We have moved from voluntary ecolabels to mandatory and legally enforceable regulations that determine whether a product can even enter a market.

This is just one example of many. Soon, the carbon intensity of a good may be as important as its price and quality in procurement decisions and consumer choice.

Furthermore, the emergence of measures like the EU's Carbon Border Adjustment Mechanism and the rise of "carbon clubs" signal a fundamental shift towards pricing carbon into international trade, creating a new layer of regulatory complexity.

Institutional Cooperation is Evolving in Response

Looking at institutional evolution, the African Continental Free Trade Area (AfCFTA) provides a powerful illustration of how deeper regional integration is proactively shaping a sustainable future. Work is advancing on the AfCFTA Protocol on Women and Youth in Trade, deliberately ensuring the green economy is inclusive from the start. Furthermore, there is active and strategic work—what we might call the development of "AfCFTA Green Rules of Origin"—focused on designing our origin criteria to actively promote regional value chains in sustainable sectors, such as solar energy and battery assembly. To this point, we can think of an example of ongoing discussions in the context of the African Union calling for leveraging trade for a green and sustainable recovery. These initiatives are welcome because they create the political mandate necessary for innovative ideas, such as the African Green Stimulus Programme. This is not passive integration; it is a conscious effort to use our trade rules to ensure Africa participates as a producer and innovator, not just a consumer, in the green global economy.

> The African Continental Free Trade Area provides a powerful illustration of how deeper regional integration is proactively shaping a sustainable future.

Moreover, the increase in plurilateral initiatives on green goods, standards and supply chains demonstrates a move away from a one-size fits all approach. There are several examples to think about here: for instance the Agreement on Climate Change, Trade and Sustainability. Such arrangements, which respond to specific trade and climate concerns, are welcome.

However, while we champion this plurilateral innovation, we must be equally clear that it complements rather than replaces our multilateral imperatives. Certain challenges, by their very nature, demand universal participation. The World Trade Organization (WTO) fisheries subsidies negotiations are a prime example. Finalizing a comprehensive agreement to curb harmful subsidies that drive overfishing is a quintessential global public good.

A Powerful Climate Justice Lens is Now Central to the Debate

There is now heightened and quite justifiable attention on the distributional impacts of these shifts. We are now acutely aware of the risks for MSMEs, least developed countries, and small, vulnerable economies—from the erosion of trade preferences as economies decarbonize to the high cost of complying with new due diligence expectations on supply chains. The conversation is no longer only about environmental efficiency. It is also, and importantly, about who benefits, and who is left behind. All our solutions should be designed with equity at their core.

> The conversation is no longer only about environmental efficiency. It is also, and importantly, about who benefits, and who is left behind.

Where are the Core Capital and Technical Opportunities, and Which Challenges Must We Overcome?

As we map this new territory, we must recognize a fundamental truth: opportunity and challenge are two sides of the same coin. The vast promise of the green transition is inseparably linked to stark pitfalls that we must overcome.

To begin with the opportunities which are present, these are multiple. Firstly, we can achieve immediate impact by focusing on interoperable standards and conformity assessment. Promoting mutual recognition agreements would dramatically cut compliance costs, especially for MSMEs, and accelerate the diffusion of green technologies.

Secondly, we can save lives and livelihoods by leveraging trade facilitation for adaptation goods. This is where trade rules can have the most immediate impact. Climate change is causing a present-day crisis: crops are failing, floods are displacing our communities, and heatwaves are now claiming lives. Adaptation is no longer about long-term planning, it is about urgent response. We must therefore treat adaptation goods with the same priority and urgency that we afford medical supplies during a pandemic. Expedited customs clearance and applying zero or low tariffs to essential goods are only a few examples which represent a direct investment in resilience.

Lastly, with respect to critical minerals with shared value, trade and investment rules should do more than extract raw materials. They must catalyze responsible investment, diversify processing, and ensure tangible local benefit-sharing.

What are the challenges we must manage?

One is the risk of fragmentation. The very plurilateral and/or bilateral initiatives we welcome can well become exclusionary. We risk a fractured global economy of conflicting standards. The antidote is not to halt these initiatives. Rather, it is to consciously build inclusivity into their DNA right from the start.

The second challenge we face is subsidy races and trade tensions. As we may all be aware by now, well-intentioned policies can escalate into harmful subsidy races if they lack transparency and notification. We have witnessed how local content requirements can create new conflicts, and further, the global scramble to dominate the

industries of the future. "Green" subsidies must therefore be managed wisely, and this primarily requires enhanced transparency and notification at the WTO. Let us encourage green subsidy peer reviews so that we promote best practices and ensure our collective ambition accelerates, and does not fracture, the global transition.

What Should We Prioritize and How Are We to Move Forward?

To ensure a truly just transition, our priorities should be focused on areas where cooperation yields the highest impact for both climate and development:

1. We must champion transparent and development-compatible measures, which pay due regard to the core principle of common but differentiated responsibilities and respective capabilities.
2. We must build interoperability and trust by driving mutual recognition agreements on conformity assessment and harmonizing carbon accounting methodologies.
3. We must elevate the adaptation agenda from rhetoric to reality. Climate justice demands that we treat adaptation with the same urgency as mitigation.

To conclude, the message is clear: the intersection of trade and climate is no longer a peripheral niche. It is the new frontier of our global economic system—a frontier fraught with risks, but abundant with opportunity.

We have a choice before us. We can allow this transition to be driven by fragmentation and a narrow scramble for competitive advantage, which will inevitably lead to greater inequality and instability. Or, we can choose the path of conscious cooperation, to build a system that is inclusive, equitable, and effective.

We can choose the path of conscious cooperation, to build a system that is inclusive, equitable, and effective.

This means writing trade rules that compress our climate timelines, not elongate them. It means ensuring that the burdens of adjustment are shared fairly, and the opportunities of the green economy are open to all: from the largest economies to the smallest, most vulnerable nations.

This work is not just about trade and environment. It is about peace, prosperity, and justice in a world being reshaped before our eyes. We are, quite literally, trading into our common future.

Let us ensure it is a future we can all be proud to share.

Ambassador Amina Mohamed *is Chairperson of the Trade Negotiations & Investment Forum (TNIF).*

** This article is derived from a presentation at a panel on Opportunities, challenges, and pathways for enhanced cooperation on trade, climate, and sustainable development at the TESS TCSD Conference 2025.*

Trade Cooperation Pathways for Climate Action, Resilience, and Justice

Arunabha Ghosh

As global trade intersects more deeply with climate policy, the focus must shift to building inclusive, transparent, and science-based frameworks to forge effective and equitable climate solutions across borders

Emissions embedded in international trade account for 20–30% of global greenhouse gas emissions, underscoring the pivotal intersection between trade policy and climate action. Integrating trade into nationally determined contributions (NDCs) can accelerate climate ambition. However, most developing economies—characterized by a high share of MSMEs, cooperatives, and smallholders— remain underrepresented in national climate plans. Advancing the issue of trade-climate policy alignment in discussions under the United Nations Framework Convention on Climate Change (UNFCCC) will require clear definitions, transparency, differentiation, and international cooperation.

As countries are encouraged to identify climate-strategic trade sectors and governments consider and develop a range of trade-related climate measures—including policy tools such as green value chain development, tariff reductions for low-carbon imports, public procurement incentives, and market-based mechanisms like international carbon markets that can help improve climate action's cost-effectiveness, stimulate private investment, and contribute to financing developing countries' efforts—equity and development concerns must be addressed.

> Ultimately, international trade must be leveraged not only as a driver of low-carbon transformation but also as an instrument for inclusive and just transitions.

UNFCCC discussions propose frameworks such as notification-and-consultation mechanisms, a "traffic-light" system to assess the fairness of response measures, and impact assessments to ensure developing economies are not disproportionately affected.

Ultimately, international trade must be leveraged not only as a driver of low-carbon transformation but also as an instrument for inclusive and just transitions, integrating MSMEs, smallholders, and vulnerable economies into sustainable global value chains.

Allying Trade and Climate Through Cooperation, Standards, and Equity

A Joint WTO–UNFCCC Dialogue

The 2023 UN Climate Change Conference (COP28) marked a turning point in integrating trade into climate discussions, including through providing platforms such as the Trade House Pavilion and with initiatives like the World Trade Organization's (WTO) Trade Policy Tools for Climate Action, joint WTO–IRENA report on trade's role in green hydrogen market development, and global alliances for decarbonizing trade. Additionally, a shared set of Steel Standards Principles was introduced to standardize the measurement of greenhouse gas emissions in green steel production. The Climate Club was launched, and the Net-Zero Export Credit Agencies Alliance was established to foster the decarbonization of global trade through public and private funding.

However, tensions have arisen over unilateral trade measures such as the European Union's Carbon Border Adjustment Mechanism (CBAM), which developing countries, particularly the BASIC group (Brazil, South Africa, India, China), have criticized for undermining equity and multilateralism.

If designed well, trade-climate measures can support supply chain diversification, tariff reductions for mitigation technologies, and new investments linked to carbon markets. However, mechanisms like CBAM raise concerns about unilateralism, traceability, and fairness. Trade-related climate action must embed equity, flexibility, and development priorities at its core.

Debate exists on whether the UNFCCC, with its equity-focused principle of common but differentiated responsibilities (CBDR), is better suited than the WTO for addressing unilateral measures such as CBAM. While the WTO has technical expertise, its governance and rules may inadequately account for climate goals and developing country needs. To bridge differing principles of the UNFCCC (CBDR) and the WTO (special and differential treatment), a joint WTO-UNFCCC dialogue could address unilateral measures and establish a cooperative framework balancing climate ambition, trade, and fairness.

Common Technical Backbone for Measuring Embedded Emissions

Accurate and consistent measurement of carbon content in traded goods is essential to avoid fragmented standards and excessive compliance costs. This involves both the emissions embodied in the goods and services that countries trade and the policy choices countries consider in response, including consumption-based accounting, border carbon adjustments (BCAs), and trade agreements with environmental provisions or mutual recognition of carbon pricing.

The OECD's Inclusive Forum on Carbon Mitigation Approaches and the IPCC's guidance on consumption-based inventories—a ready-made starting point that could endorse multilateral dialogues around trade and can provide a good basis for agreeing and debating greenhouse gas mitigation approaches from a technical and policy perspective—offer a foundation for building harmonized technical standards and shared data systems. This can support international coordination, mutual learning, and evidence-based policymaking across diverse carbon mitigation approaches.

Embedding Equity in Border Carbon Adjustments

The proliferation of unilateral BCAs risks creating conflicting rules and high transaction costs, disproportionately affecting exporters, especially MSMEs and small producers in developing countries. Small players in the Global South with limited technical and financial resources could be the worst affected. Such a

scenario could further aggravate trade frictions and geopolitical tensions as evinced by the reactions to the EU's CBAM.

To mitigate inequities and trade frictions, countries imposing BCAs could consider the following options. First, recycling the proceeds from the border tax to affected developing and least developed countries can allay equity and distributional concerns. Second, a BCA-imposing country could provide technical and capacity building support, particularly for MSMEs in the exporting countries from the Global South, to aid them, for example, in their decarbonization efforts and in measuring carbon content. Third, an open and transparent discussion with the exporting countries at the planning stage of a BCA rather than unilateral imposition may help improve its legitimacy and minimize any potential political backlash against it.

Collectively, these steps can advance a fairer, more integrated global trade–climate architecture anchored in multilateral cooperation, common standards, and shared responsibility.

Where Do We Go From Here

To move constructively in this emerging area, it is crucial to establish clear definitions, ensure transparency, and foster international cooperation. This becomes especially important as BCAs grow more relevant, raising concerns around traceability, data classification, and the risk of trade disputes.

Measurement and verification of carbon content in goods is inherently complex. For exporters of complex manufactured products in countries like India where carbon accounting infrastructure is still developing, complying with CBAM requirements, for example, presents significant challenges.

The regulation requires detailed reporting on emissions embedded in goods, including emissions from upstream inputs. For multitiered, global supply chains, this means exporters must gather emissions data from across jurisdictions, often involving numerous intermediate producers. Such data gaps and information access issues are not only practical hurdles but also potential trade barriers.

Experts have pointed out that this level of traceability could pressure exporters to shift from low-cost suppliers to those with more transparent carbon accounting practices, thereby affecting their global competitiveness. Furthermore, CBAM's detailed data disclosure requirements raise security and privacy concerns. Given CBAM's far-reaching implications for climate ambition, trade flows, and geopolitical relations, there is a strong case for diplomatic engagement and cooperation.

> A coordinated approach could help build inclusive, science-based systems that strengthen both climate goals and economic growth, signalling how trade can evolve from a source of contention into a driver of shared low-carbon prosperity.

Amidst the growing bilateral and plurilateral trade relationships worldwide, it is suggested that climate cooperation is poised to redefine economic ties between nations. With countries increasingly focusing on domestic policies to support clean energy transitions and supply chain resilience, green trade encompassing renewable energy, low-carbon manufacturing, and critical minerals is identified as a key area of shared opportunity. It emphasizes the need for aligning carbon accounting standards, harmonizing trade rules for green goods and services, and collectively shaping the emerging global governance of sustainable trade.

By promoting a common framework for green subsidies, carbon measurement, and transparent supply chain practices, partnerships can serve as a model for reconciling trade competitiveness with climate ambition. Without such cooperation, fragmented standards and unilateral border measures could intensify trade frictions and marginalize developing country interests. Conversely, a coordinated approach could help build inclusive, science-based systems that strengthen both climate goals and economic growth, signalling how trade can evolve from a source of contention into a driver of shared low-carbon prosperity.

As global trade intersects more deeply with climate policy, the focus must shift to building inclusive, transparent, and science-based frameworks not only to protect national interests, but to forge effective and equitable climate solutions across borders.

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** This article is derived from a presentation at a panel on Opportunities, challenges, and pathways for enhanced cooperation on trade, climate, and sustainable development at the TESS TCSD Conference 2025. Views are personal.*

COP30: An Integrated Vision for Climate Change and Trade

André Aranha Corrêa do Lago

This speech was delivered by Ambassador André Aranha Corrêa do Lago, President-Designate of COP30, at the World Trade Organization's Public Forum on 17 September 2025, where he announced Belém's flagship initiative on climate change and trade.

As I join you at the WTO Public Forum, I am told this is the first time a COP President-Designate visits the Organization.

I believe our reunion is timely. As the Indian poet puts it, "depth of friendship does not depend on length of acquaintance." I come to affirm the trade community as a partner in humanity's mutirão against climate change.

I am also pleased to give this partnership its first platform: the Integrated Forum on Climate Change and Trade, a flagship initiative from our COP30 Action Agenda. It's built on the simple case that trade matters for the transition to a more sustainable, prosperous, and inclusive economy.

Belém's trade priority is to see past our differences and act on what we share.

Trade is a transmission mechanism. It carries solutions and knowledge across borders. It drives down costs by enabling economies of scale. In the last fifteen years, the cost of solar power fell by ninety percent; onshore wind is now two thirds cheaper than fossil fuels. This progress was made possible by supply chains that reach across oceans and continents, that connect people and projects and their diverse strengths and needs. UNCTAD valued trade in so-called "green goods" at 1.9 trillion dollars in 2022. The IEA notes that clean-tech markets alone could triple in value to over $2 trillion within a decade.

Trade is also a lever for turning climate ambition into action. With finance and technology as both critical enablers and critical constraints of climate action, trade can bring in the resources countries need. It can make projects bankable by securing revenue flows. It can distribute the opportunities of the transition widely and fairly, so that they reach the many and not just the few.

Systemic gains such as these are built on a foundation of collaboration. With the COP30 Action Agenda guided by the outcomes of the first global stocktake, we will fulfill its call for cooperation across the international economic system. Belém's trade priority is to see past our differences and act on what we share.

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The Integrated Forum on Climate Change and Trade will be a carefully constructed architecture enabling our delegates to explore untried solutions and approaches. This means facing the difficult questions: how do we build a fair and common framework for dealing with emissions in trade? How do we ensure that policies with hybrid dimensions lead to proportionate policy outcomes? How do we define the climate value of a specific good or service? How do we address the growing challenge of the ever-expanding global digital economy? Answering these questions requires collective intelligence and cross-cutting expertise.

The reunion we are having today will itself be a feature of this exercise. Climate and trade have been discussed in silos for too long. The challenges we face do not fit neatly within the boundaries of a single knowledge domain. "*Power*," Hannah Arendt reminded us, "*corresponds to the human ability not just to act but to act in concert*." To accomplish this, we will seat climate and trade experts side by side, with a mixed mandate and a hybrid thematic scope. Only together we will find the solutions to move us closer in both regimes.

Let me be clear about our purpose. The Forum's mandate is not to produce binding outcomes or legal text. Its value will be measured differently: in the quality of the ideas it generates and in the trust it fosters. We are insulating this process from the calculus of concessions and gains, so that we can focus entirely on the calculus of what is possible and necessary.

This is why we have designed the Forum to be institutionally distinct from both the WTO and the UNFCCC. I invite you to think of it as an upstream tributary; a source of fresh thinking that feeds into the two mainstreams of our multilateral system. Its role will be to explore ideas and gather critical mass behind mutually empowering solutions, free from the constraints of formal proceedings. By providing them with the intellectual and relational capital they need to succeed, it can best support the decision-making work of both organizations.

Let me also be clear that this will be an open conversation. Participation will not require pre-commitment to a common vision document; only a shared conviction in the value of dialogue itself. We are not assembling a coalition of the like-minded; we are establishing a laboratory for the unlike-minded. We believe in the power of dialectics. It is the creative friction between diverse viewpoints that will generate ideas that are workable, inclusive and effective precisely because they have been stress-tested. As Heraclitus said, "*out of discord comes the fairest harmony*."

That harmony is not built by ideas alone. A simple truth is that solutions are built by people. This is why the core of this exercise will be a dialogue among government officials—the same people who lead trade and climate negotiations. The common ground they build together in this space is the same ground on which formal understandings can later stand.

This Forum is where we will ask, "Why not?" Why not a sustainable global trade system that supports ambitious climate action and inclusive development? Why not a just transition that lifts every nation? Let us have the boldness to ask these questions and the ingenuity to build the answers together.

But they will not deliberate in isolation. We envision this Forum as a public square where all relevant work will converge. Participants will be informed and challenged by the work happening across our global community, including by stakeholders outside their usual orbits: the OECD, BRICS, the Climate Club, regional organizations. We will build upon the foundation of existing knowledge, but engaging with an idea will not imply endorsement. By debating these diverse inputs on their merits, we will generate our own comprehensive feedback for these stakeholders and give our contribution to humanity's collective thinking.

To ensure this dialogue is both informed and focused, it will be supported by an Expert Panel of distinguished academics and experts, equally split between nationals of developing and developed countries. Ahead of each meeting, the Panel will inform participants on the state of the art of the relevant topic. The objective is to steer the conversation towards the substance of issues and away from preconceived positions. The Panel will direct our focus to the specific angles where the most value lies, will ensure our energy is spent on building solutions together.

All these design elements, the interdisciplinary approach, the independent structure, the balanced expert guidance, serve one goal: to change the structure of our conversation. This Forum aims to move us from the diagnosis of problems to the design of solutions. It is a dedicated effort to shift from an exclusive focus on litigating the "what" to start collaborating on the "*how*".

At its heart, this is a shared space to ask the questions that move our communities forward. As George Bernard Shaw wrote, "*You see things; and you say, 'Why?' But I dream things that never were; and I say, 'Why not?'*" This Forum is where we will ask, "*Why not?*" Why not a sustainable global trade system that supports ambitious climate action and inclusive development? Why not a just transition that lifts every nation? Let us have the boldness to ask these questions and the ingenuity to build the answers together.

Thanks to many of you here, we do not start from scratch. For years, the WTO, through its Committee on Trade and Environment; its Trade and Environmental Sustainability Structured Discussions; and its active engagement at successive COPs, has been bringing the climate and trade communities closer. Pioneering work has also been done by UNCTAD and by the Azerbaijani COP29 Presidency with the BICFIT Dialogue.

Let me conclude where I began: with our reunion. Multilateralism is more than a system of rules; it is a political expression of a timeless human truth: that we create our shared world through speech. It is in the

space between us, in the act of dialogue, that we turn our individual perspectives into a common reality. In the Integrated Forum, we will demonstrate that the difficult work of speaking and listening is our greatest collective strength, for it allows us to understand, engage, and deliver. Let us show that the enduring solutions are those we build together.

> There is a clear and shared desire to move into the granular, technical work of building the common architecture for a sustainable global economy.

While our final agenda is still taking shape, I can share the currents of interest we're seeing from our initial consultations. There is a clear and shared desire to move into the granular, technical work of building the common architecture for a sustainable global economy. The energy is concentrating on the foundational elements, the shared language and the common tools, that we will all use to find our way to the transition ahead.

First, we are hearing a call to address the question of climate criteria. The word "green" has come to mean too many things, and too little. The world is more complex than simple labels. We need shared approaches about how to define and verify the climate value and environmental performance of products, processes and services. It's about creating a common grammar for our policies and our economies, so that we can design trade rules that reward environmental action, distinguish green from greenwashing, avoid unfair barriers to trade, and build the trust upon which collaboration depends.

Second, to trust one another, we need transparency, and transparency requires shared understanding in how we measure our impact. This is the work of carbon accounting. Different countries and industries have different methodologies for carbon accounting, and the Forum will take upon itself to convene experts to map these approaches, understand their equivalencies, and build bridges between them. We will, in essence, draw a Rosetta Stone: a shared reference allowing us to read one another's work and have confidence in the integrity of results even when our approaches differ. This is a necessary step for building the integrated, low-carbon markets of the future.

Third, we must focus on the role of trade in accelerating the transition away from fossil fuels. The urgency is unmistakable. As Shyam Saran, the distinguished Indian diplomat, wisely said, "*Climate change-related disasters, and rising costs of adaptation, would surpass any gains from a delayed transition away from fossil fuels.*" We need to address, in very practical terms, how trade can accelerate the global deployment of renewable energy technologies, from solar panels to batteries. This means looking at supply chains, at standards, and at how we can foster the partnerships needed to scale up manufacturing and drive further down costs globally. But this new economy must be fairer than the old one. We need an honest conversation about the critical minerals that power this transition, about how to ensure that developing countries can share in the new era of prosperity we mean to create. This is how we achieve a true triple-win: delivering for the climate, for development and for our people.

These three areas—climate criteria, carbon accounting and energy transitions—are not easy questions, but they are the right ones. They are the building blocks for a new paradigm of cooperation. They are technical, they are complex and they require the kind of integrated expertise our Forum is designed to provide. We are confident in our ability to unlock progress.

> We cannot afford to leave one of the most powerful levers for global transformation—the international trade system—on the sidelines.

We are moving into a new phase. The conversation is no longer about whether the trade and climate agendas are linked, but about how we can align them in a fair manner to serve our shared goals. The perspectives from the WTO, the private sector, and our partner governments all point to the same conclusion: there is a clear demand for a dedicated, pragmatic space to do this work.

But let us remember why this work is so urgent. I want to leave you with the stark warning of the UN Secretary-General, who told the world:

"*The era of global warming has ended; the era of global boiling has arrived. The air is unbreathable. The heat is unbearable. And the level of fossil fuel profits and climate inaction is unacceptable. Leaders must lead. No more hesitancy. No more excuses. No more waiting for others to move first. There is simply no more time for that.*"

This is the critical decade to take action before action becomes reaction—when we have the chance to shape our climate future rather than respond to its consequences and spiralling costs. It is time to match words with deeds. We cannot afford to leave one of the most powerful levers for global transformation—the international trade system—on the sidelines. Let the trade and climate communities face this task in the Integrated Forum on Climate Change and Trade. Let us pull this lever together.

Ambassador André Aranha Corrêa do Lago *is COP30 President.*

Three Key Issues to Address at the Interface Between Climate and Trade

Ignacio Garcia Bercero

To foster urgently needed multilateral cooperation and collective action on the nexus of trade, climate, and sustainable development at the WTO, members need to address the three core issues of trade-related carbon measures, subsidies, and trade facilitating action to support climate action in developing countries.

Building on the growing engagement of World Trade Organization (WTO) members in discussions on trade, climate, and sustainability—and the broad recognition of the need to forge collaboration—a key question confronting the trade policy community is how to enhance international cooperation on trade at the WTO to drive action on the Paris climate goals in ways that support sustainable development priorities? Where are the greatest opportunities for trade cooperation to make a difference to climate action? What are the pragmatic options that could help shape a proactive, forward-looking agenda at the WTO between now and the next ministerial meeting in 2026?

Despite the disappointing outcome on issues of trade and sustainability, including on climate, at the WTO's Thirteenth Ministerial Conference (MC13) in 2023, it is possible to envisage a high level of ambition. So as to achieve this, it will be important to be pragmatic and use the great variety of tools available at the WTO. These include, for example, the option of pursuing both multilateral and plurilateral negotiations and of aiming for legally binding or non-legally binding outcomes. In using the se tools, creativity will be key to developing a meaningful trade and climate agenda in the WTO.

To achieve a high level of ambition, it will be important to be pragmatic and use the great variety of tools available at the WTO.

This agenda will need to address three core issues at the interface between climate and trade: trade-related carbon measures, the impact of subsidies on both trade and climate, and trade facilitating measures in support of climate action by developing countries. On each of these key issues, what is achievable now within the framework of the WTO?

Trade-Related Carbon Measures

First, on trade-related carbon measures, it has been extremely useful to pursue intensive discussions in the Committee on Trade and Environment (CTE). This transparency function is going to continue to be critical going forward, as different policy developments are likely to take place in this space over the coming years. Yet while transparency is crucial, it will be necessary to go beyond this to limit the risks of fragmentation. In particular, it is disappointing that members so far have not agreed to conduct structured discussions in the CTE on the crucial issue of methodologies for carbon accounting. While an ideal scenario of agreeing to a common methodology for carbon accounting may or may not be attainable, at the very least we should aim for a situation where there is no incompatibility between the different methodologies that are being developed. Further discussion would also be useful on the issue of low carbon standards in different sectors and their potential interaction with trade-related carbon measures.

Alongside these discussions, the question of how to simplify the information that companies need to provide to meet carbon accounting requirements also needs to be on the table. Here, there are important decisions to make on verification systems and default values for example. As these issues will increasingly be worked out across many jurisdictions over the coming years, it is very important that this conversation also be conducted in a structured manner in the WTO.

Additionally, the WTO should continue to cooperate with other international organizations and keep WTO members informed on developments in climate policies that have an impact on trade, including possible initiatives on cooperation around carbon pricing or the development of sectoral decarbonization initiatives.

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Subsidies

The second big challenge is subsidies, which need to be looked at from the point of view of their impact both on trade and climate. On this issue of subsidies—where a lot of thinking and work is being done—an off-campus analytical discussion should take place, drawing on the wealth of external expertise. This conversation cannot be conceived as a technical discussion in the Committee on Subsidies and Countervailing Measures but should be conducted instead from an analytical perspective in a more informal setting, bringing in as much expert knowledge as possible. A starting point could be to analyze different types of subsidies that are being used to support climate objectives both in terms of their effectiveness in achieving climate goals and their impacts on trade. This could include consumption subsidies, subsidies for research and development, and subsidies that cover capital investments or operating costs linked to the deployment of climate technologies. Only when sufficient analysis has been undertaken will it be possible

to assess the appetite to negotiate the issue in the WTO. There would also be a need to consider the possible relationship between climate-related work on subsidies and broader efforts to update WTO rules on industrial and agricultural subsidies.

Trade Facilitating Action

The third issue relates to what can be done in the WTO to facilitate trade and investment in green goods and services. Here, an approach that is different to that taken in the Environmental Goods Agreement should be considered. This approach could be both narrower and broader: narrower in terms of the objective and broader in terms of the tools that could be utilized to achieve that objective. On the objective, it could be useful for interested WTO members to discuss how trade policy can facilitate climate action in developing countries. This has different dimensions, including issues related to facilitating investments in renewable energies, promoting better integration in green value chains (from critical raw materials to processing and manufacturing), or facilitating compliance with trade-related carbon measures. Participants could consider different trade-related actions that can contribute towards these objectives. Each participating member could identify those actions it is ready to undertake, and these measures could be put together in a plurilateral agreement that should be as inclusive as feasible as well as open for more countries to join. Work on this could start by COP30 in late 2025 with the aim to reach agreement by the WTO's Cameroon ministerial conference (MC14) in 2026.

In Conclusion

Trade policy can make a significant contribution to the achievement of the goals of the Paris Agreement. By MC14, WTO members could aim at agreeing on a plurilateral initiative that provides for a set of trade-related actions to support developing countries in implementing their nationally determined contributions, promote their integration in green value chains (including through greater value addition), and facilitate compliance with trade-related climate measures. The CTE should have more focused discussions on trade related-climate measures with a view to promoting greater compatibility of approaches and limiting unnecessary costs for business due to fragmentation. Further, off-campus analytical work on subsidies from a trade and climate perspective would help to identify whether the issue is ripe for negotiations after MC14, possibly as part of broader work on both industrial and agriculture subsidies.

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Opportunities for Trade Policy and Cooperation to Shift Course on Climate Change and Nature Loss

Daudi Sumba

International trade policy and cooperation are major levers that should be used to their full potential to make adequate progress on nature and climate.

The world is currently on a deeply unsustainable pathway, putting the future of life at risk. Humanity has already breached seven of the nine planetary boundaries, including those related with climate and biodiversity. Not only we are on the brink of permanently exceeding the 1.5°C global warming limit, but with wildlife populations having plummeted by an average of 73% since 1970, we are nearing irreversible ecological tipping points in many critical ecosystems, from the Amazon to coral reefs. Time is running out.Another Another

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We know that secure and prosperous economies cannot exist without a stable climate and thriving biodiversity. In fact, the global economy is heavily exposed to compounding nature and climate risks that threaten sustainable development and economic growth and resilience. A World Bank report estimates that the collapse of just some of the ecosystem services provided by nature could result in a decline in global GDP of $2.7 trillion annually by 2030, hitting low-income and lower-middle-income countries the hardest.

The existential threat for humanity represented by biodiversity loss and the climate crisis require us to navigate the current geopolitical, economic, and financial challenges and move ahead decisively to accelerate progress in transforming our economies and major economic sectors, from agriculture and fisheries to finance, and energy. International trade policy and cooperation are major levers that we should use to their full potential to make adequate progress on nature and climate.

Opportunities for Trade Policy and Cooperation

There are opportunities we should seize to meet the urgency of protecting our planet's life-support systems.

First, we are not without direction or robust multilateral commitments. The 2030 Agenda, the Paris Agreement, and the Kunming-Montreal Global Biodiversity Framework give us clear global goals and targets as well as guidance on how to get there. Those can and should be used to drive transformative action through a whole-of-government and a whole-of-society approach to deliver impact on the ground.

Second, there are major opportunities in the international trade policy and cooperation space arising from the shocks that have hit the international trading system, pressures on public finance, and discussions on World Trade Organization (WTO) reform.

For instance, we have a once-in-a-generation opportunity to rethink strategically what is the overall narrative and objective of the international trading system and trade policymaking and cooperation. We should seize this opportunity and build on the work done in recent years, ensuring that nature, climate, and sustainable development are at the core of the overall goals and priorities of the international trading system.

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Another case in point is the issue of harmful subsidies; the elephant in the room. Current financial incentives, such as environmentally harmful subsidies, are driving nature loss by encouraging practices that degrade ecosystems. An estimated $2.6 trillion is being spent each year on public subsidies that accelerate the production or use of natural resources or undermine ecosystems. This further enables an estimated $5 trillion in private financing to such activities. Trade diplomats and the WTO showed, with the first fisheries subsidies agreement, their ability to tackle this issue when sustainable development is the guiding light. We should build on this success. Eliminating or repurposing harmful subsidies could also be an important means for governments to free critical public resources.

Finally, we need to move away from short-term crisis management and focus on more strategic approaches that drive longer-term transformation. This requires the development of trade scenarios and strategies as well as national sectoral pathways consistent with nature-positive and net-zero goals.

Turning Opportunities Into Reality

There are many complementary ways to turn those opportunities into reality. We should tap into ongoing work to strengthen the current multilateral trading system while also taking advantage of opportunities to develop plurilateral agreements to innovate and speed up action. We should also think outside the box and devise innovative approaches such as the Integrated Forum on Climate Change and Trade, launched at the 2025 UN Climate Change Conference (COP30) in Belém.

The next five years are critical for nature, climate, and people. This is our window to shift course before the combined impacts of climate change and nature loss trigger cascading, runaway effects. The risk of failure is real, and the consequences are profound. International trade policy and cooperation can and should be a major lever to turn things around.

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** This article is derived from a presentation at a panel on Opportunities, challenges, and pathways for enhanced cooperation on trade, climate, and sustainable development at the TESS TCSD Conference 2025.*

Managing and Reducing Climate-Trade Tensions

Deconflicting the Trade-Climate Nexus: We Need to Think Beyond Business As Usual

Trevor Sutton

At a moment when the international community is falling short of its climate goals, the tendency of climate policies to generate trade tensions is a worrying trend. To align climate ambition with a rules-based trading system, we need to think beyond business as usual.

In recent years, government policies linked to decarbonization goals and development of clean energy supply chains have become flashpoints in the global trade system. To take what is perhaps the most prominent example, the EU's Carbon Border Adjustment Mechanism (CBAM) has been met with accusations of "green protectionism" and "coercion" across the Global South. On the other side of the Atlantic, the US Inflation Reduction Act's (IRA) clean energy subsidy scheme sparked outrage in Europe and Asia, and eventually a WTO challenge.

It is not just advanced economies that are feeling the heat. Indonesia has encountered sharp pushback (and an adverse World Trade Organization (WTO) ruling) for attempting to move up the lithium battery value chain by imposing an export ban on raw nickel ore. And China, the world's manufacturing behemoth, now faces a raft of countervailing duties and protective tariffs on its electric vehicle, solar, wind, and battery exports over concerns that these sectors have benefitted from anticompetitive subsidies and other unfair trade practices.

Taken individually, these controversies may seem unremarkable. Squabbles over trade are hardly new—over 600 disputes have been brought at the WTO since its establishment. But at a moment when the international community is falling short of its climate goals, the tendency of climate policies to generate trade tensions is a worrying trend.

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A stable global trade environment aligned with national climate action is essential to the green transition. The breadth of economic transformation required for deep decarbonization means that even countries with large industrial bases and abundant natural resources will depend on cross-border supply chains and the comparative advantage of foreign producers to achieve substantial emissions reductions. In addition, the thin profit margins associated with renewable power generation leaves the sector particularly exposed to supply chain disruption and unforeseen price fluctuations.

A Structural Challenge

Why is the climate-trade nexus so contentious? Partly because trade relations in general have grown more fractious. Were a trade practitioner to time travel from 2015 to the present she or he would likely be dumbfounded at the erosion of some of the global trade system's foundation norms and the mainstreaming of trade protectionism among some of the world's leading economies, including the United States. Viewed from this perspective, fragmentation and market barriers in clean energy supply chains are a reflection of a broader loss of confidence in an open economic order.

But there is another, arguably more important reason that climate-related trade measures have so many governments at loggerheads: the modern trade system was not designed to mitigate and solve the economic and security challenges associated with the shift to low-carbon economic growth and more sustainable modes of production and consumption.

Had the 20th century architects of the trade system treated climate change with the same urgency that much of the world does today, they might have provided governments with a clear and workable framework for addressing the negative externalities of carbon-intensive economic activities. Or they might have developed principles for weighing a policy's trade-distorting effects against its climate benefits that are consistent across WTO agreements and accommodating of diverse approaches to environmental regulation; or created incentives for climate-centred trade cooperation, for example by making an exception to the prohibition on bilateral or plurilateral sectoral agreements for clean energy goods and services.

The trade system contains none of these features, however, or any others that could guide national policymakers seeking to strike a fair and effective balance between decarbonization goals and the interests of trade partners. As a result, governments wishing to advance transformative climate regulations or encourage low-carbon alternatives to incumbent industries must navigate a set of rules and disciplines that could plausibly be interpreted to conflict with such policies. Some countries, specifically large economies with the heft to withstand or discourage trade retaliation, have been willing to embrace contestable interpretations of those rules or outright ignore them; but smaller and weaker economies will likely tread more cautiously.

Governments wishing to advance transformative climate regulations or encourage low-carbon alternatives to incumbent industries must navigate a set of rules and disciplines that could plausibly be interpreted to conflict with such policies.

The Way Forward: ACCTS and Its Limitations

The formidable obstacles to WTO reform mean that even modest revisions to the multilateral trade system are likely out of reach for the foreseeable future. But there is still room for like-minded, high-ambition countries to work cooperatively to reduce tensions around climate-related trade measures and broaden the economic opportunities associated with decarbonization.

In pursuing this project, political leaders should consider that the ideal outcome may not in all cases be a traditional free trade agreement, which would likely reproduce the same rules and disciplines that are contributing to current frictions. Instead, they would be well-served to structure negotiations around three goals, all of which could be advanced through arrangements that are more tailored and informal than a standard free trade agreement: (1) expansion of national policy space to pursue ambitious decarbonization strategies; (2) deepening of "soft" cooperation around areas such as standards and scientific measurement frameworks; and (3) proactive mitigation of common drivers of conflict around trade and climate.

The recently concluded Agreement on Climate Change, Trade and Sustainability (ACCTS) between New Zealand, Costa Rica, Iceland, and Switzerland provides one example of what such arrangements could look like. The agreement commits parties to zero-tariff treatment of a broad range of environmental goods and services and a gradual phase-out of fossil fuel subsidies. It also provides voluntary eco-labeling guidelines and a mechanism for measuring changes in carbon dioxide emissions stemming from shifts in subsidy policy. ACCTS is an open plurilateral agreement, meaning any country may join.

ACCTS is notable in advancing decarbonization goals while sidestepping the trip wires that have triggered controversies around climate-aligned trade in the past. By acting as first movers in linking market access to the phase out of environmentally harmful subsidies, ACCTS establishes a norm that other governments can reference should they seek to include similar provisions in their own trade arrangements. The agreement's enumeration of environmental goods and services, its eco-labeling guidelines, and its emissions measurement mechanism likewise provide points of reference for regulators around the world.

Beyond these positive incentives, the designers of ACCTS also thought creatively about minimizing tensions that a sectoral agreement focused on climate might be expected to produce. To avoid running afoul of the WTO requirement that preferential arrangements between a subset of WTO members must be comprehensive—that is covering substantially all trade between parties—the parties agreed that the tariff reductions under the agreement would apply to all their trading partners, not just each other.

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ACCTS is a compelling example of the kind of innovative policymaking that is needed to square climate action with open and fair trade. But we should also be frank about its limitations. All four parties to the agreement are upper or upper-middle income countries with small or non-existent fossil fuel resources, high environmental standards, and (Costa Rica aside) comparatively robust renewable and electric vehicle infrastructure. They collectively account for a tiny share of global production of the environmental goods and services covered in the agreement and have little to lose by enhancing access to foreign sources of those products. Countries with sizeable manufacturing bases or major fossil fuel industries will almost certainly find the terms of the agreement unappealing.

Expanding the Toolbox

To foster broader consensus around climate-related trade measures, other approaches will be needed. One potential way forward is to prioritize the third goal identified above—i.e. managing sources of conflict pre-emptively—rather than letting them play out ex-post in dispute settlement or in vitriolic diplomatic spats of the kind seen around the IRA or CBAM. The theory behind such an approach is to identify situations where the underlying drivers of tensions are not technical arguments over the finer points of trade law but more foundational questions over who benefits from the economic opportunities presented by the green transition. By addressing these drivers head on, countries may be able to achieve a "live and let live" attitude towards divergent interpretations of WTO rules as they apply to climate policies.

To foster broader consensus around climate-related trade measures, other approaches will be needed.

To take a concrete example, much of the criticism levied by developing countries against the CBAM has centred on its purported incompatibility with the Paris Agreement, with the most common complaints being that the measure forces the EU's trading partners to decarbonize on terms set by Brussels and places a disproportionate burden on developing countries that have contributed the least to climate change and lack the resources and capacity to invest in industrial decarbonization. This Paris-centred critique has driven much of the global CBAM conversation—an irony given that European leaders have made WTO compatibility the north star of their diplomacy around the mechanism.

Even were it possible to revise WTO rules to explicitly allow carbon tariffs, frictions over the CBAM would likely endure. A more durable solution requires thinking outside the traditional trade toolbox. Should more countries follow in Brussels' footsteps, it may be necessary for the Global North to proactively respond to the capacity limitations of many developing countries. This could entail mobilizing capital to fund industrial decarbonization projects in covered sectors, expanding technical and financial assistance for development of carbon pricing systems, and loosening intellectual property rights for relevant technologies. Such assistance could be bundled into "partnerships" available to countries below a certain income threshold and presented as an alternative to tariff exemptions.

Another major driver of trade frictions that would benefit from fresh thinking is concentration in clean energy supply chains. In less than a decade, China has achieved extraordinary dominance in manufacturing of solar products, lithium batteries, and electric vehicles, and is now threatening incumbents in the wind turbine sector. China's clean energy supremacy has made clean energy goods more abundant and affordable. But that benefit must be weighed against the tendency of unbalanced trade relationships to fuel geopolitical rivalry and instability.

That one country should account for upwards of 80% of production in a strategically important sector is unprecedented in the history of the modern trade system. It is unsurprising, therefore, that our existing trade rules offer little guidance on how to manage concentration in global market share. As a result, efforts to address China's clean energy dominance have centred on whether Beijing has engaged in unfair trade practices, raising thorny questions about where subsidies and other non-market practices end and legitimate competitive advantage begins.

Rather than focus on how we arrived at a concentrated clean energy sector, which is likely to aggravate rather than reduce tensions, it would be more productive to ask how countries can work collaboratively to deconcentrate supply chains on the logic that excessive dependence on any one country to supply the material needs of the green transition presents unacceptable risks. Such a frame would move us away from questions of who is to blame and towards pragmatic solutions.

One such solution would be an ad hoc agreement to treat tariffs, subsidies, and sectoral arrangements aimed at diversifying clean energy supply chains as non-actionable for a defined period, giving countries breathing room to build economic resilience without permanently entrenching trade barriers. Such an agreement might raise the cost of clean energy goods in some markets, at least initially. But the countries most likely to opt in to the agreement are those that have already imposed or are considering substantial barriers on Chinese exports. Furthermore, some under-served markets may actually see increased availability and affordability of clean energy goods as Chinese firms seek new export destinations. In addition, the agreement would strengthen demand for non-Chinese supply, which in turn could encourage investment in clean energy manufacturing in other emerging economies.

Conclusion

The coming decade is likely to see rapid growth in clean energy industries. From the perspective of averting the existential crisis of climate change, this is unquestionably a good thing. But for the global trade system it presents a challenge. As the clean energy sector grows in importance, trade disputes relating to the sector are likely to become more frequent and higher-stakes, which in turn will bring into sharper relief the misalignment between trade rules and some countries' preferred pathways to net-zero. The cumulative effect of these frictions will be to undermine confidence that an open economic order is compatible with nationally determined decarbonization.

Avoiding this outcome will require creative thinking and unconventional problem solving. Such a non-traditional approach may sit uncomfortably with veteran trade practitioners. But business as usual will hasten the arrival of a global trade system defined less by cooperation around shared principles and more by zero-sum competition and power projection.

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From Tension to Cooperation on Trade-Related Climate Measures: Six Principles to Bolster International Cooperation

International Legal Expert Group on Trade-Related Climate Measures and Policies

As the climate crisis deepens, politically charged tensions over a growing array of trade-related climate measures risk undermining the international cooperation that is vital to achieve the world's climate goals. Based on the findings of an international group of world leading legal experts, this commentary highlights a set of key principles of international law which could serve as guidance to bolster cooperation around the design and implementation of trade-related climate measures and policies.

The Need for Enhanced Cooperation on the Trade and Climate Interface

Faced with the urgent need to take action and achieve their net-zero commitments, many governments are implementing or considering a variety of trade-related climate measures (TrCMs) ranging from border carbon adjustment measures through green industrial policies to due diligence requirements, carbon standards, or similar schemes. As growing tensions around the impact of these measures threaten progress to address the climate crisis, governments urgently need to roll up their sleeves to align trade and climate policies in support of climate mitigation, adaptation, and a just transition to climate-resilient development pathways. Central to this task will be to develop a shared understanding on how to design and implement TrCMs in ways that couple the urgent need for ambitious action on climate with approaches that respond to legitimate development imperatives of poorer countries in a fair and inclusive manner, accounting for varying national circumstances, capacities, and vulnerabilities.

So far, discussions on TrCMs have mostly been avoided by the parties in the climate talks, not least because of their highly sensitive nature and potential to derail negotiations. Yet, they are increasingly coming to the forefront of the discussions as illustrated by the recent request by the BASIC group of countries (Brazil, China, India, and South Africa) to include an agenda item at COP29 on "Concerns with climate-change related unilateral restrictive trade measures, and identifying the ways to promote international cooperation in line with the first global stocktake outcome."

The debate in itself is not new and has been at the heart of discussions in other international fora. In recent years, discussions across virtually all committees and bodies of the World Trade Organization (WTO) and in a range of initiatives led by a subset of WTO members like the Trade and Environmental Sustainability Structured Discussions (TESSD) have seen a growing recognition by a wide range of countries of the need to cooperate in this area. In a similar vein, the newly issued G20 Principles on Trade and Sustainable Development reflect a common attempt at identifying a set of voluntary, non-binding, and non-exhaustive guiding principles for consideration in the design and implementation of measures related to trade and sustainable development.

In light of the many different approaches to TrCMs, international discussions so far have highlighted a growing interest in and need to focus on identifying best practices and key principles for the design and implementation

of TrCMs to ensure that they meet their legitimate environmental objectives while supporting broader sustainable development concerns. As a contribution to these discussions, the Forum on Trade, Environment, & the SDGs (TESS) convened a diverse group of world leading legal experts to provide independent guidance on principles of international law that should be considered in the design and implementation of TrCMs.

The Rational for International Guidance on Trade-Related Climate Measures

Trade-related climate measures are among the policy tools that governments are increasingly using to address climate change. Such measures and policies—including tariffs, border charges and restrictions, internal taxes, regulations, standards, or subsidies—have both climate change and trade dimensions. Amidst rising political tensions and disputes about some of these measures, the report of the TESS expert group offers independent guidance for governments and stakeholders on principles of international law that are relevant for consideration in the design and implementation of such measures.

A critical starting point is that trade-related climate measures and policies should be approached as legal hybrids involving a number of areas of international law. More specifically, the rationale, design, and the debates about these measures should draw from different international law regimes, including those relating to the environment generally, climate change specifically, and international trade, along with the rules and principles of general international law, international human rights law, and international commitments to sustainable development.

To this end, a set of recognized and well-established principles of international law are especially relevant for consideration in the design and implementation of TrCMs. In addition to highlighting the relevance of these principles, the TESS expert group report provides governments with some general guidance on how such principles could be reflected in the design and implementation of TrCMs, recognizing that the relevance of principles will depend on the type of measure and context.

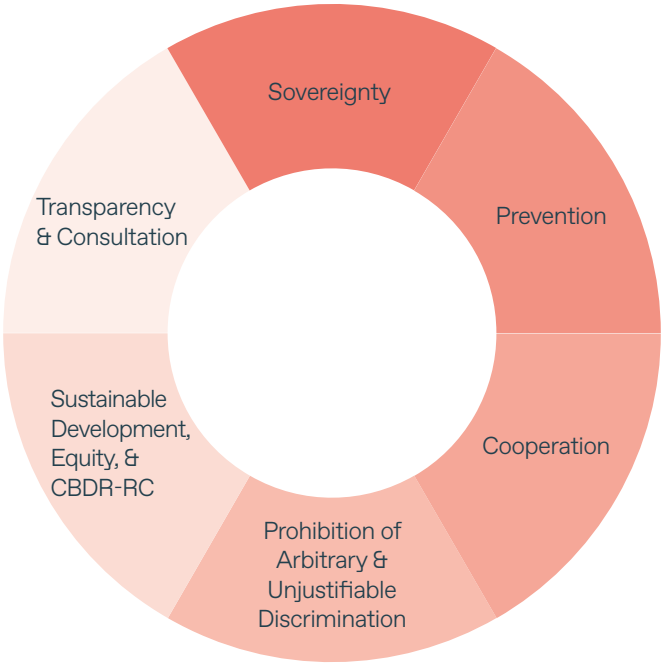
Six Principles to Bolster International Cooperation

The six following principles of international law—described in details in the report—can be highlighted in this respect: sovereignty; prevention; cooperation; prohibition of arbitrary and unjustifiable discrimination; sustainable development, equity, and common but differentiated responsibilities and respective capabilities (CBDR-RC); and transparency and consultation.

This set of principles is in no way intended to be exhaustive. They were selected following careful review of a broad range of possible principles, focusing on those that are particularly relevant to, and deserving of consideration, in the design and implementation of TrCMs. The intention here is not to make any definitive statement as to their legal status, including in the context of any particular international law regime. These principles may not necessarily have equal standing in international law, nor should one imply any particular hierarchy among them. Yet, while each principle may apply differently depending on the specific measure at issue, the particular context, and other relevant factors, they potentially all apply to a wide range of TrCMs.

With this in mind, governments, when they design and implement TRCMs, should consider all of these principles cumulatively, simultaneously, and in a mutually supportive and coherent manner, giving full effect to all relevant parts of international law, insofar as possible, while recognizing the difficulties involved in achieving such coherence.

Principles of International Law Relevant for Consideration in the Design and Implementation of Trade-Related Climate Measures and Policies



Source: International Legal Expert Group on Trade-Related Climate Measures and Policies (2023).

During its work, the expert group highlighted the need to discuss reforms, updates, or clarifications on a range of different aspects of international law in order to support the global response at the speed and scale called for by the climate crisis. While recognizing the scope for climate action within existing trade and climate rules, the expert group agreed on the need to encourage critical reflection and dialogue on potential developments of international law to support climate action, both to promote trade that can further collective climate goals and to discourage trade that undermines them, all while fostering sustainable development.

It is hoped that these reflections on the principles may play a useful role in further discussion around the design and implementation of TrCMs, providing a common reference point to inform and foster mutual understanding, dialogue, and international cooperation on trade-related climate measures and policies in the context of sustainable development priorities.

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*The **International Legal Expert Group on Trade-Related Climate Measures and Policies** drew together leading international legal experts from the climate, environment, trade, and general international law communities in both developed and developing countries, participating in their personal capacities. The full list of experts is available here.*

** This article is drawn from the expert group report on Principles of international law relevant for consideration in the design and implementation of trade-related climate measures and policies.*

How Can We Enhance Cooperation on Trade Measures With Climate Objectives at the WTO and Beyond?

Christophe Bellmann, Carolyn Deere Birkbeck, Yasmin Ismail, & Brian Kelly Nyaga

International cooperation on trade measures with climate objectives is critical to alleviating trade tensions, reducing fragmentation, and facilitating fair and equitable transitions to a net-zero future.

Faced with the urgent need to tackle the climate crisis, many governments are implementing or considering trade-related measures with climate objectives (trade-climate measures). These measures range from standards and regulations to subsidies, public procurement policies, and labelling schemes as well as internal taxes or border carbon adjustments.

Although they have impacts on trade, the design and implementation of such measures primarily occur at the domestic level, often with limited attention to their potential effects on third countries. As a result, differences in approaches and methodologies reflecting distinct contexts, priorities, and policy goals are creating a growing patchwork of uncoordinated national, bilateral, and regional efforts in addition to supply chain or sector-specific initiatives as well as public-private partnerships.

There is growing concern that the fragmented nature of these trade-climate measures, combined with poor transparency and coherence, may generate not only competitiveness tensions among trading partners but also add compliance costs for businesses, create unnecessary barriers to trade, and place the burden of adjustment on developing countries. Developing countries also express frustration that methodologies and approaches adopted in their countries are not adequately considered or recognized as equivalent in more advanced economies.

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At the World Trade Organization (WTO), a broad range of members has expressed readiness to enhance cooperation around such measures; intensified discussions have been prompted by the growing number of proposals circulated by WTO members since 2023, including by the African, Caribbean and Pacific Group of States (ACP), the African Group, Australia, Chile, China, Colombia, Japan, New Zealand, Republic of Korea, United Kingdom, and United States. Building on these proposals, there are discussions underway among WTO members on the potential for an outcome on this topic ahead of the 14th WTO Ministerial Conference (MC14) in March 2026—possibly in the form of a soft law approach aimed at fostering enhanced transparency or encouraging members to follow guidance in the design and implementation of measures.

There Are Different Rationales for Cooperation...

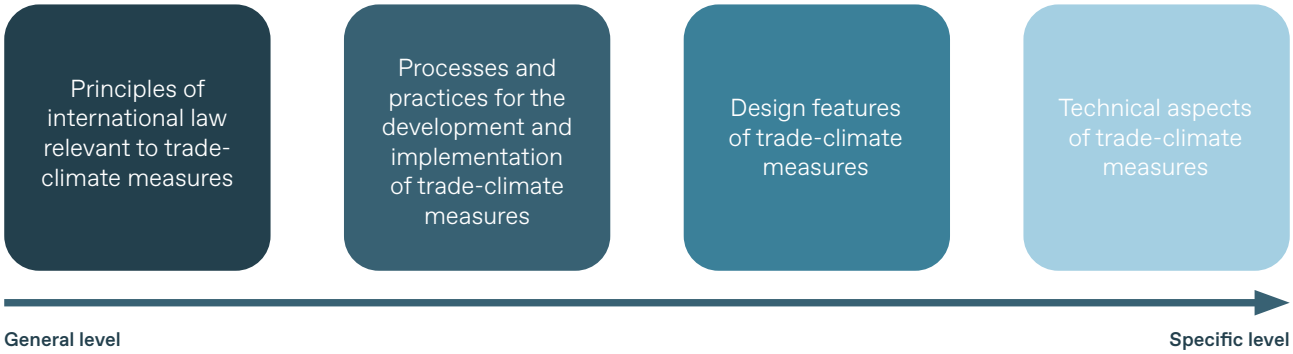
Analysis of the proposals circulated by WTO members to date highlights several different rationales (or objectives) that are being pursued through calls for cooperation. These can broadly be organized around the concepts of enhancing (i) coherence, (ii) transparency, (iii) interoperability or equivalences, and (iv) development or equity.

The concept of coherence is often invoked in discussion of trade-climate measures to convey the view that such measures should be understood as legal hybrids, meaning that their design and implementation should draw in a coherent manner from different regimes of international law—including those relating to the environment, climate change, and international trade, along with general principles of public international law and commitments to sustainable development. Transparency generally relates to the availability of information about new measures, including through WTO notifications, but also during the design process and throughout the implementation phase. Interoperability usually refers to the ability of different systems, such as climate-related standards and policies, to work together effectively and efficiently, for example through the use of common carbon accounting methodologies or by aligning reporting requirements. It can be linked to discussion of the opportunity to recognize as equivalent measures or methodologies that fulfil adequately the same objective even if their design differs. Finally, concepts of equity and development are invoked primarily by developing countries due to concerns about the trade and development impacts of trade-climate measures, including the adjustment costs associated with compliance, as well as about how such measures interact with or impact the balance of responsibilities and obligations among countries established under the global climate regime.

... With Different Levels of Cooperation

Regardless of the goal pursued, discussions on international cooperation on trade measures with climate objectives have mostly focused on four aspects: (i) principles of international law relevant to trade-climate measures; (ii) processes and practices for the development and implementation of measures (often referred to as "good regulatory practices"); (iii) design features of specific measures; and (iv) technical aspects.

Figure 1. Different Levels of Cooperation Raised in Ongoing Discussions on Trade-Climate Measures



Source: TESS (2025).

At the broadest level, achieving international cooperation could be advanced by establishing high-level guidance on general principles for the formulation of trade-climate measures. An example of this approach is the "voluntary, non-binding and non-exhaustive list of guiding principles for consideration in the design and implementation of measures related to trade and sustainable development" agreed at the G20 Trade and Investment Ministerial Meeting in October 2024.

A number of governments have also expressed interest in establishing high-level voluntary guidance for the regulatory processes and practices related to the development and implementation of trade-climate measures. This approach aims to develop shared understandings of "good regulatory practices" to be followed in the design and implementation of trade-climate measures—for example the list of common practices compiled by the co-convenors of Trade and Environment Sustainability Structured Discussions (TESSD) at the WTO.

At a more detailed level, options for cooperation can be promoted through the identification of particular policy design features. These are typically associated with specific policy instruments such as border carbon adjustments or carbon standards and climate-related labels. They may include approaches to define product or geographical coverage, the use of default values, procedures for accepting equivalences or crediting for third country policies, as well as aspects such as exemptions or transition periods.

Finally, at a more technical level, cooperation can focus on aligning methodologies and processes while allowing countries to pursue distinct policy goals and designs. This usually relates to aspects such as emissions equivalency, sectoral definitions, carbon pricing metrics, or methodologies for measuring or accounting for embedded carbon emissions as well as for reporting and verification.

Table 1 provides illustrative examples of issues that could be the object of international cooperation at each of these levels.

Issues of trade and climate arise in a broad range of WTO committees and governments are considering a range of pathways for collaboration.

Advancing Collaborative Efforts

At present, issues of trade and climate arise in a broad range of WTO committees and governments are considering a range of pathways for collaboration. Of particular relevance are discussions underway in the WTO Committee on Trade and Environment, where members are actively exploring opportunities for international cooperation that could take the form of voluntary guidance on particular aspects of trade-related measures with climate objectives. These discussions cover a range of issues pertaining to good regulatory practices, design features, and technical aspects, as well as transparency and development considerations.

Table 1. Examples of Issues Raised Internationally as Requiring Cooperation and Guidance

Principles of International Law Relevant to Trade-Climate Measures	Processes and Practices for the Development and Implementation of Trade-Climate Measures (Good Regulatory Practices)	Design Features of Trade-Climate Measures	Technical Aspects of Trade-Climate Measures
International cooperation Principle of prevention of environmental harm Right to regulate and sovereignty Prohibition of arbitrary or unjustifiable discrimination Coherence/mutual supportiveness Development/equity (S&DT – CBDR-RC)	Use of relevant international standards where available Accept as equivalent measures that adequately fulfil the same environmental objectives Grounding measures in the best scientific evidence available Not more trade restrictive than necessary to fulfil legitimate objectives Avoid excessive regulatory burdens and costs	Product and geographical coverage Procedures for accepting equivalences, mutual recognition, crediting for third countries policies, consideration of local circumstances Exemptions (e.g. de minimis thresholds to exempt small transactions, geographical conditions) Allowing for the use of default values	Taxonomy of emissions Sector definition and boundaries Emission equivalency Carbon pricing equivalency Carbon accounting methodologies Reporting templates and standards Verification procedures
Transparency and consultation Just and inclusive transition	Consultation of relevant ministries, external stakeholders as well as trading partners before and during development & implementation Transparency and notification of measures Consider regulatory approaches followed by other governments Conduct ex-ante and ex-poste impact assessments (including on trading partners)	Coordination on approaches to methodologies for measuring embedded emissions Data, reporting & disclosure requirements, and protection of confidential business information Use of revenues potentially raised Reflection of equity/ development considerations in design Technical assistance, capacity building, technology cooperation Transition periods and implementation timelines Reflection of equity/ development considerations in design Technical assistance, capacity building, technology cooperation Transition periods and implementation timelines	

Source: TESS (2025).

To address one of the specific cross-cutting dimensions of trade-climate measures, a number of governments have circulated a proposal for non-binding guidance on methodologies for measuring embedded greenhouse gas emissions (see for example WT/CTE/W/269/Rev.3). Such an outcome at the multilateral level could constitute a significant first step towards alleviating trade tensions, reducing fragmentation, and facilitating fair and equitable transitions to a net-zero future. A key priority will be for governments to redouble their efforts to reach convergence on appropriate scope and focus of such guidance, including how best to sustain cooperation on issues of transparency, policy design, and development, and to enhance dialogue on how to embed wider cooperation at the WTO on trade, climate, and sustainability, including in the context of WTO reform.

Beyond the WTO, there are a number of collaborative efforts and processes seeking to address and provide leadership or guidance on elements of this agenda, including in the UNFCCC, Climate Club, the OECD Inclusive Forum on Carbon Mitigation Approaches (IFCMA), the Coalition of Trade Ministers on Climate, the G20, the BRICS Laboratory for Climate, Trade, and Sustainable Development, and a range of sectoral collaborations and private sector initiatives.

A key priority will be to connect the dots between these processes in order to ensure productive dialogue at the political and technical level that can deliver concrete solutions that are coherent, politically supported, and technically robust. The proposal by Brazil in the context of its COP30 Presidency to launch a new Integrated Forum on Climate Change and Trade (IFCCT), offers a promising signal of how seriously governments view the need for enhanced dialogue and focused collaboration that brings together climate and trade policymakers and expertise.

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** This article is derived from a briefing note published by TESS in September 2025 on Fostering enhanced international cooperation on trade-related measures with climate objectives at the WTO: Coherence, transparency, development, and interoperability.*

Regional Green Trade Bloc to Fight Both Climate Change and Protectionism

Ma Jun

Establishing a green trade arrangement—involving reductions in tariffs and non-tariff barriers on a carefully selected list of environmentally beneficial goods and services—could aid in combatting climate change and bolster economic growth. But implementation on a global scale may prove challenging. Utilizing existing regional trade agreements, such as the Regional Comprehensive Economic Partnership in the Asia Pacific, could demonstrate the economic benefit to all member states, encourage green foreign direct investment, and promote a more inclusive approach to a "just" climate transition.

US President Donald Trump's decision to raise tariffs on imports from Canada, China, and Mexico, and all imports of aluminium and steel, has led the world to brace for major trade disruptions and economic confusion. Protectionism has come back into vogue and countries are cultivating critical sectors at home to bolster their economic security.

The retreat from free trade will accelerate under Trump, with far-reaching consequences—especially in the fight against climate change.

But the world has changed significantly in recent years. A deeper trend visible beyond the posturing and threats includes growing recognition of the urgency of cultivating homegrown green industries to combat climate change. This climate imperative must serve two mutually reinforcing goals—staving off further temperature increases and boosting economic growth and job creation.

Green trade is international trade in green goods and services in areas such as renewable energy, green transportation, energy efficiency, waste management, sustainable agriculture, nature-based solutions, and environmental professional services. Allowing free green trade—the trading of green goods, services, and technologies as freely as possible across nations—will help decarbonize the economy and protect the environment at low cost.

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A green trade arrangement would involve reductions in tariffs and non-tariff barriers on a carefully selected list of green goods and services that deliver environmental and climate benefits. This will reduce the costs of green goods and services in most countries, boost green industries, and enable faster and wider adoption of low-carbon practices and technologies.

Introducing green trade policy on a global scale is challenging as one or two nations can obstruct a complex global deal. But it can be built on the foundations of existing regional trade agreements, among a smaller "coalition of the willing." In the Asia Pacific region, the Regional Comprehensive Economic Partnership (RCEP) offers one avenue for freeing up green trade. As the world's largest trading bloc, by population and GDP, it comprises 15 countries and accounts for 30% of global economic activity.

A green trade arrangement could operate within the terms of RCEP, eliminating tariffs and significantly reducing non-tariff barriers on green goods and services ahead of the bloc's existing eight-year timeline for full tariff removal.

Designing the list of green goods and services that should be covered by the green trade arrangement is the first step that is needed. An initial study by the Institute of Finance and Sustainability (IFS) suggests that this list could include a few dozen categories and a few hundred products and services.

Demonstrating the economic benefits of a green trade agreement to all member states will be key. Robust design of the arrangement must ensure that all member countries in the bloc benefit economically, accelerating their pace of decarbonization and advancing the growth of their green industries.

Incentives for green foreign direct investment and technology transfers—such as a more stable policy environment, enhanced protection for investors and intellectual property rights—need to be incorporated into the green trade arrangement to increase trade and encourage cross-border green investment and technology transfers and help low-income countries develop green industries and jobs.

If RCEP adopts the idea, a larger number of Chinese, Japanese, and South Korean electric vehicle and renewable energy equipment manufacturers are likely to invest in supply chain development and license technologies to local producers across ASEAN countries.

There needs to be a balance between the need for policy incentives to stimulate green industries and trade-distorting subsidies. Government incentives for the production and consumption of green goods and services are often viewed favourably, but they can lead to trade disputes. Within the RCEP framework, it would be helpful if some no-significant-harm principles and prohibited subsidies could be agreed upon.

Non-tariff barriers not only tariffs must be removed or reduced. Under many free trade arrangements, non-tariff barriers are often more significant impediments than tariffs to international trade and investment in green industries. This requires a serious stocktake of all non-tariff barriers, including import and export quotas, quality inspection against domestic standards, customs clearance processes, product traceability requirements, trade finance and export credit insurance, and cross-border payment and settlement. Options should be developed to reduce these barriers, including harmonizing green product and traceability standards and reducing the cost of trade finance using green finance instruments.

A dialogue that considers all these factors will be crucial and larger economies such as China, Indonesia, Australia, Japan, and South Korea can play a key role in forming an initial consensus on the economic and climate merit of a green trade initiative within RCEP.

> A regional green trade arrangement can be an inclusive approach to support a "just" climate transition.

A regional green trade arrangement can be an inclusive approach to support a "just" climate transition. It will promote decarbonization and mutual economic benefits in all member states—via job creation and revenue growth. A multilateral approach will build mutual trust for broader cooperation on climate and trade issues.

The case for green trade arrangements is even stronger compared to the approach being embraced by some advanced economies. While the Carbon Border Adjustment Mechanism (CBAM) favoured by the European Union can reduce carbon leakage from imports, it harms incomes and employment in developing economies exporting carbon-intensive goods. Such unilateral measures are likely to lead to retaliation and yet more protectionism.

CBAM amounts to a "stick" that punishes developing countries for not sacrificing domestic growth and development to reduce emissions. In contrast, a green free trade arrangement provides a "carrot" encouraging green production and trade. Aligning climate goals with trade and development objectives rewards all participating economies for making progress on the green transition with mutual gains from trade, an initiative of the type a just green transition demands.

Ma Jun *is the Founder and President of the Beijing-based Institute of Finance and Sustainability, and former co-chair of G20 Sustainable Finance Working Group.*

** This article was first published in the East Asia Forum.*

Bolstering Equitable Clean Energy Access and Transitions

Trade Barriers Are Slowing Clean Energy Deployment – Here's How to Fix It

Valerie Picard

Many countries face crippling tariffs, restrictive regulations, and fragmented trade policies that slow the deployment of clean energy solutions. Addressing these challenges requires a coordinated global effort.

Every clean energy project—whether a solar farm, an offshore wind facility, or a battery storage hub—relies on global supply chains, cross-border investment, and trade in energy services. Yet, outdated trade rules, fragmented regulations, and uncoordinated carbon policies are slowing deployment and making clean technologies unnecessarily expensive for companies. For businesses committed to climate action, the gap between climate ambition and implementation often comes down to practical barriers in the trading system.

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The Scale of the Challenge

While global trade in goods is projected to reach an estimated $35 trillion by decade's end, much of this trade is not yet aligned with climate goals. For example, many emerging economies still face high import tariffs on solar panels, effectively slowing clean energy adoption. Or take the case of wind turbines. A single modern turbine contains components that cross borders multiple times—each crossing faces potential tariffs, import declaration fees, costly inspections, and other regulatory and fee hurdles. These frictions can significantly extend project timelines and create financing uncertainties that impact business planning and investment decisions. This challenge is particularly striking when compared to fossil fuel components, which are most often zero-rated in trade agreements—creating an uneven playing field that disadvantages clean energy technologies. In addition, experience shows that installation and maintenance of renewable energy projects typically create more domestic jobs than manufacturing, meaning that restrictive trade policies may ultimately hinder job growth rather than protect it.

And it's not just trade in goods. Barriers to cross-border service provision remain significant in many markets. Service providers are crucial for the clean energy transition—from architects who design green buildings and

lawyers who draw up infrastructure contracts for solar farms to engineers who oversee the installation of offshore wind turbines in the middle of the ocean. Yet restrictive licensing requirements, limits on foreign equity participation, and complex qualification recognition processes all impede the flow of expertise needed for clean energy projects. These barriers to services create a particularly pernicious form of climate inequality—where countries with the greatest renewable potential often have the least access to the specialized technical services required to harness it. These barriers hit small and medium-sized enterprises hardest, as they lack the resources to navigate complex regulatory environments across multiple jurisdictions.

One reason countries maintain high trade barriers for environmental technologies is their desire to develop domestic green industries. However, experience shows that installation and maintenance of renewable energy projects typically create more domestic jobs than manufacturing, meaning that restrictive trade policies may ultimately hinder job growth rather than protect it.

Some countries have made progress addressing these hurdles, offering valuable lessons on how smart policies can accelerate clean energy access. For example, Vietnam has removed import duties on clean energy components that cannot be produced locally, reducing costs for wind and solar projects. Its 2021 Law on Public-Private Partnership has strengthened its investment climate, helping Vietnam to become a regional wind energy leader.

However, many other countries still face crippling tariffs, restrictive regulations, and fragmented trade policies that slow the deployment of clean energy solutions. Addressing these challenges requires a coordinated global effort.

The Path Forward: Three Critical Strategies

Based on extensive consultation with our global business network of over 45 million companies in over 170 countries, the International Chamber of Commerce (ICC) identifies three critical priorities for trade policy reform that can accelerate clean energy deployment:

1. *Carbon Border Measures.* Without coordination, carbon border measures risk creating new trade barriers that slow rather than accelerate the clean energy transition. As carbon border measures have global implications, global norms for their design and implementation must be established, ensuring that efforts to reduce greenhouse gas emissions do not inadvertently obstruct the global transition to sustainable energy solutions. As we highlight in our Global Principles for Effective Border Adjustments, such principles should be developed through an inclusive global engagement of trade and environment ministers at WTO and UNFCCC level—with a new international technical body eventually established to support ongoing policy oversight and coordination. Effectively achieving this will require real consultation with business and trading partners in the design and implementation phases.

2. *Circular Economy.* Fostering international cooperation on circular economy policies for renewable technologies can create sustainable supply chains that reduce costs while protecting natural resources. Currently, however, businesses eager to deploy cross-border circular solutions face significant hurdles. As highlighted in the ICC-EY report, Putting the circular economy into motion: From barriers to opportunities, creating a truly circular economy for clean energy requires action on multiple fronts:

    - Multilateral cooperation to align standards and regulations
    - Harmonization of laws across jurisdictions to enable smoother flow of secondary materials
    - Embedding technical expertise in policymaking to ensure, practical, implementable solutions
    - Updating international frameworks like the Basel Convention to better support circular material flows

3. *Environmental Goods and Services*. Removing trade barriers on environmental goods and services must be a priority at the WTO but a fresh approach is needed. Eliminating tariffs on these goods and removing restrictions on clean energy services—such as engineering and grid management—would lower costs and accelerate deployment. But this is only one part of the equation. A comprehensive approach is needed that de-risks investment in clean energy projects and improves their economic viability, particularly in developing countries. To this end, trade and investment facilitation, government procurement, and financial mechanisms are critical components. Moreover, rather than considering each product or service in isolation, an ecosystem approach should be taken to ensure that the components, accessories, and supporting technologies needed to power environmental goods or provide services are also covered by these facilitating measures. To address this, the stalled WTO Environmental Goods Agreement negotiations must be revived but with a more holistic focus that expands beyond individual product lists to ensure more countries commit to eliminating all trade barriers for climate-friendly goods, including on environmental services, to promote the transfer of needed technologies. The plurilateral model exemplified by the Agreement on Climate Change, Trade and Sustainability (ACCTS) shows what is possible but needs broader adoption and, ambitiously, an expanded scope. Ultimately, a binding WTO agreement is required to maximize impact. For businesses, this would create the regulatory certainty needed to make long-term investments, expand into new markets, and scale clean energy solutions globally.

Revitalizing the Trading System Through Climate-Trade Cooperation

More broadly, addressing these trade barriers requires a revitalized multilateral trading system capable of integrating climate and trade policy effectively.

As the WTO struggles with paralyzed dispute settlement, a stifled negotiation function, and competing visions of economic security, these pressures have hindered progress on integrating trade and climate at the multilateral level. A comprehensive undertaking requiring consensus from all 166 members is difficult to achieve in today's geopolitical and economic climate, which has left climate-trade policy caught in the same institutional impasse affecting broader WTO reform.

Despite these challenges, the member-led Trade and Environmental Sustainability Structured Discussions (TESSD) has made valuable contributions by fostering inclusive dialogue on key issues among diverse stakeholders. The TESSD's collaborative approach represents precisely the kind of inclusive framework that can help bridge differences and develop workable solutions.

Addressing these trade barriers requires a revitalized multilateral trading system capable of integrating climate and trade policy effectively.

Building on this foundation of dialogue, the next step is to advance towards concrete negotiations and outcomes. Clean energy trade reforms could present an ideal opportunity to revitalize negotiating prospects. Plurilateral negotiations on environmental goods and services could demonstrate how variable geometry approaches maintain multilateral principles while enabling progress. The thorny issue of subsidy reform—where current WTO rules inadequately address both fossil fuel subsidies and legitimate support for green transitions—represents another area where climate-trade cooperation could advance broader systemic solutions. By developing clearer criteria that differentiate between distortive subsidies and those supporting legitimate sustainability objectives, negotiators could establish templates for addressing subsidy disciplines beyond the climate sector.

Perhaps most significantly, clean energy cooperation could also offer a pathway to reconcile competing conceptions of economic security. While traditional security paradigms emphasize national self-sufficiency and technological protection, climate security requires collaborative approaches to technology diffusion and deployment. As energy security and climate resilience become increasingly interconnected, trade policies supporting clean energy access align national security interests with multilateral cooperation, potentially breaking the false dichotomy between openness and security that has undermined the WTO.

This approach could position clean energy not merely as a beneficiary of trade reform, but as a catalyst for broader systemic renewal. By addressing the practical challenges of trade in low-carbon goods and services, countries can rebuild trust in the WTO's ability to deliver meaningful outcomes on twenty-first century challenges while establishing governance models that could eventually extend to other contested areas of the trading system.

Looking Ahead

> The intersection of trade policy and climate action represents the most underutilized lever for accelerating the clean energy transition.

The intersection of trade policy and climate action represents the most underutilized lever for accelerating the clean energy transition. When trade ministers enter climate negotiations and climate ministers engage in trade fora, they unlock policy synergies that neither community can achieve in isolation. Ultimately, success on climate-trade cooperation depends on revitalizing the multilateral trading system itself. Businesses are already driving the clean energy transition through innovation—governments must remove trade barriers, create predictable rules, and scale public-private collaboration to accelerate progress.

Valérie Picard *is Head of Trade at the International Chamber of Commerce (ICC).*

Ambitious Climate Action Urgently Needs International Cooperation Across Clean Energy Value Chains

Peter Wooders & Tom Moerenhout

The rapid transition to clean energy relies on resilient value chains for renewables, batteries, electric vehicles, and grids. Along with usual supply chain concerns such as logistics and diversity, countries are also looking to increase their local production in what are rapidly growing sectors. They may also have concerns around supply chain concentration or sourcing. This commentary reviews the options countries have in increasing local production of clean energy goods and services and the policy options to support them. It concludes that formal and informal international cooperation across clean energy value chains is key if climate mitigation is to be ambitious.

The Rapid Transition to Clean Energy Relies on Resilient International Supply Chains

Rapid transition to clean energy across our economies is essential for meeting climate change targets. Commitments and plans are in place, including the global pledge to triple renewable energy capacity globally by 2030 [clause 28 (a)] made at the 2023 UN Climate Change Conference (COP28), commitments to end the sale of new gasoline and diesel cars by 2035 made by the EU and other jurisdictions, and a whole host of national government and corporate plans (for example a corporate commitment to using 100% renewable electricity).

The news is full of articles describing plans to extract more lithium and other critical minerals, build new factories to produce the batteries which drive electric vehicles (EVs), and support the manufacture and deployment of solar photovoltaic (PV) and wind (for example the US Inflation Reduction Act (IRA) and the European Green Deal).

While a good first step, these plans are insufficient without implementation. The clean energy transition needs all renewable project developers and EV buyers, throughout the world, to be able to get the clean energy goods and services they need—at good prices and without unacceptable delays—now, next year, and in five years. For this, we need resilient international supply chains.

Resilient Clean Energy Value Chains Supporting Climate Action Must Also Account for Local Manufacturing Ambitions and Geopolitical Tensions

Clean energy supply chains are complex and interdependent, crossing many borders. These supply chains face the usual resiliency challenges, including, for example: higher costs of raw materials and other key inputs; unexpected closures at key factories; transport unavailability and rising costs; labour disputes; lack of availability of project developers and installers; weather-related disruptions; and investment shortages in new capacity.

The case of wind is instructive. The Global Wind Energy Council (GWEC) notes that bottlenecks are already present in parts of the global wind value chain (for example the availability of rare earth minerals in Europe and North America) and are becoming more severe in inputs such as gearboxes and castings as well as workforce

availability. The International Energy Agency is among the organizations taking an increasing interest in critical minerals, and its Global Critical Minerals 2024 Outlook concludes that "today's well-supplied market may not be a good guide for the future, as demand for critical minerals continues to rise."

Beyond these considerations, there are two other specific challenges which may put the timely supply of clean energy goods and services at risk.

First, the growing clean energy sector is an opportunity for countries to generate economic value through increased mining, mineral processing, manufacture, and project development. Although imports of solar panels, EVs, or critical minerals may be available, countries may look to restrict or make these more expensive in order to develop their own local capacity (see for example South Africa's plans to localize production across renewables in response to rising imports). Capacity may take several years to come online or may not be successful (see for example the problems currently being faced by the Northvolt battery manufacturing plant in northern Sweden).

Second, some countries have concerns about either the concentration of supply chains (i.e. too much reliance on a limited number of suppliers) or do not wish to import from certain countries because of concerns over trade imbalances or for geopolitical reasons (for example US concerns over unfair trade practices in China).

Restrictions on imports are likely to slow down the deployment of clean energy technologies and therefore constrain climate mitigation in the short term. In the longer term, efforts to increase local manufacturing may, depending on their success, increase global supply.

Political realities mean we face a trade-off. Resilient clean energy value chains are needed to support ambitious climate action. But they must also account for local manufacturing ambitions and for geopolitical tensions.

Understanding Clean Energy Value Chain Realities and Challenges

Solar PV deployment has been a huge success story in recent years, exceeding expectations and with high-quality panels available at competitive prices. Chinese manufacturers have built a dominant position and have rapidly scaled-up production to meet demand in their huge domestic market and increasingly for exports. Despite this growth, the profit margins of several major Chinese suppliers are currently low. India (from 2018) and the US (from 2012) have at times imposed significant import tariffs on Chinese panels, citing reasons including unfair competition (i.e. a view that production is and/or was subsidized).

Wind has a different dynamic, with a lack of standardization holding back profitability. Manufacturers across the world are still innovating rapidly while demand and production costs are both volatile, and regulatory requirements are often highly variable between different jurisdictions.

Expanding and strengthening electricity grids and storage is critical for increased renewables deployment. This expansion relies on large amounts of copper, aluminium, and steel and calls for higher levels of investment. The Covid-19 crisis showed that certain key components such as transformers can be in very short supply.

EVs are markedly different than traditional petrol- or diesel-powered cars, with some established manufacturers have serious concerns about their prospects. In Europe, demand for "traditional" new cars fell in 2024 and demand from key export markets, notably China, has weakened. Demand for EVs has not grown as quickly as expected and competition from China in particular is intense. After a split vote among its member states, the EU recently decided to impose additional import tariffs of up to 35% on Chinese EVs, with China

launching a dispute complaint against these tariffs at the World Trade Organization (WTO). In May 2024, the US increased its tariffs on imports of Chinese EVs to 100% as it looked to protect its industry.

While battery production must continue to be hugely scaled-up, there is currently excess global capacity and prices are on a strong downward trend. Coupled with rapid innovation in battery chemistry (for example LFP batteries do not require the nickel or cobalt that have been the subject of concerns around production capacity as well as how and where these minerals are mined), the barriers to entry for potential new producers are very high. Yet many countries still wish to expand their production, often motivated to become less reliant on imports.

Countries with critical mineral resources are actively looking to add value in addition to mining. For example, Indonesia bans the export of raw materials (ores containing the minerals), requiring that they must first at least be processed (i.e. the mineral extracted into a higher purity form). Within the most advanced economies, the US offers significant incentives for new mining and processing.

As noted, clean energy supply chains are inherently complex and interdependent. No country is self-sufficient across all of them, nor is any country able to fully control them.

Practical Options Where Countries Could Look to Increase Local Production

While markets for clean energy goods and services are growing rapidly and countries around the world have a strong desire to increase their share of the value created within them, where this capacity can be increased must be assessed carefully. Solar panel manufacture is relatively mature and competing with established manufacturers already producing at scale requires massive investment only available to the largest economies (for example India and the US). Even then, it may not be fully successful. Wind turbine blades and rotors are high-tech products and a number of established producers are competing in what remains a relatively small market, where links between local deployment and local manufacturing can be strong.

Battery and EV production also benefit considerably from economies of scale. While countries with mineral resources may wish to move further up the value chain, notably through processing, attracting investment and meeting local planning and environmental regulations are often significant challenges. Moving beyond processing into clean energy component manufacturing is not easy: local feedstock availability is only one factor influencing investment decisions to manufacture components.

Smaller economies with relatively low geopolitical influence have a different set of opportunities than larger economies. For all countries, options should focus on areas where they have comparative advantages, including existing capacity and supply chains in linked industries such as parts of mechanical or electrical engineering or semiconductor production. The key strategy is to build up existing linkages, rather than jump immediately into advanced component manufacturing. This strategy has allowed countries including Malaysia to become advanced component manufacturers.

Options should be evaluated against likely economic, environmental, trade, and geopolitical outcomes. Countries may wish to establish less profitable industries where they have concerns over supply chain concentration or do not wish to import from certain countries; but this could commit governments to long-term public support to keep these industries going.

Whether or not countries seek to increase local production, the deployment of renewables offers new job opportunities to all economies, ranging from project design to construction, operation, and eventual

decommissioning. There are typically more jobs in renewable power generation than in the fossil fuel generators they replace but in many countries there are capacity gaps in the services needed for project development, which need to be met by bringing in foreign expertise. Building a strong domestic services sector can lead to export opportunities.

Industrial Policy and Its Impacts

Industrial policy (i.e. government support to build domestic capacity in a particular industrial sector) is back in fashion. It is recognized that industrial policy has played a significant role in China's successes in clean energy markets including solar PV and EVs. The EU (Green Deal), India, and the US (IRA) are among countries actively intervening in clean energy value chains.

There is a vast literature on industrial policy, which shows that it is more likely to succeed if it is based on comparative advantage, is "horizontal" (i.e. supports several sectors) rather than "vertical" (i.e. focused on one particular sector, which brings inherent risks), and is linked to other aims and policies (for example energy policy). But the literature also shows that industrial policy is likely to result in higher local prices, lower availability, and less choice, and it can also trigger wider trade disputes. Studies have concluded that there is nothing special regarding clean energy sectors; industrial policy has similar challenges as in other sectors of the economy. Groups including the GWEC are advocating for regional industrial policy, which would build on existing regional trade and economic links. Finally, there is the view that while industrial policy may not work as hoped for, if a country does not look to support its clean energy sectors it will not gain market share.

"Green" subsidies, local content requirements, and import taxes are some of the measures commonly taken to bolster local industry against foreign competition. Within critical minerals, export bans, quotas and taxes, and local content requirements are relatively commonly employed. Countries may also seek to make investments more attractive through tax advantages or other mechanisms and may look to set up joint manufacturing or assembly plants with established foreign companies. They may further lobby for increased climate finance to help expand the money available for investment.

It is again important to evaluate the policy options against their likely economic and environmental impacts and how they might affect trade and wider international cooperation. The EU's complaint against Indonesia's export restrictions on nickel ore is an example of how tensions between importers and exporters can escalate, and we may see many more.

More widely, one country's industrial policy can undermine investment and development in other countries, especially if the country implementing the policy is large. Strong debate around the EU's Carbon Border Adjustment Mechanism (a charge levied on certain imports based on their carbon content) has shown the need to account for impacts on third countries and to minimize these by design, including through consultation during the policy design process.

International Cooperation Across Clean Energy Value Chains

Each country narrowly pursuing its own objectives will not result in the best outcome globally. Reaching such an outcome will require international cooperation, aiming to maximize global climate ambition—notably the amount of renewable electricity installed and EVs purchased—in both the short and long term. This cooperation should also aim to satisfy ambitions to increase local production and take account of countries' concerns regarding supply chain concentration and sourcing. There are clearly conflicts between these overall objectives and individual country ambitions. These could be resolved through either formal or informal routes.

Considering formal mechanisms, the large number of preferential trade agreements (PTAs) (there are over 350 PTAs plus thousands of bilateral investment treaties) increasingly include provisions relating to sustainable development and critical mineral access (for example the latest EU PTAs include critical mineral chapters). "Special and differential treatment" provisions can be used to favour production from developing countries, for example in the manufacturing of non-specialized components by smaller countries.

The WTO is increasingly focusing on resilient supply chains and its experience during the Covid-19 pandemic has lessons for clean energy. Discussions on industrial policy are also underway at the WTO; laying out principles as to what practices would be acceptable would be helpful (for example in the design of "green" subsidies). Finally, the WTO's core aim of keeping trade as free as possible internationally will generally be more supportive of climate ambitions than a more fractured system.

In addition, groups of countries are increasingly signing agreements around critical minerals, for example India and the US or the EU and partners through the launch of the Minerals Security Partnership Forum. China's Belt and Road Initiative has since 2015 been linking Chinese foreign investment to infrastructure development, including in mining and metals.

But these partnerships generally bring together like-minded countries. Informal dialogues would further look to bring together parties with opposing views or those in strong competition economically or geopolitically, including those economies with the most influence on clean energy value chains (China, the EU, India, and the US) and other key suppliers or consumers (for example countries in Southern Africa and Southeast Asia).

Informal dialogues would allow countries to better understand each other's positions and abilities to compromise, helping to avoid the more extreme and damaging policies and develop scenarios or approaches of mutual benefit. They would help set out the "rules of the game" within which private sector companies can cooperate, grow, and create value chain resilience through cross-border joint ventures and investment. Dialogues could be held on the fringes of international meetings (for example APEC, BRICS, G20) or in bespoke events in neutral venues (for example in Geneva, which has a long tradition of hoisting such initiatives).

In short, cooperation across clean energy value chains is urgently needed if we are to maximize climate action while taking into account the realities of national ambitions to increase local production and domestic sensitivities on acceptable supply chain concentration and sourcing.

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Enabling the Clean Energy Transition Through Trade and Cooperation

Carlos Kuriyama

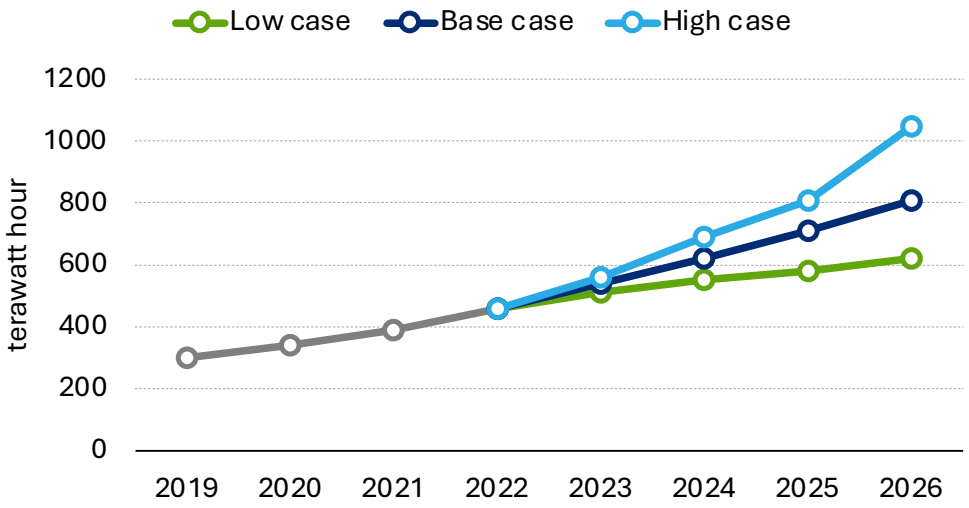
Renewable energy and new technologies are breaking the old trade-off between economic growth and environmental protection. But to scale the transition towards a cleaner environment, trade policies must help expand access to clean technologies and energy-efficient goods.

One of the longest-running debates in economic policy has centred on whether economic growth must come at the environment's expense. This narrative is starting to change. The rise of renewable energy and cutting-edge technologies is reshaping how we think about prosperity and sustainability.

The world is changing and becoming increasingly digital. The digital economy is embedded in our daily activities. Individuals and firms make money doing business through the internet, we talk to friends through apps, many of us do work and study with laptops, smart phones offer several alternatives to order food or get a taxi.

This transformation has an energy cost. Data centres, artificial intelligence (AI) applications and cryptocurrencies are all electricity-intensive, and their footprint is growing fast. The International Energy Agency expects that the global demand for electricity from digital activities will nearly double between 2022 and 2026, adding pressure to energy systems and underlining the need to scale up renewable resources. At the same time, technology companies must do their part by investing in greater energy efficiency across their operations.

Figure 1. Global Electricity Demand From Data Centres, AI, and Cryptocurrencies



Source: International Energy Agency (2024).

As the demand for electricity increases, achieving sustainability will require a more balanced energy mix—one in which renewables play a far greater role. This shift will also deliver broader benefits, particularly for sectors with a large carbon footprint.

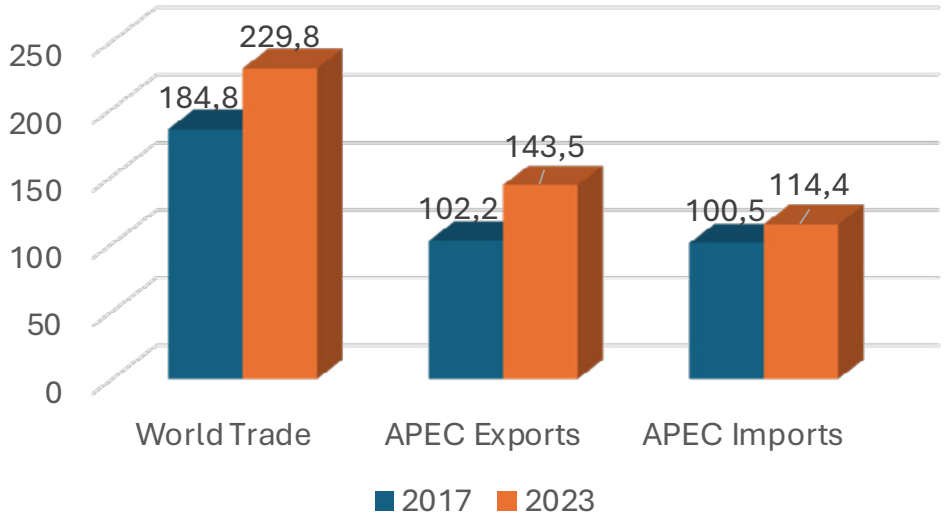
Transport is the second-largest contributor to global greenhouse gas emissions after electricity generation. Electric vehicles are becoming more visible in cities in the world, producing lower emissions than traditional combustion vehicles. But their sustainability gains are limited if the electricity that powers them continues to come from fossil fuel–based sources.

Trade Policy: A Tool to Promote Clean Energy

Certainly, promoting clean energy sources through trade is the right step forward. Within the Asia-Pacific Economic Cooperation (APEC) forum, a key initiative has been the APEC List of Environmental Goods, which reduced tariffs to 5% or less on 54 environmental goods. Of these, 15 are directly related to the generation of renewable energy, including those from wind, solar, biomass and geothermal sources.

The importance of renewable energy products in the APEC List of Environmental Goods is significant. Whilst those 15 goods represent 27.8% of the goods in the list, they account for around 48% of the APEC exports and 43% of the APEC imports from that list. Also, at the global level, their trade has grown significantly in recent years, reaching $229.8 billion in 2023.

Figure 2. Trade of Renewable Energy Products in APEC List of Environmental Goods ($bn)



Source: World Integrated Trade Solution.

Although reducing tariffs has improved accessibility of products to generate renewable energy, these products are still facing barriers to trade, as there is still a lot of work that needs to be done to eliminate non-tariff measures affecting trade negatively. Export and import formalities as well as quantitative restrictions affect their trade. Similarly, technical regulations could sometimes go beyond what is required to ensure safety and become a trade restriction.

Promoting goods that support renewable energy generation requires concerted efforts to eliminate both tariffs and non-tariff barriers. Some recent free trade agreements are making progress on the matter. For example, the agreement between New Zealand and the United Kingdom includes commitments to improve market access for 293 environmental goods. By clearly listing these products as environmental goods, the parties involved aim to build momentum for broader trade liberalization in this area, particularly within plurilateral and multilateral negotiations. This approach helps frame environmental goods as a priority for liberalization, paving the way for faster implementation, focused cooperation, and eventual global alignment on trade and sustainability goals.

Similarly, two APEC member economies, Singapore and Australia, have concluded the world's first green economy agreement, designed to promote economic growth while reducing emissions. The agreement covers 372 environmental goods and includes commitments to address their tariffs and non-tariff measures.

A Value Chain Approach to Support Clean Energy

Beyond reducing tariffs on environmental goods per se, any initiative could have a greater impact if it follows a global value chain approach, in which parts and components could also enjoy preferential treatment in markets, helping to reduce the cost of the final environmental goods.

The inclusion of "dual use" goods in environmental trade initiatives has sparked some debate, given that these products—such as pipes and pumps—can serve both environmentally-friendly purposes like water management and less sustainable ones, such as in the oil industry. Despite these concerns, extending preferential treatment to dual use goods remains a pragmatic approach. Their use in environmentally harmful activities can be more effectively discouraged through measures like targeted taxes or the removal of subsidies, rather than excluding them entirely from environmental trade initiatives.

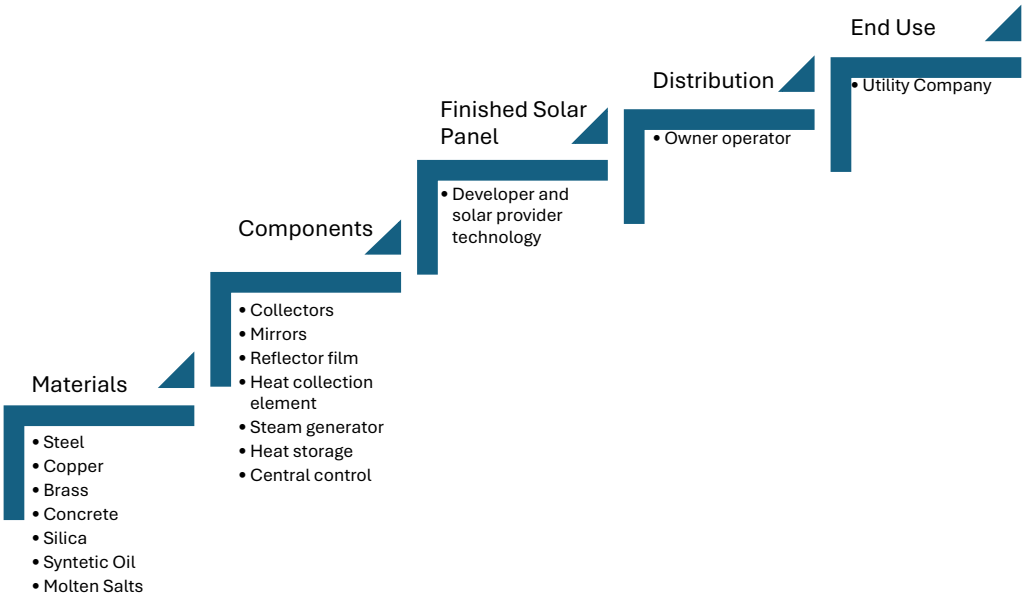
Many products used to generate renewable energy are highly complex and require thousands of parts and components. For instance, a wind turbine requires at least 8,000 different parts and components. Likewise, the solar industry relies on an intricate value chain to deliver solar panels that generate electricity for end users. Non-tariff measures such as local content requirements, trade remedies, and export or import restrictions, among others, can negatively affect wind turbine and solar panel producers by targeting not only the final products, but also their many underlying parts and components.

Delivering solar power to end users is not just about assembling parts and components, but also relying on specialized services providers. However, domestic regulations can limit or even block competitive foreign firms from participating in these services sectors, hindering innovation and reducing efficiency in solar energy deployment.

To unlock the potential of clean energy, governments should explore ways to streamline and support the operations of services that underpin renewable energy projects. One effective approach is to remove barriers that hinder the participation of firms specializing in this area, making it easier for them to contribute to the growth of the renewable energy sector.

There remains significant potential to better identify services that support cleaner and renewable energy projects. In this regard, the APEC Reference List of Environmental and Environmentally Related Services has identified seven services sectors that are beneficial for clean energy generation, such as general construction services of dams, power lines, and power plants, as well as engineering services for power plants, among others. The selection of these sectors was based on a study released by the APEC Group on Services in May 2021, which proposed a model list to guide discussions on regulatory barriers that hinder environmental services trade.

Figure 3. A Simplified Global Value Chain of the Solar Energy



Source: Adapted from Gereffi and Dubay (2008).

Driving Cleaner and Renewable Energy at the Global Level Through Trade Policies

Trade policies have a vital role to play in advancing the development of and access to cleaner and renewable energy. Bilateral, regional, and plurilateral free trade agreements and other initiatives on the green economy, climate change, and sustainability can help remove barriers to environmental goods and services. Nevertheless, sustainability challenges are global in nature and global solutions are essential. This is why multilateral cooperation remains critical to building a sustainable future.

In this context, regional organizations like APEC play important roles in shaping global sustainability efforts. They help build consensus among their members and present unified positions in multilateral discussions.

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** The views expressed in this paper are those of the author and do not represent those of the APEC Secretariat or the APEC member economies.*

Securing a Sustainable Future for All: Critical Minerals, Industrial Policies, and the Role of Trade and Investment Frameworks

Ieva Baršauskaitė & Isabelle Ramdoo

Critical minerals lie at the intersection of industrial ambitions, climate urgency, and geopolitical strategy. Yet, the trade and investment frameworks that govern them are misaligned with the realities of a just and sustainable energy transition. Aligning mineral security with climate and development goals is essential if the energy transition is to deliver shared prosperity rather than exacerbate global divides.

Minerals and metals are embedded in every aspect of modern life—from smartphones and transportation to food systems and energy infrastructure. While long essential to industrial development, a specific subset—critical minerals—such as lithium, cobalt, and rare earth elements have become indispensable to the technologies powering the energy transition in the pursuit of global climate goals, develop high-tech and digital technologies, and support defense systems.

The increase in demand—expected to surge several-fold over the next two decades—is outpacing current production and investment trends. This mismatch has elevated critical minerals from mere industrial inputs to geostrategic assets, prompting a wave of national policies, including stockpiling strategies, export controls, and resource diplomacy.

As a result, mineral security now sits at the intersection of foreign policy, trade negotiations, industrial and environmental strategies, and national security planning. Governments are reconfiguring alliances and trade frameworks to secure access, while competition over supply chains intensifies across major powers and regions.

For resource-rich developing countries, this shifting landscape presents a double bind. On one hand, they seek to leverage their mineral endowments to achieve domestic goals: local value addition, economic diversification, and broader development gains. On the other, they must respond to intensifying pressures applied by their trading partners to open up or redirect their exports—whether through trade rules, investor demands, or geopolitical realignments—often with limited bargaining power.

Navigating this dual challenge will require not only strategic vision and smart partnerships but also rethinking how trade and investment frameworks can support a more secure, inclusive, and sustainable global supply of critical minerals—on terms that serve both producers and consumers.

Growing Tensions Around Critical Minerals

New digital and green technologies markets have become economic and geopolitical battlegrounds for major economies aiming to establish their dominance. While flying lower under the radar, the defence sector's needs are only adding to existing frictions as the demand for advanced defence systems grows.

China has pursued a dual mineral investment strategy—inbound and outbound—positioning the country as both the largest mining investor and one of the most influential investors in critical minerals. Domestically, thanks to strong state support, China has systematically developed its geological exploration, mining, and processing capacity over several decades. Internationally, several decades of Chinese investments into critical mineral projects across the globe have reached almost $57 billion in aid and subsidized credit across 19 low- and middle-income countries, often prioritizing upstream extraction activities over midstream processing. This global reach has enabled China to become the world's largest importer of unprocessed critical minerals while also consolidating its dominance over refining and processing activities. Today, China controls nearly 50% of the global market value from refining, and supplies the rest of the world. This strategy, combining long-term outbound investments with robust domestic capabilities, has granted Chinese a strategic advantage across the entire value chain, especially in the electric vehicle sector, where it commands a dominant position in both upstream inputs and downstream manufacturing.

The fast rise of China's role in critical minerals value chains has left many major economies scrambling to catch up, as a new wave of industrial policies return en masse, with the use of industrial policy measures increasing ninefold between 2017 and 2023. The OECD estimates that the fiscal spending for green industrial policies adopted as part of COVID-19 recovery packages represented 3.2% of annual GDP in the United States and 3% in the European Union. Similar efforts have been undertaken in the digital sphere where, for example, the US adopted the CHIPS and Science Act in 2022, which the EU followed with its European Chips Act in 2023.

Boosting manufacturing of clean energy and digital technologies in the US and the EU will require substantially greater volumes of critical minerals for solar energy, wind power, semiconductors and other goods and technologies. Evidence also points to social acceptance headwinds and investment gaps for new mining projects, particularly in Europe, underscoring the need for diversified partnerships with producer countries.

The EU's Critical Raw Materials Act entered into force in 2024 and sets 2030 system-wide benchmarks: domestic extraction capacity of at least 10% of annual consumption, processing at least 40%, and recycling at least 25%, plus a cap that no single third country should account for more than 65% of EU consumption of any strategic raw material at any relevant processing stage. The EU has also concluded raw materials partnerships/ memoranda of understandings (MoUs) with Canada (2021), Ukraine (2021), Kazakhstan (2022), Namibia (2022), and Argentina (2023), and signed the EU–Chile Advanced Framework Agreement in 2023 (with provisional application from 1 June 2025).

Those agreements set out frameworks for cooperation on the sustainable and secure supply of critical raw materials, focusing on investment, integration into EU value chains, research and innovation, and environmental and social standards. They aim to diversify the EU's sources of critical raw materials while supporting partner countries in developing value-added processing and sustainable mining industries. It is important to note the unique context for each of these agreements, which depend on the EU trading partner's role in the supply chain as well as domestic circumstances and the geopolitical context. For example, the EU–Canada Strategic Partnership on Raw Materials aims to foster downstream and circular economy activities, while the EU-Namibia MoU focuses the strategic partnership on sustainable raw materials and green hydrogen, with special emphasis on developing Namibia's local value addition.

In the US, the now terminated conditions of the Inflation Reduction Act's clean vehicle credits tied eligibility to critical minerals extracted or processed in the US or in a US free-trade-agreement partner (or recycled in North America) and phased-in "foreign entity of concern" exclusions for battery components (2024) and applicable

critical minerals (2025). Washington, however, still leads the Minerals Security Partnership, established to de-risk responsible mining and processing, and—through the Quad—has elevated joint work on resilient critical-mineral supply chains, including a 2025 commitment dubbed the "Quad Critical Minerals Initiative". This initiative is a joint effort to secure and diversify critical mineral supply chains—coordinating standards, investment, and recycling—to reduce over-reliance on any single supplier.

Both the US and the EU also want to onshore processing and value addition of minerals, putting their interests in—potentially—direct competition with developing countries.

Industrial Policy Priorities for Mineral-Rich Developing Countries

For many resource-rich developing countries, industrialization remains the central pathway to sustainable development. The renewed push for resource-based industrialization—including in critical minerals like lithium, cobalt, and nickel—is driven by three core objectives: to generate employment, to diversify and upgrade domestic industry, and to secure a strategic position in global value chains that are being reconfigured by the green and digital transitions.

> As demand for energy transition minerals accelerates, developing countries risk being trapped in the role of raw material exporters, missing another opportunity to climb the value chain.

The urgency is real. As demand for energy transition minerals accelerates, developing countries risk being trapped in the role of raw material exporters, missing another opportunity to climb the value chain. Historically, resource-based development has yielded mixed results. The "resource curse" narrative emerged in part because many countries failed to create domestic linkages or foster learning and technological upgrading. However, the successes of countries like Indonesia (nickel refining), Malaysia (palm oil downstreaming), and Chile (copper-related services) show that industrialization linked to natural resources is possible with the appropriate institutional arrangements, policy mix, and market conditions.

Industrialization today is far more complex than in the past. It extends beyond manufacturing to include services, data, digital platforms, and advanced technologies like artificial intelligence and automation. It is embedded in global value chains, shaped by intangible assets, and driven by innovation and network effects.

Yet many policy responses still rely on a conventional toolbox: export bans (e.g. Indonesia's nickel ore), local content rules (e.g. Zambia), performance-based incentives, or public equity stakes (e.g. Ghana's Minerals Income Investment Fund). These instruments remain important for capturing value and asserting national interests. However, their effectiveness may be increasingly limited in a globalized, services-embedded, and innovation-driven industrial landscape.

Moreover, some instruments may conflict with international trade and investment agreements that limit the use of policy space—particularly around performance requirements, technology transfer, and market access.

This disconnect reveals a deeper challenge: while the structure and logic of industrialization has evolved, questions arise around whether current industrial tools are fit for purpose and the extent to which the rules of the multilateral trading system are sufficient or adequate.

In addition to legal constraints, structural challenges remain steep. Many countries face infrastructure deficits, unreliable and costly energy, limited access to long-term finance, skills shortages, fragmented domestic markets, weak coordination across agencies, and lack of access to proprietary technologies. These are not just "capacity gaps"—they are structural features of global inequality and must be addressed through coherent development strategies, not isolated reforms.

Moreover, resource-based industrialization must now navigate a complex geopolitical dilemma. On the one hand, domestic imperatives call for higher value addition and development benefits. On the other, international partnerships increasingly reflect competing industrial goals of advanced economies—many of which lack critical mineral deposits but seek to reshore manufacturing and secure supply chains. The global push for clean technologies must not come at the cost of development ambitions in the Global South. Instead, trade and investment frameworks must be reimagined to reconcile global public goods—like climate goals—with inclusive industrial development.

Ultimately, resource-based industrialization is not about resisting globalization, but about reshaping it to serve broader development objectives. For resource-rich countries, the challenge is not just how to extract more minerals—but how to extract more value from them.

The Role of Trade and Investment Agreements

The mismatch between the growing demand for critical minerals in developed countries and their supply concentration in developing economies raises questions about how trade and investment frameworks can reconcile the seemingly conflicting goals of securing supply for net importers and the sustainable development objectives of mineral producing developing countries. The International Institute for Sustainable Development (IISD) has reviewed over 100 agreements and MoUs, including case studies of Chile, Indonesia, and the Democratic Republic of the Congo (DRC), exploring the tensions and opportunities in minerals governance.

Diverging priorities underpin negotiations. Exporting countries aim to maximize value addition through local processing and industrialization, while importers seek stable and affordable access to raw inputs, including through reshoring or friend-shoring where possible. Although both sides increasingly point to the importance of environmental, social, and governance (ESG) concerns, most agreements contain weak, non-binding language.

Free trade agreements have begun incorporating mineral-specific provisions, particularly in EU trade and investment partnerships. The EU-Chile framework agreement preserved a dual pricing policy for lithium, while Indonesia retained its right to use export restrictions beyond WTO commitments in its agreement with the EU, reflecting the growing leverage and negotiating clout of exporters.

Old-generation international investment agreements (IIAs) prioritized investor protection, constraining policy space and ESG reforms. Many remain active, exposing states to costly investor–state dispute settlement claims. New-generation IIAs aim to balance protection with host state policy autonomy, sometimes embedding ESG standards. Chile has renegotiated IIAs to exclude lithium and Indonesia has terminated restrictive treaties to reduce litigation risks, however the DRC remains bound by outdated IIAs. Regional frameworks like the African Continental Free Trade Area provide development-oriented innovations through its Protocol of

Investment, such as subjecting investment-enhancing provisions to various ESG values rather than making them hierarchically superior, or including a full chapter on sustainable development-related issues that contains provisions designed specifically to address economic development spillovers of foreign investment.

Recently, MOUs have proliferated as new flexible tools for cooperation—used by the EU, US, and China among others—to diversify supply and mitigate geopolitical risks. Yet their impact is uncertain: Chile's EU MoU seems to have focused on private-sector dialogue, and the EU–DRC MOU on academic exchanges. Their ESG commitments are generally vague and implementation mechanisms weak, reducing their transformative potential.

Moving forward, for mineral-rich developing country exporters, reforming or terminating restrictive IIAs and embedding binding ESG provisions in new agreements could be crucial, whereas the importers should frame concessions for local processing not as losses but as investments in resilient supply chains.

The governance of critical minerals is at a turning point. With demand projected to increase up to six times the current level by 2050, trade and investment agreements can either perpetuate extractive asymmetries or foster equitable, ESG-aligned supply chains that support both the energy transition and just development.

A Rebalancing

Critical minerals lie at the intersection of industrial ambitions, climate urgency, and geopolitical strategy. Yet, the trade and investment frameworks that govern them are misaligned with the realities of a just and sustainable energy transition. Without reforms, there is a real risk of perpetuating extractive asymmetries locking developing country producers into low-value production structures, while leaving importers exposed to fragile supply chains.

A rebalancing is both necessary and possible. Recent agreements demonstrate that embedding binding ESG provisions, rethinking approaches to local value addition, and reforming investor-state rules can create space for more sustainable and equitable mineral value chains. Aligning mineral security with climate and development goals is essential if the energy transition is to deliver shared prosperity rather than exacerbate global divides.

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Trading Africa's Green Minerals at a Crossroads: A Call for Regional Coordination

Marit Y. Kitaw & Yasmin Ismail

Africa's critical minerals offer more than a path to economic development and diversification—they present a historic opportunity to recalibrate the continent's role in global trade, climate action, and green industrialization. African countries should aim to leverage growing competition among their international partners to unlock expanded development opportunities across the continent. To achieve this, it is urgent to shift to a concerted and purposeful regional approach to trade diplomacy in green critical minerals.

In the race to triple renewable energy capacities by 2030, the global demand for critical minerals is surging. Copper, cobalt, nickel, lithium, rare earth elements, and platinum group metals are essential to renewable energy systems, electric vehicles (EVs), green hydrogen, and other technologies that enable decarbonization. The International Energy Agency predicts that EVs and their associated production of batteries will be responsible for about half of the demand growth for critical minerals over the next two decades. Africa is home to over 30% of the world's known reserves of these minerals, and numerous major economies are competing to secure access to the continent's reserves (see here, here, and here).

Harnessing the Surge: Africa's Trade Dilemma in a New Era of Critical Minerals

In their quest to secure access to critical minerals to meet a range of net zero, national security, and competitiveness priorities, major economies are deploying a range of diplomatic strategies and types of economic arrangements with African countries. The United States, for instance, has signed a joint Memorandum of Understanding (MoU) with the Democratic Republic of the Congo (DRC) and Zambia for the development of value chains for battery-grade materials and is seeking to deepen its cooperation on minerals supply with other African countries through its Minerals Security Partnership Forum. The European Union has also signed separate MoUs with the DRC and Zambia and is exploring Critical Raw Materials partnerships with a number of African countries framed under its Global Gateway Initiative, with a focus on securing supply and improving governance and sustainability. The EU has also introduced a new trade approach in the form of Clean Trade and Investment Partnerships, through which it seeks partnerships on critical minerals supply and green energy transition, and has initiated talks on this with South Africa.

In addition, China, long a dominant player in Africa's mining sector, continues to secure off-take agreements and infrastructure-for-resources deals, especially in the cobalt-rich DRC and in lithium projects in Zimbabwe. Further, Saudi Arabia and other Arab Gulf countries have also stepped up their engagement with resource-rich African countries to secure access to critical minerals for renewable energy projects.

Together, these developments underscore that the African continent finds itself at a critical juncture: poised between continuing to be locked into raw materials extraction and realizing the transformative sustainable development opportunities available from a green industrial revolution. The opportunities for African

development cannot be confined to supplying critical minerals to support producers of value-added products outside the continent, but must involve developing regional and extended value chains that are capable of transforming Africa into a hub for green industrialization and supporting regional economic diversification.

> These developments underscore that the African continent finds itself at a critical juncture: poised between continuing to be locked into raw materials extraction and realizing the transformative sustainable development opportunities available from a green industrial revolution.

Zooming In: Institutional Coordination and the Africa Green Minerals Strategy

At the institutional level, Africa has made commendable progress in articulating a shared vision for leveraging the continent's mineral endowment as a tool to support green industrialization. Africa's Green Minerals Strategy (AGMS), developed by the African Union's African Minerals Development Centre, in collaboration with the African Development Bank, United Nations Economic Commission for Africa (UNECA), and African Legal Support Facility, serves as a blueprint for harnessing Africa's mineral wealth to advance sustainable development, value addition, and climate goals. It builds on the Africa Mining Vision, adopted in 2009, which aligns mineral development with the continent's aspirations for structural transformation.

The AGMS identifies shared priorities at both national and regional levels, including responsible sourcing, beneficiation, value addition, use of local content, harmonization of regulatory frameworks, and capacity building. It calls for integrated planning of infrastructure and regional industrial corridors to support mineral processing and green manufacturing. Moreover, the strategy highlights the importance of cross-cutting issues such as gender inclusion, the role of artisanal and small-scale mining, and environmental sustainability. These recommendations were echoed in the seven principles and five actionable recommendations of the 2024 UN Secretary-General's Panel on Critical Energy Transition Minerals.

Adopted in February 2025, the implementation of the AGMS is still in its infancy. While some African countries and Regional Economic Communities (RECs) have begun aligning their national mineral strategies with the AGMS, there is still no consolidated platform for collective engagement with external actors. This results in fragmented negotiations with both governments and the private sector, which may weaken Africa's leverage on critical issues, including technology transfer, mineral pricing, and commitments for beneficiation and value addition.

To overcome this challenge, Africa needs a regionally coordinated approach or strategy for external engagement on critical green minerals, built around the AGMS. Central to such a strategy could be a shared negotiating framework for supply agreements and investment arrangements to promote value addition,

effective legal instruments with harmonized approaches, co-development and affordable access to needed technologies, establishment of required infrastructure, and advancement of social and economic development for local communities.

A Way Forward: Coordinated Approach to External Engagement on Critical Green Minerals

To ensure Africa's green minerals benefit the continent first, a clear set of regional principles for external engagement is needed—anchored in transparency, shared benefits, value retention and addition, environmental justice, and technology transfer. These principles agreed upon by African countries, particularly resource-intensive countries, can serve as a framework in bilateral, regional, and multilateral negotiations on critical green minerals. Africa should adopt a common stance on value addition, benefit sharing, pricing models, contract terms, traceability, and ESG standards—ensuring no African country is isolated in its agreements. Drawing lessons from OPEC's collective approach to oil governance, an African platform for critical green minerals diplomacy can enhance negotiation power, avoid underpricing, and align external partnerships with the continent's industrialization goals.

> To ensure Africa's green minerals benefit the continent first, a clear set of regional principles for external engagement is needed.

From a vision and strategy perspective, the Africa Mining Vision and the AGMS already provide policy alignment. What is needed now, however, is a fast-tracked coordination and implementation mechanism that leverages existing bodies. The African Union Commission, the African Continental Free Trade Agreement (AfCFTA) Secretariat, UNECA, and other relevant institutions can co-host a continental coordination task force on green mineral diplomacy. Through the AfCFTA and RECs, African states can define minimum negotiation standards and incentives for responsible investors, harmonize ESG standards, and promote regional mineral corridors. Institutions such as the African Development Bank, Afreximbank, and the African Legal Support Facility can support these efforts through policy coordination, investment de-risking, and industrial policy innovation.

These institutions and coordination efforts should be actively engaged with and informed by communities of practice across the continent. A pan-African critical minerals negotiations advisory group—comprising miners, trade policy experts, trade lawyers, industrial policy experts, and ESG specialists—could be established to offer member countries' negotiators strategic insights on relevant stakeholder needs and concerns, as well as emerging global and regional trends in green minerals value chains.

Conclusion: Reclaiming the Narrative

It is urgent to shift from fragmented national engagements with powerful global players to a concerted and purposeful regional approach to trade diplomacy in green critical minerals.

Africa's critical minerals offer more than a path to economic development and diversification—they present a historic opportunity to recalibrate the continent's role in global trade, climate action, and green industrialization. African countries should aim to leverage growing competition among their international partners to unlock expanded development opportunities across the continent. To achieve this, it is urgent to shift from fragmented national engagements with powerful global players to a concerted and purposeful regional approach to trade diplomacy in green critical minerals.

The AGMS provides a foundation. What is needed now is collective ambition, institutional innovation, and an empowered African-led knowledge community.

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Improving Environmentally Sound Trade Through Economic Diplomacy: The Role of Standards

Greg Messenger

From production methods, supply chain analysis, the assessment of greenhouse gas emissions, and labelling of goods to advertising of services, standards play a central role in ensuring that environmentally sound trade is accessible, supported, and trusted. While economic diplomacy in the pursuit of such trade has focused on liberalization or (to a lesser degree) regulation, by engaging actively in the standards space, governments can support meaningful climate and environmental outcomes.

The pursuit of environmentally sound trade has become a priority for governments and core part of the economic diplomacy of many, pursuing their policy objectives through multiple institutions of trade and economic coordination. World Trade Organization (WTO) members have continued discussions at the Committee on Trade and Environment (CTE) and through the Trade and Environmental Sustainability Structured Discussions (TESSD) to facilitate "greener" trade (for example, mapping hydrogen value chains). At the same time, many have pursued environmental goods and services (EGS) liberalization through free trade agreements (FTAs) like the New Zealand–United Kingdom FTA with its prioritization of EGS, or other non-WTO plurilateral efforts such as the recently concluded Agreement on Climate Change, Trade, and Sustainability (ACCTS).

Others still have pursued active unilateral liberalization, such as the UK's post-EU global tariff, which includes the removal of tariffs on over 100 environmental goods. At the same time, some WTO members have increased the rigour of their supply chain due diligence requirements (for example on forest-risk commodities) or their assessment of the carbon liabilities of goods through internal carbon taxes and, in some cases (such as the EU and UK), border carbon adjustments.

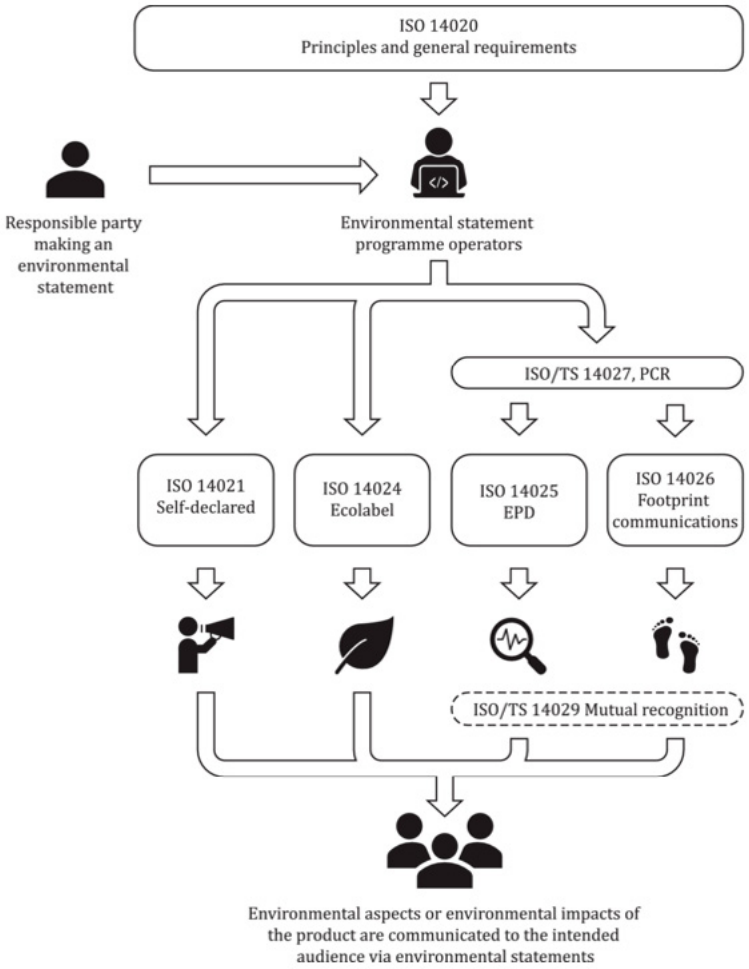
As businesses and policymakers seek to fashion more environmentally sound supply chains, the means to determine what is truly green and what is greenwashing becomes harder. From production methods, supply chain analysis, the assessment of greenhouse gas emissions, and labelling of goods to advertising of services, standards play a central role in ensuring that environmentally sound trade is accessible, supported, and trusted. While economic diplomacy in this field has focused on liberalization or (to a lesser degree) regulation, without standards meaningful environmental outcomes will be inevitably limited.

The Role of Standards in Environmentally Sound Trade

Underpinning global trade, hidden from plain sight, is the critically important role of standards—in essence documents that set out best practice. Standards may relate to goods, services, or organizations. For example, the International Organization for Standardization (ISO) has developed a suite of standards to identify best practice for the development of different types of environmental claims that are made— whether by the producer themselves (self-declared), in accordance with set criteria and verified by a third-party (ecolabels), or quantifying environmental information of the product (environmental product declarations – EPDs). Figure

1 illustrates the structure of the ISO 14020 family of standards, which provide principles and requirements for communicating environmental aspects and potential environmental impacts of products.

Figure 1. Structure of the ISO 14020 Family of Standards



Source: ISO 14020:2022 (3rd ed).

Standards cover both the general (as above) but also the specific: they include guidance on what species of fish can be called sardines when canned, the maximum residue limits of pesticides on specific crops, a series of standardized paper sizes including the near-ubiquitous A4, or how to calculate what your businesses carbon emissions are and how to set up and run environmental management systems. Some standards are developed through formally recognized national standards bodies or regional or international standards bodies. Others are developed by groups of private stakeholders—sometimes businesses (e.g. commercial standards like 5G) or nongovernmental organizations (e.g. the Forest Stewardship Council – FSC).

Whether public or private, standards though useful can be contentious. Public processes of standardization are historically slow, exacerbated by the consensus based decision-making process of standardization. And while standards bodies aim to include multiple stakeholders, they are often dominated by economic actors (logically

as they are usually the principal consumer of the standard). This additionally leads to criticisms that they are "low-ambition" when it comes to non-economic interests such as the climate or public health. Meanwhile, private standards, especially voluntary sustainability standards, can be of high quality and well-respected, yet there are many of them and limited mechanisms to govern their creation or criteria (the EU's Green Claims Directive is a notable exception). As such, voluntary sustainability standards are often criticized for being complicit in "greenwashing" or presenting unreasonably restrictive requirements for less well-resourced producers and thus reducing development opportunities for some of the world's poorest.

Government's role in the standards space is limited, but not absent. The intergovernmental trade regime, most notably the WTO, encourages the use of formal (public) standards through a set of incentives: legal obligations to use internationally agreed standards as the basis of mandatory product requirements (Art. 2.4 of the Agreement on Technical Barriers to Trade – TBT Agreement) and a related presumption that government measures are no more trade restrictive than necessary to meet their legitimate objective (Art. 2.5 of the TBT Agreement). However, while this encourages engagement with the international standards infrastructure, it only relates to public international standards. The increase in private standards in the environmental space, especially ecolabels, has raised concerns that trade rules are silent on private measures that may nonetheless impede producers' access to export markets (an issue raised formally at the WTO in the context of agrifood private standards for over twenty years).

Recently, governments have moved to bridge this gap: FTAs increasingly include provisions to cooperate on the development and application of ecolabels (e.g. UK – New Zealand FTA Art. 22.17.3), and the ACCTS includes Guidelines for Voluntary Ecolabelling Programmes (Article 5.4) that set out exactly the features to which all bodies developing ecolabels should aspire—ensuring that the ecolabels are accurate, do not mislead, are based on evidence, are no more burdensome to comply with for business than necessary, non-discriminatory, evidence-based, and so on.

There are limitations however. As noted, these ecolabels are rarely developed by governments or governmental bodies (including national standards bodies). As such, governments can work to encourage the improvement of ecolabelling within their territories but that is as far as they can go. And while the guidelines note that ecolabels "should be aligned with relevant international standards, recommendations or guidelines, support harmonization of best practices and avoid duplication with international standards and international instruments" they are not required to do so.

Improving Access to Quality Standards

What could be done? An attempt could be made to insist on standards being developed within the traditional public standardization system (national, regional, and international standards bodies). However, this is not feasible given the lack of responsiveness of many of these bodies, their structural preference for (often) catering to the demands of economic actors without factoring in negative externalities, or their decision-making procedures which disincentivize civil society to sign up to "low-quality" standards. And further, the ship has sailed in many areas of environmental policy: in forestry management, for example, for decades the dominant standards are voluntary sustainability standards (FSC and PEFC). There is little appetite to develop new "public" international standards to replace them as, for their imperfections, they are largely well-regarded.

This is not a counsel of despair, however. The underlying standards infrastructure must be strong, accessible, and encourage high ambition in relation to climate and environmental standards while recognizing and

responding to interests of all relevant economy actors—especially developing country producers. Governments can play a key role in supporting this process by leveraging their convening power to facilitate the development and adoption of high quality standards. Rather than agreeing to formal new trade instruments, this is instead a prioritization of the practice of economic diplomacy to drive the development and accessibility of improved standards.

We have existing examples to draw on: confronted by the need for fast and inclusive instruments to support climate policies, Our 2050 World (a collaboration between the ISO, Race to Zero initiative, and the UNFCCC Innovation Hub, convening over 1200 organizations and individuals from over 100 countries) led the development of the ISO Net Zero Guidelines providing common language and shared definitions around net zero.*

One of the reasons why the ISO Net Zero Guidelines have had considerable reach is because they are freely available, unlike most standards which must be purchased. To shift this dynamic, the UK national standards body, the British Standards Institution (BSI), recently developed and published a freely accessible Code of Practice for net zero transition plans for small and medium enterprises (SMEs) (BSI Flex 3030 v2.0:2024-12). Much like the ISO Net Zero Guidelines, while not formally a standard against which one could test, this code of practice nonetheless provides a valuable resource for SMEs to develop their net zero plans. It references both public (BSI and ISO) standards as well as the key private standards (most notably the Greenhouse Gas Protocol).

Another example of the influence of collaborative (public and private) standards instruments that can be made freely available includes the UK Forestry Standard, which is a single accessible document setting out the different regulatory and legal requirements for forestry managers in the UK's different jurisdictions as well as best practice targets (for example on biodiversity). It is designed to overlap with requirements of key private voluntary standards schemes in forestry management so that users can have confidence in their management practices and ability to certify for both.

The Kenya Bureau of Standards has also developed a standard (KS 1758-2:2016) setting out requirements for legal compliance, responsible procurement of inputs, safe production, handling, and marketing of fresh fruits, vegetables, herbs, and spices. Currently being revised, KS1758 reflects commonly used GLOBALG.A.P standards, which, while a private voluntary standard scheme, is highly influential, with many retailers requiring compliance with GLOBALG.A.P as a condition of purchase.

Placing Standards at the Heart of Economic Diplomacy

What lessons can governments take from these examples? There are formal institutions of trade policy where governments can support the development of collaborative projects, much like the ACCTS guidelines. They could seek to adopt these guidelines or confirm agreed positions on key standards, guidelines, or codes of practice, through their FTA committees or indeed at the WTO as a Decision (mostly likely at the CTE or, ideally, the TBT Committee). This would improve coherence within the trade landscape, aligning the standards and public governance structures on these issues. It would also provide an additional space in which to discuss the implementation, monitoring, and improvement of the substance of instruments, such as the ACCTS guidelines, and share best practices.

Most importantly, by mainstreaming standards within the economic diplomacy of governments for environmentally sound trade, they could pursue a multi-institutional strategy to tackle the three hurdles for less-resourced businesses: access to standards, certification costs, and access to investment.

To improve access to standards, which for smaller economic actors entail significant costs, governments could work in multiple fora—for example, a G20 statement confirming the creation of an Inclusive Standards Group (convened by governments but comprised of national standards bodies, key voluntary standards schemes, civil society, and businesses) to develop new accessible standards would be valuable. Commonly agreed and freely accessible standards, tailored to SMEs (in the North and South), along the model of the ISO Net Zero Guidelines or BSI Flex 3030, would provide a helpful starting point and support for businesses that want clear and accessible standards to meet—and benefit from—new climate-related trade policy instruments. By removing the entry barrier of cost, this would support more consistent improved practice (whether in production, monitoring, reporting, or elsewhere) and align business practices with the requirements of different certification schemes.

> Mainstreaming standards within the economic diplomacy of governments for environmentally sound trade could tackle the three hurdles for less-resourced businesses: access to standards, certification costs, and access to investment.

Where standards focused on environmentally sound trade are made freely available, certification will still be required for many of these standards. Certification is a potentially costly process that disincentivizes SMEs from taking part in global value chains. At the WTO, members could support an expansion of the Standards and Trade Development Facility (STDF) to include climate-supportive (TBT) standards, which would allow key stakeholders in the international standards space to engage through the facility. Meanwhile, at the unilateral and regional levels, governments could use their development projects, aid for trade schemes, and other programmatic spending to support investment in certification, helping to reduce these barriers.

Finally, to support investment, and help mitigate the increasing risks and costs presented by unilateral trade-related measures linked to climate or the environment (such as border carbon adjustments or the EU Deforestation Regulation), governments could further strengthen the effect and impact of standards by explicitly referencing them in new regulatory requirements—for example by presuming compliance with elements of due diligence legislation on deforestation should businesses meet the requirements of these standards.

By reducing costs for businesses—without lowering ambition for climate targets—open, accessible, and development-friendly standards could play an important role. While it would not be for governments to develop these standards, through the practice of economic diplomacy they could improve their reach and impact, driving a more inclusive green global economy.

* On the ISO Net Zero Guideline: see Jones, E., & Messenger, G. (2023). TaPP Insights: Net Zero and UK Trade (2023); and on using FTAs to support their uptake, see Messenger, G. (2025). Free Trade Agreements as Sites of Economic Diplomacy: Agreeing Common Standards for Sustainable Development.

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Fostering Cooperation on Green Industrial Policies

Why the EU's Clean Industrial Policy Cannot Work Without Real Partnerships

Sarah Jackson

As the EU gears up to safeguard its competitiveness and resilience, including through Clean Trade and Investment Partnerships, the risk of turning inward at the expense of partnerships and climate diplomacy should not be underestimated.

Sparked by the US Inflation Reduction Act and following decades of strategic investments in clean tech industries by China, clean industrial policy is now at the centre of the European Union's climate and economic strategy. With the EU Clean Industrial Deal, Brussels aims to secure a clean industrial base, scale up manufacturing of clean technology, and strengthen supply chain security in response to shifting geopolitical dynamics. But while the EU gears up to safeguard its own competitiveness and resilience, the risk of turning inward, at the expense of partnerships and climate diplomacy, should not be underestimated.

The EU cannot decarbonize alone. It needs critical raw materials, clean tech, and clean energy, some of which will need to come from outside its borders. Meanwhile, many countries, from Chile to Namibia and Brazil, are pursuing their own green industrial strategies. Others, especially those with limited fiscal space and high vulnerability to climate impacts, may fall behind rich countries in a world of heavily subsidized green industrial policies. That is where the EU's Clean Trade and Investment Partnerships (CTIPs) come in.

Clean industrial policy is now at the centre of the European Union's climate and economic strategy.

From Fragmentation to Coordination

The CTIPs mark a shift in how the EU approaches partnerships. Announced as part of the external dimension of the Clean Industrial Deal in February, they aim to "foster cooperation on energy technology and policies for the clean transition, and support decarbonisation efforts in partner countries." More pointedly, they aim to secure reliable access to critical raw materials, clean energy, and clean tech.

This is a welcome recognition that the EU's web of partnership offerings has often been fragmented, incoherent, and difficult to navigate for partner countries. In recent years, various parts of the European Commission pursued their own partnership agendas: Directorate-General (DG) GROW launched Strategic Partnerships on Critical Raw Materials; DG CLIMA signed Green Alliances; DG TRADE integrated climate

clauses into free trade agreements; and DG INTPA advanced Global Gateway projects, in addition to the Just Energy Transition Partnerships—all often with little coordination. As a diplomat from a partner country once quipped: "The Chinese give us an offer we can't refuse. The EU gives us an offer we can't understand."

CTIPs aim to address past shortcomings and offer a more integrated and strategic approach aligned with European and partner country priorities. But turning this vision into impact will require more than relabelling existing initiatives or combining fragmented tools.

The Clean Trade and Investment Partnerships aim to offer a more integrated and strategic approach aligned with European and partner country priorities.

Ensuring Success for the First CTIP With South Africa

The EU launched the first CTIP with South Africa in March 2025, less than one month after the release of the Clean Industrial Deal. The announcement was linked to the launch of a Global Gateway Investment Package worth €4.7 billion, including €303 million in EU grants and loans from EU institutions and development banks. This aims to support South Africa's just transition and clean industry build-out, particularly on green hydrogen, critical raw material processing, renewables and clean tech jobs. The package also includes investments in connectivity infrastructure and strengthening vaccine production in South Africa.

For the CTIP to succeed and to set a precedent for future partnerships, it must start with four critical shifts, grounded in key principles and learnings from past missteps:

- The CTIP must reflect shared priorities, not just the EU's supply needs for the clean transition. Europe can learn from previous mistakes from its extractive foreign policy that reduced partners to mere raw material exporters and instead invest in a more equitable approach that supports South Africa's own industrial and socio-economic development goals. The CTIP should help build green value chains in South Africa, not just to Europe, through local processing, refining, and manufacturing, alongside skills training and workforce development.
- The EU can establish structured and inclusive stakeholder dialogues, both in partner countries and within Europe to reinforce buy-in. Civil society, trade unions, the private sector, investors, and local industry must be involved from the start. A DG Trade Civil Society Dialogue on CTIPs, modelled on those used in trade negotiations, could offer transparency and trust-building, which are key ingredients for long-term cooperation to avoid a short-term vision.
- To be credible, the CTIPs must come with new and real resources, not recycled announcements or rebranded projects. That includes investments in sustainable trade infrastructure (e.g. port upgrades) and co-development of standards on clean supply chains, among other priorities. Additionally, the EU

can support the facilitation of private investments through giving confidence to European investors, for example through offtake agreements.

- Coordination is essential. The CTIP must have high-level political leadership and coherence across European Commission DGs and member states to learn from past mistakes with partnerships. A Team Europe approach means aligning bilateral deals with collective EU priorities and clearly linking CTIPs to tools like clean procurement, industrial incentives, and trade policy.

The Way Forward for CTIPs: Balancing Building Trust and Speed

If the EU gets it right, it can help set a new global standard for how trade, investment, and decarbonization can work together and secure new partners.

One advantage of CTIPs is that they are not constrained by the lengthy timelines of free trade agreements. But rushing to announce new partnerships without delivering on existing ones risks damaging credibility. The EU must strike a balance: move fast enough to stay relevant, but deep enough to build trust.

Equally, the EU must be honest about the political economy of green industrialization. The CTIPs must work not only diplomatically, but also commercially, creating a framework that gives European and partner country businesses the confidence to invest. The EU can help address bottlenecks seen in other critical raw materials partnerships, such as the lack of EU mining companies willing to invest in partner countries where the political conditions were in place but the private sector was not present.

Perhaps most importantly, the EU must lead by example. The credibility of its external partnerships hinge on the integrity of its internal transition and targets. Its 2040 climate target needs to be built on real emissions cuts, not international offsetting. Moreover, to maintain trust, the EU can put diplomatic support behind the New Collective Quantified Goal on Climate Finance pathway.

If the EU gets it right, it won't just accelerate its own transition, it can help set a new global standard for how trade, investment, and decarbonization can work together and secure new partners.

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Pathways to Inclusive Green Industrial Policy: Building Shared Opportunities Across Economies

Aaron Maltais & Timothy Suljada

Major economies are adopting more interventionist green industrial policies to accelerate decarbonization and reshape production. While these tools can drive rapid change, their current design in several jurisdictions risks excluding emerging markets and developing economies by prioritizing domestic competitiveness and security over global fairness, mutual benefit, and ultimately reaching the goals of the Paris Agreement. This article outlines four complementary categories of measures to better align national industrial strategies with globally shared climate and development goals.

Recent policy developments in major economies—high-income countries and large emerging economies—mark a shift in climate policy with the state playing a more interventionist role to drive economic transformation related to energy transitions. Instruments such as subsidies, procurement policies, and clean technology incentives—long part of governments' toolkits—are now playing a more economically significant and strategic role alongside market mechanisms such as carbon taxes and emissions trading schemes. Together with the increasing use of local content and manufacturing provisions for energy transition technologies and the adoption of policy tools such as the European Union's Carbon Border Adjustment Mechanism (CBAM), it is fair to say that there is a broader trend towards green industrial policies.

While green industrial policies can be powerful drivers of decarbonization and are used by countries in all regions, the way they are currently designed in several major economies carries risks of leaving emerging market and developing economies (EMDEs) behind. In many cases, these policies are focused on domestic benefits, framed through the lens of industrial competitiveness and economic and geopolitical security. Although these aims are a justifiable part of garnering domestic support for energy transition investment, there is real concern that current approaches are insufficiently aligned with principles of global fairness, mutual benefit, and coherence with global climate targets. Such coherence entails ensuring that all regions decarbonize in line with the Paris Agreement goals, avoiding a future in which EMDEs—expected to see the fastest economic growth—are steered towards more carbon-intensive pathways due to limited access to finance, technology, or markets.

Without deliberate measures to make green industrial policies in major economies more inclusive, there is a danger of entrenching a "two-speed" transition in which more advanced and large economies surge ahead while other EMDEs face barriers to inclusion in new green value chains and the adoption of energy transition technologies. At the same time, for EMDEs to actively engage, the energy transition must deliver tangible economic and social benefits, addressing their development priorities alongside emissions reductions.

Ensuring that green industrial policies align with inclusive development and climate goals calls for creating pathways for technology transfer, joint innovation, fair integration into green value chains, and significantly scaled-up international climate finance for industrial development. It also calls for trade policies and standards that enable broad participation, and for high-level political commitments on cooperation to be anchored in

operational collaboration between governments, industry, and research institutions across economies at all income levels.

Pathways Forward

A recent Stockholm Environment Institute (SEI) report examines a number of proposals for how green industrial policies in major economies can be designed and implemented to better support inclusive energy and industrial transitions in EMDEs. Drawing on published policy research and analysis, workshops organized by the Leadership Group for Industry Transition (LeadIT) in September 2024 and March 2025, and interviews with representatives from EMDEs, the SEI report identifies potential approaches for aligning green industrial policy with EMDE development priorities and climate goals

Ensuring Technology Access, Technical Cooperation, and Capacity Building

A focused strategy on green technology transfer and co-development should be a priority, with agreements that move beyond access towards strategic partnerships. This can include flexible and development-oriented intellectual property arrangements, co-innovation/co-development of locally tailored technologies, and green technology diffusion funding. Embedding co-development and industrial cooperation objectives in trade and strategic partnership agreements and funding joint calls for proposals between partner countries through bilateral programmes and multilateral facilities are two avenues for implementation.

Another idea is to link domestic financial support for green technologies to commitments to provide technology, preferential licensing, and expertise to companies in EMDEs. In partnership with international organizations, major economies could also invest in local innovation hubs, technology incubators, and training on technical skills, management, and environmental standards. The UN Technology Bank for Least Developed Countries illustrates this approach through needs assessments, technology-transfer partnerships, and targeted training.

Trade and strategic partnership agreements could include R&D collaboration clauses and expanded joint funding connecting universities, research institutions, and companies across economies. Joint venture promotion platforms such as India–Sweden's Industry Transition Partnership under LeadIT, the Brazil–UK Industrial Decarbonisation Hub, the Climate Club's Global Matchmaking Platform, and the Mission Possible Partnership's Industrial Transition Accelerator are examples of efforts to facilitate this type of cooperation. Expanding industry transition partnerships to new country pairs and sectors offers a practical way to operationalize inclusive industrial decarbonization.

Equitable Integration Into Green Value Chains

To prevent a green technology divide, EMDEs should be more fully integrated into global value chains for energy transition materials and technologies in ways that promote local value addition and build industrial capabilities, particularly in areas that align with local strengths. Relocating energy-intensive production to regions with abundant renewable resources—e.g. producing green hydrogen to make low-emission iron/steel or ammonia—enables EMDEs to export climate benefits. Where domestic value addition is less feasible, countries must receive fair compensation for supplying critical materials or energy resources, enabling them to channel revenues into infrastructure, education, and broader economic diversification. Major economies, in turn, must strike a balance between competitiveness and security concerns and the diffusion of green technologies across regions to meet global climate and development targets. The EU's new clean trade and investment partnerships instrument offers a clear opportunity to put into practice such an approach.

Increasing International Climate Finance

Effective finance is pivotal. Alongside domestic investments, major economies should expand financing for green technology adoption and green industrialization in EMDEs. The Climate Investment Funds' (CIF) $1 billion Industry Decarbonization Program is a pioneering example, supporting middle-income countries to decarbonize heavy industry. For every dollar it puts in, CIF hopes to attract 12 dollars from development banks and private investors.

Co-innovation and green technology diffusion funds could be financed by international climate finance, multilateral development banks, and, as some have suggested, through recycling revenues from carbon-related border measures, such as the EU's CBAM, to EMDEs for green energy and industrial investments. Given high debt burdens, others have argued for linking debt relief to climate transition investments. Germany, for example, already employs a debt-for-climate swaps programme.

Inclusive and Sustainable Trade Framework

While national strategies must secure domestic benefits, trade and partnership frameworks should also promote the international diffusion of clean technologies, as noted, and enable EMDEs to pursue their development and industrialization objectives. Improving coherence between domestic market-supporting measures and inclusive trade conditions could involve designing climate-related trade instruments and standards that facilitate market participation by EMDEs, for example through differentiated and achievable standards. Funded technical assistance and capacity building is also needed to help partners meet evolving climate and trade requirements and align domestic policies, while standards must be transparent and efficient, avoiding discriminatory barriers; including through mutual recognition and harmonization to help reduce burdens.

Looking Ahead

Green industrial policy is increasingly shaping decarbonization efforts by major economies. A central challenge is aligning national priorities of competitiveness, security, and employment alongside opportunities for clean technologies, value addition, and capabilities across regions in line with the Paris Agreement goals. This ultimate objective cannot be reached through a zero-sum race for green industries that could result in a two-speed transition, but rather through a mutually beneficial transition that expands opportunity, lowers global abatement costs, and makes better use of comparative advantages. Looking forward, greater efforts are needed to operationalize mutually beneficial partnerships, scale finance, and design inclusive standards and trade instruments that enable EMDE participation and local value addition while preserving environmental integrity and cooperation towards shared climate and development goals.

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** This post is derived from the Stockholm Environment Institute's recently published report on Green industrial policy: Challenges and opportunities fora globally inclusive and fair energy transition.*

Carbon Copies? Suspicious Patterns of Commercial and Industrial Policy Response by the Behemoths of World Trade

Simon J. Evenett & Fernando Martin

National support measures for firms in sectors conducive to the net-zero transition are typically justified entirely on national terms. In fact, analysis reveals that subsidy awards and import curbs by one nation typically trigger similar responses from others within 6–24 months. This "echo" effect raises concerns about potential trade conflicts and market access risks, highlighting the need for international alignment and transparency in climate-related industrial policies.

The transition to a low-carbon economy has spurred governments to implement subsidies and import restrictions, reshaping the commercial policy landscape and competitive dynamics in sectors central to the net-zero transition. While the case for these policy interventions is typically made nationally in terms of attaining national net-zero goals, in practice policymakers and CEOs in the largest trading economies have kept a beady eye on steps taken by governments elsewhere.

Concerns about expensive and counterproductive subsidy races have arisen. But is there evidence in recent years of sequences of trade policy measures affecting the same climate-related products? Here the likelihood of reciprocal policy actions among major jurisdictions (China, EU-27, USA) in response to each other's measures in such products is examined.

Concerns about expensive and counterproductive subsidy races have arisen. But is there evidence in recent years of sequences of trade policy measures affecting the same climate-related products?

Using data from the Global Trade Alert database since 1 January 2017, the study investigates the probability of policy sequences, where one jurisdiction's action triggers a response from another within three set timeframes (6, 12, or 24 months). This analysis is based on 3,209 subsidy awards and 151 import curbs implemented by China, the EU-27, and the United States.

Table 1 reveals the likelihood of a subsidy response to another major player's prior subsidy awards or import curbs. Within 2 years the EU-27 reacts almost every time to Chinese and US tariff and subsidy moves favouring local firms in net zero sectors. China reacts swiftly to EU subsidies but slower to US moves, particularly import curbs. Although the likelihood of

a US subsidy response is lower, it still equals or exceeds 60% over a two-year horizon. Maybe these subsidy responses are a coincidence? (But what evidence would support that conclusion?) If not, concerns about tit-for-tat responses arise.

Table 2 shows how frequently import curbs are imposed after another government's support for local producers in net zero-related sectors. Examining the sequence of import curbs taken shows that Chinese industrial policy support elicits the most frequent reactions from both the EU-27 and USA. EU-27 and US subsidies generate moderate response rates, at least in the first 12 months. Indeed, EU-27 and US import curbs are more likely to be followed by import curbs elsewhere than EU-27 and US subsidy measures are. These findings highlight the market access at risk as support for the net zero transition unfolds.

Trade policy decisions in major trading nations appear to "echo" one another. If such echoes were confined to well-designed subsidies implemented when they are the best response to some market failure, then maybe there is little to worry about. However, if support measures for local firms are driven by other considerations—including concerns that foreign moves are undermining local firm competitiveness—then there is a cause for concern.

In a more enlightened era, this dynamic would underscore the need for international alignment to prevent harmful trade conflicts arising from the noble goal of advancing the transition to a low carbon economy.

In a more enlightened era, this dynamic would underscore the need for international alignment to prevent harmful trade conflicts arising from the noble goal of advancing the transition to a low carbon economy. Instead, at this time perhaps the best we can hope for is more transparency in measures taken, their rationales, and expected outcomes and more deliberation on better practice approaches to advance the net-zero transition through supply-side interventions.

Table 1. Responding with Subsidies

Probability of policy sequences after the initiating jurisdiction announces a subsidy or an import curb and the responding jurisdiction reacts with a subsidy covering the same low carbon technology.

Initiating Jurisdiction		Responding Jurisdiction								
		Within 6 Months			Within 12 Months			Within 24 Months		
		China	EU-27	USA	China	EU-27	USA	China	EU-27	USA
China	Subsidy		0.74	0.41		0.91	0.64		0.97	0.76
	Import Curb		0.76	0.51		0.86	0.66		0.94	0.72
EU-27	Subsidy	0.80		0.54	0.97		0.64	0.97		0.73
	Import Curb	0.62		0.48	0.87		0.54	0.92		0.60
USA	Subsidy	0.72	0.83		0.92	0.90		0.96	0.96	
	Import Curb	0.49	0.71		0.76	0.84		0.84	0.98	

Table 2. Responding with Market Access Restrictions

Probability of policy sequences after the initiating jurisdiction announces a subsidy or an import curb and the responding jurisdiction reacts with an **import curb** covering the same low carbon technology.

Initiating Jurisdiction		Responding Jurisdiction								
		Within 6 Months			Within 12 Months			Within 24 Months		
		China	EU-27	USA	China	EU-27	USA	China	EU-27	USA
China	Subsidy		0.20	0.29		0.53	0.40		0.93	0.62
	Import Curb		0.56	0.34		0.72	0.54		0.94	0.76
EU-27	Subsidy	0.28		0.22	0.43		0.39	0.62		0.63
	Import Curb	0.33		0.31	0.48		0.60	0.69		0.75
USA	Subsidy	0.14	0.32		0.30	0.59		0.49	0.81	
	Import Curb	0.33	0.39		0.45	0.65		0.61	0.90	

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Accelerating Decarbonization of Key Industrial Sectors

Trade is the World's Untapped Climate Accelerator

Jorge Arbache

International trade can act as a powerful yet underused accelerator of global decarbonization. By exploiting green comparative advantages and the transitional strategy of powershoring—relocating energy-intensive industries to renewable-rich regions—countries can reduce emissions rapidly and at lower cost. This geographic optimization of decarbonization lowers corporate risks, strengthens value chains, sustains employment, and supports climate goals while domestic infrastructure expands, delivering immediate, scalable climate benefits.

International trade and climate policy were treated for years as distinct, often incompatible domains. Trade was frequently perceived as a source of carbon leakage and competitive distortion, while climate action was framed primarily as a domestic undertaking, to be pursued through regulation, subsidies, and long-term infrastructure planning. Yet the world is now entering a phase in which these assumptions no longer hold. With rising fiscal pressures, constrained public budgets, and the urgent need to accelerate decarbonization, trade is emerging as a practical and powerful transitional strategy—one capable of reducing emissions rapidly, affordably, and at scale.

The central insight is that climate mitigation is not solely a technological challenge; it is also a question of geographical optimization. Some regions can produce electricity and energy-intensive goods with extremely low carbon intensity, while others face structural, financial, or political constraints that render decarbonization slow, costly, or politically fraught. Making deliberate use of these differences through commerce enables what may be termed global carbon arbitrage: the strategic relocation of production to places where emissions are cheapest to avoid and where clean energy is most abundant.

Green Comparative Advantage and Powershoring

The logic becomes evident when examining the carbon footprint of energy-intensive sectors. A tonne of aluminium smelted with hydropower emits roughly four tonnes of CO2, whereas the same tonne produced using coal-fired electricity emits more than twenty. Relocating even a modest share of global output to renewable-rich regions produces immediate and measurable reductions, irrespective of the final destination of the aluminium. This is the essence of green comparative advantage, a concept extending classical Ricardian trade theory by treating carbon intensity, renewable endowments, regulatory coherence, and technological capability as core determinants of competitiveness. Under this logic, environmental conditions and energy availability become as relevant to economic performance as labour productivity or capital deepening. Clean electricity itself becomes a form of natural capital—one that can be productively transformed and valorized through trade.

> When green comparative advantage is combined with the emerging phenomenon of powershoring, a powerful market-based pathway for accelerating the global energy transition begins to take shape.

When green comparative advantage is combined with the emerging phenomenon of powershoring, a powerful market-based pathway for accelerating the global energy transition begins to take shape. Powershoring refers to the relocation of electro-intensive industries to regions possessing abundant, reliable, and competitively priced renewable energy. It is distinct from reshoring, near-shoring, or friend-shoring because it is driven not by geopolitics or logistical concerns, but by energy economics and climate efficiency. Powershoring places decarbonization at the centre of industrial location decisions and treats renewable energy as a fundamental input to competitiveness in the 21st century. In doing so, it helps create new industrial geographies organized around green hubs—integrated ecosystems in which low-carbon electricity, green hydrogen, industrial facilities, logistics, certification systems, and technological spillovers reinforce one another.

It is crucial to emphasize that this is not intended as a permanent rearrangement of global industry. Rather, it is a transitional strategy for a transitional moment. The world must triple renewable capacity by 2030, even as electricity demand surges due to artificial intelligence, data centres, electric mobility, industrial electrification, and hydrogen production. Most advanced economies are struggling to deploy renewables at the pace required, hindered by land constraints, protracted permitting processes, rising costs, and community resistance. Simultaneously, governments face fiscal tightening, intense political contestation, competing budgetary priorities, and pressure to curtail subsidies. In this context, relocating part of global production to renewable-rich regions offers a pragmatic means of buying time, reducing costs, and accelerating climate progress while domestic infrastructure gradually expands.

Strategic Advantages

The corporate benefits of such a strategy are increasingly apparent. Firms confront mounting expectations from regulators, investors, and consumers. Scope 1, 2, and 3 reporting obligations, the EU Carbon Border Adjustment Mechanism, procurement policies favouring low-carbon materials, and evolving ESG financing standards all heighten the incentive to reduce carbon intensity. Locating production in regions with naturally low embedded emissions allows firms to achieve compliance organically, without reliance on offset markets or expensive retrofits. They benefit from lower operating costs, reduced exposure to fossil fuel price volatility, greater regulatory predictability, and improved access to climate-sensitive markets. They also gain more favourable financing conditions, as investors increasingly price climate risk and seek assets aligned with a low-carbon pathway. For many multinational corporations, access to clean, affordable, and dependable electricity is becoming as essential as access to labour or consumer markets.

These advantages extend downstream along global value chains. Automakers, technology producers, construction companies, food and beverage firms, and consumer goods manufacturers all rely heavily on aluminium, steel, fertilizers, petrochemicals, and other electro-intensive materials. If these inputs become

more expensive or more carbon-intensive due to domestic constraints, entire value chains face margin compression, erosion of competitiveness, and potential job losses. Access to greener inputs—produced through powershoring—helps sustain employment in downstream industries by ensuring that supply chains remain compliant, affordable, and predictable. Far from displacing employment, this approach can preserve and even expand jobs in both exporting and importing economies by maintaining the competitiveness of industries that depend on low-carbon materials.

Opportunities for Developing Countries

> Powershoring and green comparative advantage enable renewable-rich developing countries to industrialize their comparative advantages, transforming abundant natural energy endowments into engines of technological upgrading, value creation, and inclusive development.

For renewable-rich developing countries, the opportunities are particularly significant. Powershoring and green comparative advantage enable these countries to industrialize their comparative advantages, transforming abundant natural energy endowments into engines of technological upgrading, value creation, and inclusive development. Producing green steel, aluminium, fertilizers, hydrogen derivatives, and synthetic fuels in these regions creates skilled industrial employment, stimulates local supplier networks, expands service sectors in logistics, certification, engineering, and maintenance, and fosters innovation ecosystems. It increases fiscal revenues, enabling governments to invest in infrastructure, education, and social programmes. Small and medium-sized enterprises can participate in supply chains, local content expands, and regional inequalities may be reduced through the formation of distributed green industrial clusters.

Brazil stands as a paradigmatic example. With an electricity matrix that is nearly 90% renewable—a level that the European Union, the United States, and China would require decades and vast financial resources to attain—Brazil possesses a temporal and competitive advantage of exceptional magnitude. The country's Northeast region offers outstanding solar and wind potential, with natural complementarity that enables high capacity factors and long-term price stability. Producing energy-intensive goods in Brazil is, in effect, a means of exporting embedded renewable energy. Every tonne of green steel or aluminium produced there displaces a carbon-intensive tonne produced elsewhere, contributing directly to global emissions reductions while supporting domestic industry. In this sense, powershoring is not a race to the bottom but a race to the cleanest—and most competitive—production model. It exemplifies geographic optimization of decarbonization, aligning the interests of producers, consumers, and the planet.

A Complementary Instrument to Climate Solutions

This strategy does not supplant other climate solutions; it complements them. Countries must still expand renewable capacity at home, electrify transport, invest in storage technologies, adopt nature-based solutions, decarbonize buildings, and deploy carbon-capture technologies where appropriate. No single tool will address the climate challenge

in its entirety. Yet trade can play a catalytic role by accelerating mitigation during the critical years in which domestic infrastructure remains insufficient. Powershoring is one element within a broader menu of strategies—alongside innovation, circular economy approaches, green finance, demand-side efficiency, and long-term energy planning—that can collectively deliver a more rapid and cost-effective transition.

For importing economies, the benefits are noteworthy. Green trade reduces transition costs, mitigates green inflation, broadens access to low-carbon materials, and enables industries to remain competitive in a world that is rapidly internalizing carbon accountability. It allows governments to advance climate goals while safeguarding employment in sectors that might otherwise be compromised by stringent regulatory demands. It eases fiscal pressures by leveraging global markets rather than relying exclusively on domestic subsidies. And it offers a cooperative, mutually beneficial alternative to unilateral climate measures that risk fragmenting the global trading system.

To unlock the full potential of trade as a climate accelerator, global governance will need to evolve.

To unlock the full potential of trade as a climate accelerator, global governance will need to evolve. A new green multilateralism is required—one built upon transparent carbon accounting, mutual recognition of standards, elimination of tariffs on low-carbon goods, de-risking instruments for green hubs, and the creation of green trade corridors connecting renewable-rich producers to major demand centres. Such corridors would integrate harmonized certification systems, dedicated logistics infrastructure, and jointly developed regulatory frameworks. A Brazil-Europe corridor, for instance, would reduce decarbonization costs for European industry while generating stable demand and investment flows in Brazil, illustrating how trade can foster shared prosperity and climate efficiency.

Trade as the Missing Accelerator

The coming decade will be decisive. Emissions must fall sharply, yet governments face high debt, constrained budgets, political polarization, and multiple competing priorities. In this environment, strategies that deliver rapid mitigation at low fiscal cost are indispensable. Powershoring and green comparative advantage are not permanent restructurings of global industry but transitional mechanisms designed to optimize decarbonization while renewable capacity remains unevenly distributed across the globe. They serve as bridges between ambition and feasibility, enabling countries to achieve climate objectives while maintaining competitiveness, protecting employment, and attracting investment.

Trade, long underestimated in climate debates, may prove to be the missing accelerator the world urgently needs. By aligning markets with the geography of clean energy, the international community can reduce emissions more swiftly, cheaply, and equitably. In a world short on time, financial resources, and political cohesion, solutions that deliver immediate results matter enormously. Leveraging global carbon arbitrage through trade is one such solution: pragmatic, effective, and fully aligned with the structural realities of the global energy transition.

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Equity in Motion: Revenue Disbursement for a Just and Equitable Maritime Transition Under the IMO´S Net-Zero Framework

Sebastiano Gianino & Ludovic Laffineur

The IMO has developed a strategy to eliminate greenhouse gas emissions from the global shipping sector by mid-century. This article explores the emerging regulatory framework, with a focus on revenue generation, allocation, and the complexities surrounding equitable distribution under the IMO's Net-Zero Framework.

In 2023, the International Maritime Organization (IMO) adopted its Revised Strategy on the Reduction of Greenhouse Gas Emissions from Ships, setting an aspirational course towards the full decarbonization of international shipping by approximately 2050. Since then, it has worked to create a regulatory framework that includes provisions for revenue generation, whether through a greenhouse gas emissions levy, penalties for non-compliance with a global fuel standard, or market-based mechanisms such as emissions trading or credit systems.

The IMO's Net-Zero Framework and Fund

While the projected scale of revenue remains uncertain, the IMO endorsed a draft Net-Zero Framework (NZF) in April 2025 that is expected to be adopted at an extraordinary session in October 2025. This framework establishes legally binding measures that integrate a well-to-wake fuel-intensity standard with a market-based pricing mechanism. Vessels exceeding prescribed emission thresholds will be required to purchase remedial units, while those that surpass compliance targets may generate and trade surplus units.

Central to this is the newly established IMO Net-Zero Fund, designed to direct revenues towards accelerating the uptake of zero- and near-zero-emission fuels and promote a just and equitable transition by taking into account the needs of developing countries. However, the revenues generated by the IMO's carbon pricing mechanism are expected to fall well short of the level that Pacific Island nations, small island developing states (SIDS), and least developed countries (LDCs) had advocated for.

While many of these countries called for a high, universal levy ranging from $100 to $150 for every tonne of CO2, the compromise framework introduces a less ambitious carbon price per tonne. Under the NZF, shipowners pay only for emissions that exceed set greenhouse gas intensity targets, with prices up to $100 or $380 per excess tonne. Since charges apply only to emissions above these limits, the total revenue collected will be lower than from a fixed carbon tax on all emissions. The framework is expected to raise $10–12 billion annually in the first three years, rather than the $40–60 billion that Pacific Island nations, SIDS, and LDCs argue will be necessary to address their urgent adaptation and development needs.

Distinctions between different revenue uses are also still to be defined. Some parties hold the position that the entirety of the proceeds should be reinvested in efforts to decarbonize international shipping. Other stakeholders advocate for a more expansive interpretation, suggesting that a share of revenues be directed towards activities not strictly confined to maritime decarbonization. This broader application may include addressing the wider

environmental and climatic consequences of maritime emissions, such as supporting mitigation and adaptation initiatives in developing countries, particularly those most vulnerable to climate change. This more comprehensive approach is sometimes classified as "out-of-sector" use of revenues. However, the term remains ambiguous and inconsistently applied, and the lack of a clear operational definition can lead to misinterpretations in policy and legal discourse.

The Disbursement of Revenues

Regulation 41 of the NZF addresses the disbursement of revenues generated through the forthcoming Net-Zero Fund. Rather than being a general or discretionary guideline, it contains a structured framework that clearly mandates the purposes for which the funds are to be allocated. According to this regulation, the revenue generated through the mechanism must be disbursed in compliance with clearly defined objectives that are to be embedded in the governance framework of the fund managing these revenues, still to be developed in governing provisions of the fund. The regulation stipulates that these revenues must be used for purposes that directly support the decarbonization of the maritime sector and ensure a fair and inclusive transition for all countries, particularly those that are most vulnerable, such as LDCs and SIDS.

Among the specific uses identified in the regulation are: rewarding ships that use zero- or near-zero-emission fuels; supporting research, development, and global deployment of decarbonization technologies and infrastructure; assisting developing countries in building capacity and resilience "within the boundaries of the energy transition;" and supporting measures that offset any unintended adverse impacts caused by the new regulatory or economic burdens, such as impacts on food security or trade.

> Regulation 41 is meant to ensure that the emissions pricing mechanism is not simply a cost imposed on the industry, but also a source of investment in sustainable shipping and international equity.

Regulation 41 is meant to ensure that the emissions pricing mechanism is not simply a cost imposed on the industry, but also a source of investment in sustainable shipping and international equity. By codifying how the funds are to be disbursed, Regulation 41 acknowledges the specific needs of climate-vulnerable nations, especially those with limited capacity to adapt.

Prior to the NZF agreement, submissions to the IMO suggested a distinction between "in-sector" and "out-of-sector" distributions. Nevertheless, Regulation 41 does not explicitly label revenue disbursement as "in-sector" or "out-of-sector".

In-sector distribution would cover funds directly reinvested into the shipping sector, such as rewards for zero- or near-zero-emission fuels, naval fleet upgrades, seafarer training, capacity building for low-carbon technologies, and port infrastructure improvements. These are all purposes explicitly laid out in Regulation 41 (paragraphs 1 and 2.1, 2.2, 2.4).

Out-of-sector distribution would cover funding that supports broader climate or societal goals outside the shipping industry, such as general climate finance, food security in vulnerable states, or non-shipping mitigation initiatives. The NZF includes addressing negative impacts like food security under Regulation 41, while Regulation 43 underscores the IMO's obligation to address, prevent, and mitigate any disproportionate negative impacts on food security with particular attention to vulnerable countries. It does not, however, extend this to completely unrelated sectors. As such, the draft confines "out-of-sector" usage within the context of mitigating shipping-related negative impacts.

Therefore, while Regulation 41 appears to allow for a broad range of revenue allocations, the language presents a key challenge to addressing disproportionate negative impacts directly tied to measures within the shipping sector's energy transition. In practice, the line between "in-sector" and "out-of-sector" uses of revenue is often blurred. Investments in infrastructure, community resilience, and related areas, though not always classified as maritime, will nonetheless be essential to sustaining the sector's operations and supporting its transition to low-carbon pathways globally.

Looking Ahead

Unlocking opportunities associated with maritime decarbonization requires further support in countries with high capital costs or limited industrial infrastructure. Further, the ability of countries to participate in the maritime transition varies significantly (notably depending on the size of their fleet and ports), as does their exposure to the consequences of climate change and/or increased transport costs that the new regulations could cause.

While future efforts at the IMO are expected to initially focus on the technical and administrative aspects of setting up the Net-Zero Fund, it is critical that discussions on revenue use and disbursement are not deferred. Early clarity on how revenues will be allocated, particularly to support climate-vulnerable countries, will be essential to ensure credibility, build trust among stakeholders, and allow for timely and effective operationalization as soon as revenues start to flow.

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Can the International Maritime Organization Incentivize an Equitable Transition Away From Fossil Fuel Use?

Tristan Smith

The IMO has committed to new and much upgraded climate targets and objectives in its 2023 revised strategy on greenhouse gas reduction. The equity test of this strategy is whether or not the organization and its members can grapple with policymaking to incentivize not just an energy transition, but an equitable energy transition.

In 2025, multilateralism will face a critical test both on climate but also on equity. The International Maritime Organization (IMO), the specialized UN agency that regulates international shipping, surprised many when in 2023 it committed to new and much upgraded climate targets and objectives in its revised strategy on greenhouse gas (GHG) reduction. These targets (20 striving for 30% reduction in GHG by 2030, 70 striving for 80% GHG reduction by 2040, and net zero GHG around 2050) essentially commit international shipping, the enabler of global trade, to a wholesale transition away from fossil fuel use by the end of the 2030's.

However, the resolution is a target—the test of multilateralism is whether the IMO and its member governments will create policy strong enough to drive the massive investments needed for new energy supply chains and a new (or at least significantly retrofitted) global fleet of ~50,000 ships. The timeline already committed to in 2023 by the IMO is for the policy measures (a mandate on the fuel/energy used and a GHG pricing mechanism) to be finalized in April 2025 and enter into force in 2027. Good progress in intervening meetings, including most recently in September/October 2024, has been made and there is no reason not to anticipate that timeline coming to fruition.

IMO's GHG Reduction is Not Just a GHG Mitigation Matter

The IMO is often described as a "technical" agency. Its remit is comparatively simple—to make rules relating to safety and pollution prevention. Its origins come from specifying standards for life-saving equipment, following the sinking of the Titanic. Addressing GHG emissions is not simple—one consequence of regulating GHG is accepting that the IMO is no longer in the comparatively simple territory of its origins but regulating something that impinges on a much broader space that can easily bump into areas also considered (by the same countries) at the UNFCCC, UNEP, UNDP, FAO, UNCTAD, WTO, and other intergovernmental organizations.

Whether envisaged or not, trade and economic development has become a central issue to the IMO's GHG debates. The origins for this come from the IMO's initial strategy on GHG emission reduction in 2018, with the guiding principles expressly acknowledge the impingement on other UN areas with "the need to be cognizant of [...] the principle of common but differentiated responsibilities and respective capabilities." One example of the practical implementation of this "cognizance" at the IMO was the development of a subsequent resolution and procedure for assessing impacts on states arising from GHG regulation, and a commitment to assess and address "disproportionate negative impacts."

This commitment means that in its process for finalizing the GHG measures, which it is due to adopt in April 2025, the IMO commissioned UN Trade and Development (UNCTAD) to model the impacts of a range of different policy options on states, looking at imports/exports and GDP. And this is where the critical test—or stark choice—relating to equity (between states) is laid bare. The full study and the executive summary and findings (Section 7.1) are well worth a read—the challenges of modelling which economy wins or loses in 2050 and by how much are far from trivial and the limitations of the results cannot be done justice in this short article. However, in essence, the work shows that the path ahead falls to two different choices on how to incentivize transition, whilst recognizing that it will be a gradual process happening at different speeds in different parts of the world. These two choices in turn play into fundamental differences for future trade and development:

- Fuel-standard-led transition – a trading mechanism in which more polluting ships compensate less polluting lower GHG emitting ships.
- Levy-led transition – a universal price on all GHG emissions, with revenues redistributed to incentivize both the energy transition and an equitable transition (including compensation for the most economically impacted and climate vulnerable countries).

Different Policy Scenarios Have Different Impacts on Trade and GDP

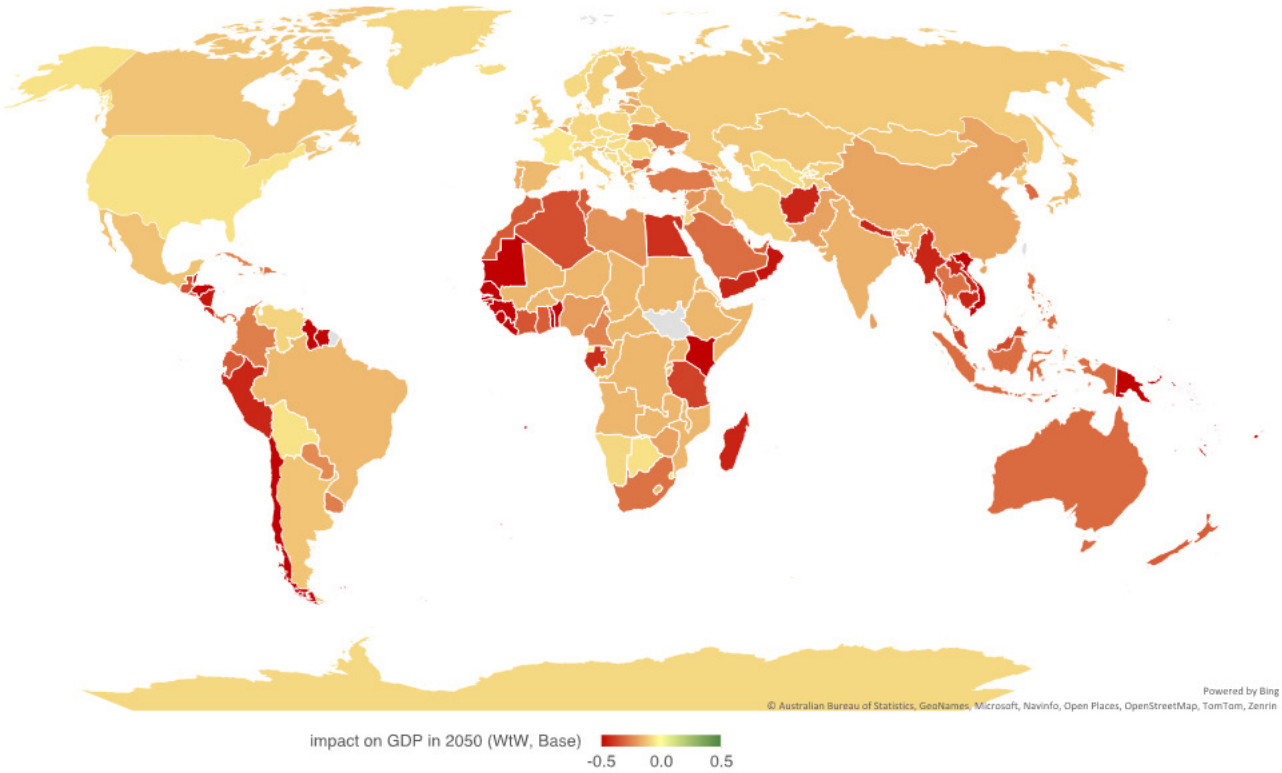
UNCTAD has modelled a range of scenarios and combination of parameters, which cannot easily be summarized. The global average impact on trade and GDP are small, but the relative changes in trade and development between countries are not insignificant.

Variation in the way a country is impacted comes from differences in the nature of their use of international trade (what they trade and who with), and the shipping network that services this trade. The consequence of any decarbonization policy parameter set is to increase transport costs, primarily because the technology transition from cheaper fossil fuels to more expensive renewable energy sources adds costs. UNCTAD estimates the increase in maritime logistics costs (the total costs of moving a good from country A to country B) ranges from 5–19% in 2030 to 78–85% in 2050, depending on the specification of policy parameters. The cost increase is greater and less variable in 2050 because by that year shipping has essentially completely decarbonized and, therefore, is carrying the cost of the full fleet's transition to zero emissions technology.

The sensitivity of a country's trade volumes and GDP to that transport cost increase is not the same across countries, and is generally regressive; meaning that the lowest income countries, especially least developed countries (LDCs) but also small island developing states (SIDS), experience the highest negative impacts on GDP. Logistically well-connected, diverse, and strong services sectors all lead developed economies to experience the least impacts from higher transport costs.

A fuel-standard-led transition (internally trading the costs between ship operators) has no obvious potential to integrate mitigation of the regressive impacts on trade and development into its effects. As a result, under this policy scenario many African economies, some central and southern American and Asian economies (especially Asian LDCs), and most of the SIDS see GDP impacts of around 0.5% reduction relative to a "business-as-usual" scenario (Figure 1).

Figure 1. Impact on GDP in 2050 of Fuel-Standard-Led Transition



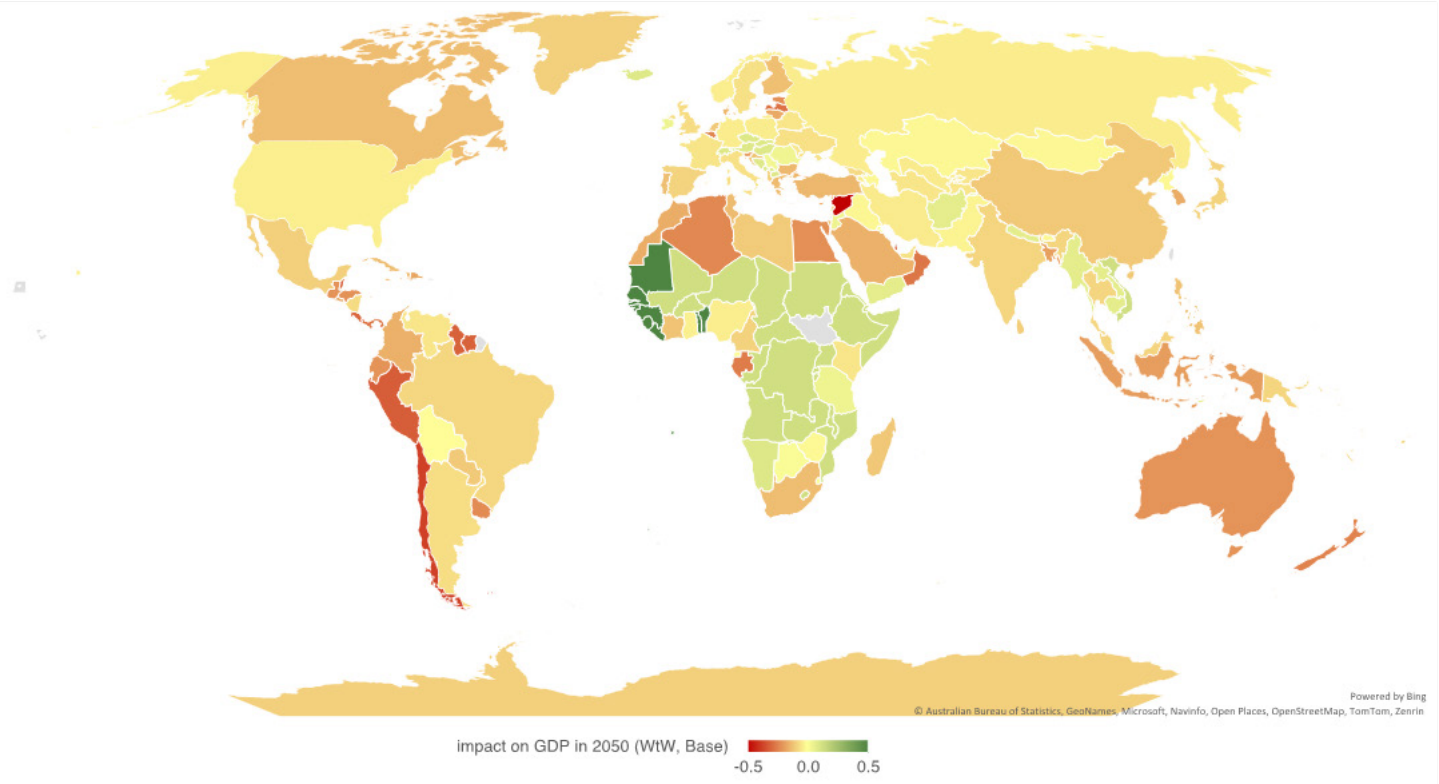
Source: Produced from UNCTAD Impact on States data, scenario 24.

Note: Fuel-standard-led transition particularly supported by Angola, Argentina, Brazil, China, Ecuador, Norway, South Africa, United Arab Emirates, and Uruguay.

In the levy-led policy scenario, because only a portion of revenues are needed for energy transition, there is still a sizable share of revenues available for redistribution to economies (a $100/tCO2e GHG price would generate around $100bn per annum from international shipping). The modelling was too high-level to allocate revenue to specific sectors so only considers revenue distribution as an injection of general support (subsidy for consumption of the average household). The distribution of revenues between countries was done by prioritizing revenues to those countries experiencing the strongest economic impacts (before revenues distribution), and in consideration of their population size—e.g. greater magnitudes of revenue were given to countries with larger populations and higher negative GDP impacts.

Because many of the countries experiencing strong negative impacts are also the smallest economies, even modest revenues from a GHG price on shipping emissions can go a very long way. Not only are all developing countries less impacted in this scenario, including the larger economies that generally experience lower economic impacts under the fuel-standard led transition (e.g. China, Brazil, India, Argentina, South Africa), but the LDCs and the SIDS in Africa and Asia, particularly, switch from increasing inequity to (in some cases) similar or even lower inequity relative to other countries (Figure 2).

Figure 2. Impact on GDP in 2050 of Levy-Led Transition



Source: Produced from UNCTAD Impact on States data, scenario 26—revenue distribution to all developing countries, SIDS, and LDCs.

Note: Levy-led transition particularly supported by Belize, Fiji, Kiribati, Marshall Islands, Nauru, Palau, Tuvalu, Tonga, Solomon Islands, and Vanuatu.

The UNCTAD study also looks beyond GDP to trade volume and consumer price effects, and looks at interim points in time (2030, 2040), as well as the long run. Generally, the effects on volumes (both imports and exports) are more significant in developing countries and especially LDCs, reaching a maximum reduction in the LDC aggregate of around 0.5% in volumes by 2050. The effects of revenue disbursement can create larger changes in trade volumes, especially where the revenue use stimulates trade-related consumption. Consumer prices are estimated to rise as a result of all policy scenarios, varying between an increase of 0.21 to 0.044% in 2030 and between 0.38 and 0.2% by 2050 (depending on the country grouping).

While the results indicate that revenue distribution to countries with higher negative impacts has the potential to counter some of these effects, one risk associated with trade and consumer price impacts that received particular attention was related to food security, and was particularly raised by African economies. It was agreed for there to be further investigation, and the findings related to this risk will likely be important to further rounds of negotiation on how best to find a balance fair to all countries in the finalization of the policy design, including how to satisfy the IMO's stated commitment to "contribute to a just and equitable transition" and to "address disproportionate negative impacts."

Concluding Remarks

The evidence is clear, and although many questions can and should be asked of the modelling assumptions and method, it is not a novel or surprising finding that redistribution and support to lower income economies (or households) is both fairer and ultimately benefits all. But the equity test of this multilateral organization is whether or not the IMO can grapple with policymaking to incentivize not just an energy transition, but an equitable energy transition.

The equity test of this multilateral organization is whether or not the IMO can grapple with policymaking to incentivize not just an energy transition, but an equitable energy transition. Clean industrial policy is now at the centre of the European Union's climate and economic strategy.

The success or failure of that outcome depends on the extent to which the IMO sees its future as a continuation of its siloed past. Is it a specialist technical rule-making organization with a focus exclusively on "the ship"? Or is it an integrated component in a network of UN agencies with common objectives to tackle societies fundamental challenges—SDGs, climate crisis, finance and debt, etc.?

Given the IMO is ultimately at the service of the same member state constituencies as all the other UN agencies, this is also predominantly a question of those member states. They also have the opportunity to increase coherence in the positions taken across UN agencies with overlapping agendas. Such coherence between the IMO, climate, and climate finance threads across multilateral organizations rapidly needs to come together. This is because if the IMO does go ahead with a universal GHG price, the efficient and effective disbursement of revenue rapidly becomes the critical point of success or failure as to whether the actual GDP consequences are in line with UNCTAD's modelling or not.

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Promoting Sustainability and Climate Goals in Agriculture and Food Systems

Turning Tides: How the New Geopolitics Is Undermining Global Sustainability Goals

Valeria Piñeiro, Joseph Glauber, & Juan Pablo Gianatiempo

Model results on the impacts of proposed US tariffs on national income and the environment illustrate that current shift towards unilateralism and weakened multilateral cooperation threaten to erode the collective capacity to address global environmental crises.

The year 2025 has marked a significant shift in the global political landscape, characterized by a renewed emphasis on unilateralism and national interest. The return of the Trump administration to the White House has reinforced a broader global trend in which major powers increasingly prioritize sovereignty and overt unilateralism over multilateral cooperation. This shift poses serious challenges for the international community's ability to address climate change and pursue a coordinated sustainability agenda. In recent years, global collaboration led to key achievements—such as the Paris Agreement and joint efforts in green trade and finance—that reflected a shared commitment to environmental goals. However, the current trajectory suggests a move towards fragmentation, with rising trade tensions, new tariff regimes, retaliatory measures, and a general deprioritization of environmental commitments.

This growing disconnect between trade policy and sustainability objectives threatens to undermine previous progress and complicate efforts to implement climate-aligned strategies. Emerging green trade policies, including incentives for low-emission goods, are increasingly being viewed by exporting countries as perceived forms of protectionism, further deepening geopolitical divides. These developments create significant obstacles for low- and middle-income countries that rely on climate finance, access to global markets, and cooperative frameworks to achieve sustainable development.

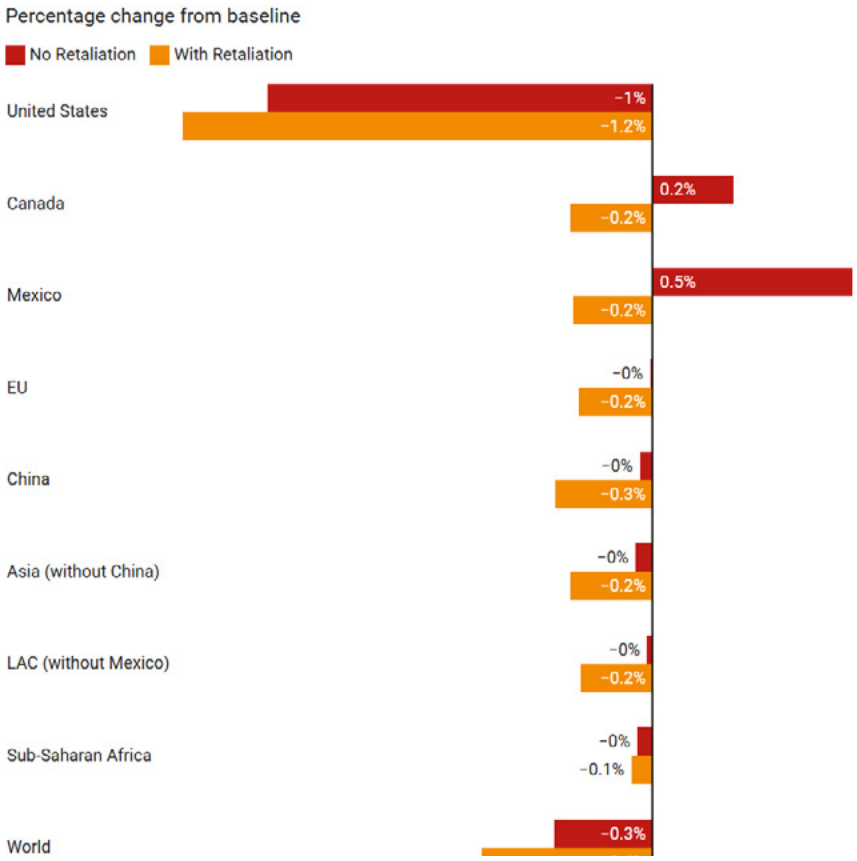
Emerging green trade policies are increasingly being viewed by exporting countries as perceived forms of protectionism, further deepening geopolitical divides. Clean industrial policy is now at the centre of the European Union's climate and economic strategy.

Trade remains a potentially powerful tool for climate mitigation, as it allows for more efficient production patterns based on comparative advantages and natural resource endowments. However, protectionist measures—such as tariffs and trade barriers—distort market signals, reduce the efficient use of resources, and may drive agricultural expansion into ecologically sensitive areas, exacerbating deforestation and biodiversity loss. Moreover, by restricting access to global markets, such measures can limit the diffusion of sustainable technologies and practices, impeding the broader transition to climate-resilient and environmentally sound agri-food systems.

Model Results on the Impacts of Proposed US Tariffs on National Income and the Environment

Based on our forthcoming discussion paper, we analyze the implications of the "Liberation Day" scenario using an economy-wide model that captures global trade and income dynamics. This scenario introduces a 10% supplemental tariff by the United States on imports from nearly all trading partners, along with higher, country-specific tariffs on those with which the US runs the largest trade deficits. Our findings, illustrated in Figure 1, highlight that countries are generally better off avoiding imposition of their own retaliatory measures against the US in response to such unilateral actions (this analysis does not factor in the potential political impacts of counter-retaliatory actions). While the imposition of tariffs triggers significant trade diversion and a reconfiguration of global trade patterns, the overall transition entails costs—particularly as economies adjust to new trade relationships. Importantly, these emerging patterns are not guided by environmental efficiency or comparative advantage, but rather by arbitrary unilateral actions.

Figure 1. Impact of the Proposed US Tariffs on GDP



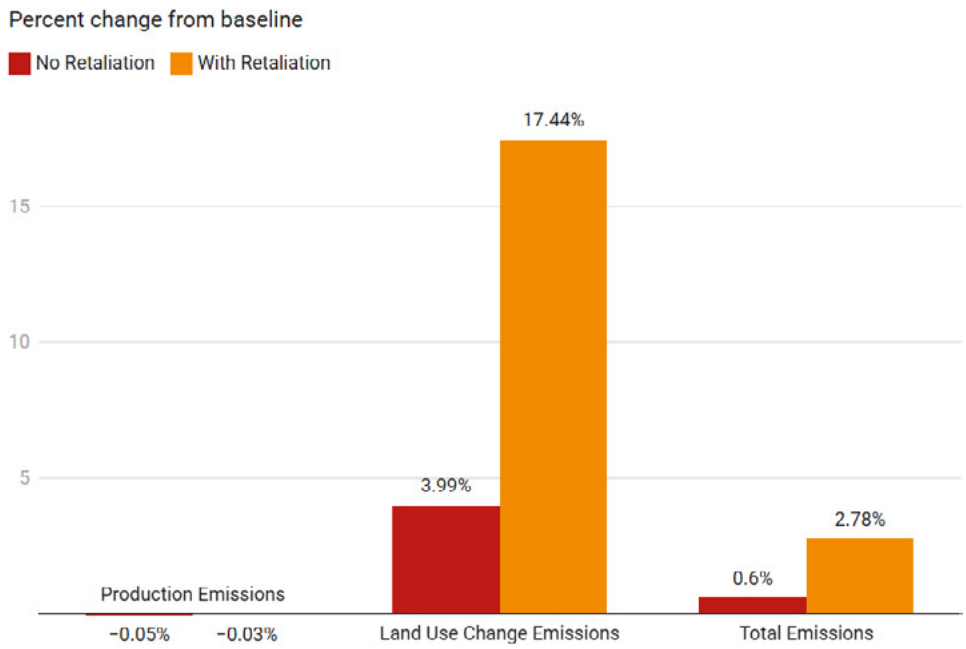
Source: Calculations by authors based on MIRAGRODEP simulations. Created with Datawrapper.

The scenario results in a broad contraction in global trade and GDP, with the US experiencing the most pronounced declines in exports, imports, and overall economic output. Although some countries see modest improvements in terms of trade and benefit from greater intraregional integration, these gains are insufficient to compensate for broader systemic inefficiencies, including disrupted supply chains. The European Union is one of the few regions to benefit meaningfully, capturing displaced trade flows, especially in sectors like pork and poultry meat, where high product standards align with demand in markets like Japan, China, and Mexico.

Crucially, the trade realignments that emerge from the Liberation Day scenario are not the result of a coordinated international strategy to improve environmental outcomes or promote sustainability. Instead, they reflect a reactive and fragmented adjustment to geopolitical tensions, where new trade patterns are shaped by strategic interests, retaliatory dynamics, and shifting alliances. This geopolitical-driven restructuring risks sidelining climate goals and undermining opportunities to use trade as a mechanism for environmental improvement, potentially locking countries into less efficient and less sustainable production and trade systems over the long term.

The implementation of the proposed US tariffs would yield mixed GHG emission outcomes (Figure 2). In both scenarios, production GHG emissions would decline modestly, by 0.05% without retaliation and 0.03% with retaliation, reflecting reduced agricultural output. In contrast, land use change GHG emissions would rise substantially, increasing by 4% in the absence of retaliation and by over 17% when retaliation is present. These increases suggest a shift in production towards more land-intensive or environmentally sensitive regions, potentially exacerbating deforestation and biodiversity loss. Consequently, total GHG emissions from agriculture and land use rose by approximately 0.6% in the no-retaliation scenario and by nearly 2.8% under retaliation. These findings indicate that reciprocal U.S. tariffs are likely to increase the overall environmental burden, with retaliatory trade measures potentially exacerbating this effect.

Figure 2. Impact of the Proposed US Tariffs on GDP



Source: Calculations by authors based on MIRAGRODEP simulations. Created with Datawrapper.

Reaffirming International Cooperation as a Cornerstone of Environmental and Economic Policymaking

Trade restrictions and protectionist policies can undermine environmental sustainability, particularly within the agricultural sector. By distorting market incentives, such measures may lead to inefficient resource allocation and encourage agricultural expansion into ecologically sensitive regions, contributing to deforestation and biodiversity loss, consistent with the observed substantial increases in land use change GHG emissions illustrated in Figure 2, which would rise by up to 17% under retaliation.

Additionally, protectionism can hinder the adoption of sustainable practices by limiting access to international markets, which often incentivize higher environmental standards. This isolation reduces opportunities for technology transfer and weakens the mechanisms that support climate-resilient and environmentally friendly agriculture. Furthermore, trade restrictions can exacerbate food insecurity by driving up prices and reducing the availability of diverse food products, disproportionately impacting vulnerable populations.

In contrast, well-designed trade and trade-related policies—complemented by strong environmental safeguards—can facilitate the diffusion of green technologies, promote more sustainable production systems, and provide incentives for meeting higher environmental benchmarks. Trade policy, therefore, must be aligned with sustainability objectives to support climate action.

> The weakening of multilateral cooperation threatens to erode the collective capacity to address global environmental crises.

The current shift towards unilateralism and rising geopolitical tensions poses an additional challenge to achieving these goals. The weakening of multilateral cooperation threatens to erode the collective capacity to address global environmental crises. Without coordinated action and trust among nations, it is unlikely that international climate and sustainability targets for 2030 and beyond will be met. This is particularly concerning for countries most vulnerable to climate change, which may face growing isolation and reduced access to adaptation support.

To counter these trends, there is an urgent need to reaffirm international cooperation as a cornerstone of environmental and economic policymaking. Sustaining global progress requires inclusive, coordinated strategies that integrate trade and sustainability goals, and resist the fragmentation that risks undoing hard-won achievements.

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Using Market Mechanisms to Make the Global Food System More Sustainable and Resilient

Jason Clay

Global trade is quickly becoming a dominant force in food markets. And while exports are critical to food security, environmental impacts are not currently addressed. To tackle the environmental impacts of globally traded food, this article proposes the development of Codex Planetarius, a system of minimum environmental standards for global food production and trade. It also proposes a 1% Fund, an environmental fee food commodity exports with the revenues used to make the global food system more sustainable and resilient in the face of climate change. The goal of these complementary proposals is to ensure that global food trade does not erode the renewable natural resource base that exporting and importing countries alike depend on for food.

The production of food has had the largest impact on the planet of any human activity, responsible for 70% of biodiversity and habitat loss, 70% of freshwater use and 78% of water pollution, and up to 35% of global greenhouse gas emissions. Simultaneously, climate change is negatively impacting food production—global climate pre-harvest losses are 10% over the last decade, but 18% in Africa. Net primary productivity in agriculture is projected to decline globally, although this will vary by habitat, geography, and crop. By 2050, global crop yields could decline in key areas by up to 30%. In my lifetime, the world's population has grown from 2.5 billion people to 8.2 billion while per capita income has soared, diets have changed significantly, and life expectancy has increased by nearly 30 years. All these factors exert pressure on the ability of renewable natural landscapes to regenerate themselves.

The production of food has had the largest impact on the planet of any human activity, responsible for 70% of biodiversity and habitat loss, 70% of freshwater use and 78% of water pollution, and up to 35% of global greenhouse gas emissions.

Global trade is quickly becoming a dominant force in food markets. As the amount of food produced globally doubled from 1980 to 2020, the amount of food traded globally more than quadrupled, from 7% of food produced in 1980 to nearly 30% in 2020. And while exports are critical to food security, environmental impacts are not currently addressed in the global food trade.

To address the environmental impacts of globally traded food, I have proposed the development of *Codex Planetarius*, a system of minimum environmental standards for global food production and trade. If implemented, *Codex Planetarius* will provide minimum environmental performance standards for six key impacts of food production—habitat and biodiversity loss, freshwater use, water pollution, soil health, and greenhouse gas emissions. We are also proposing a 1% Fund—a 1% environmental fee that would promote the resilience of the global food system. The goal is to ensure that global food trade does not erode the renewable natural resource base that exporting and importing countries alike depend on for food.

The rationale is simple. The performance of the least efficient 10–20% of food producers globally creates 60–80% of key global impacts but produces only 5% of the product. *Codex Planetarius* will help ensure that producers meet minimum performance standards for their products that are to be exported. What fails to meet the standards will be available on domestic markets—although experience shows in the case of *Codex Alimentarius* for example that once a standard is set for exported food, it often is adopted for produce made available on domestic markets as well. This approach is designed to minimize costs and trade disruption, maximize local environmental benefits, and ensure food security and sustainable production for future generations.

Background

Over nearly 40 years, multistakeholder groups have created hundreds of voluntary standards in the attempt to manage the key impacts of producing food commodities. These were aimed at rewarding the best performers and helping them access markets that would recognize and reward them with higher prices for certified products. Most standards reward practices rather than results. But most important, the costs of achieving certification often were not rewarded in the marketplace. In short, many programmes were based on what better performers were already able to do.

In the end, voluntary programmes have not operated at the speed or scale needed to protect planetary health. They have failed for two reasons. First, they were aimed at the wrong end of the stick—e.g. rewarding the best performers rather than improving the least efficient ones, whose products are often preferred in the market because they are cheaper than that produced by the more environmentally advanced producers. This is particularly true in global markets, even in Europe and North America where most companies, with few exceptions, continue to buy uncertified product when higher priced certified product is available. Second, they did not consistently measure and reduce the key environmental impacts of food production.

Current efforts directed at agricultural production are separate from the internationally recognized codes that are accepted by governments regarding legality, subsidies, and trade policies as part of the World Trade Organization (WTO). They also are distinct from those that protect human health, such as *Codex Alimentarius*, which has been explicitly endorsed as the standard-setting organization for food safety by the WTO's Agreement on Sanitary and Phytosanitary Measures.

Codex Alimentarius and Codex Planetarius

In 1963, doctors and other health experts finalized *Codex Alimentarius* to help governments assure consumers and other stakeholders that a system existed to promote food safety globally. *Codex Alimentarius*, which is housed in the Food and Agriculture Organization of the United Nations (FAO), focuses on key consumer health and safety standards as well as phytosanitary issues. It does not address the health of the planet, however. This is what makes *Codex Planetarius* necessary.

> Codex Planetarius would provide governments and stakeholders minimum acceptable environmental performance standards for the production of globally traded food commodities.

Codex Planetarius would provide governments, businesses, trade authorities, multilateral organizations, NGOs, civil society, and other key institutions minimum acceptable environmental performance standards for the production of globally traded food commodities. It would focus on the same key impacts, indicators, and methods of measurement globally. For example, while greenhouse gas emissions seem straightforward, there is no single life-cycle assessment methodology—even when two analysts use the same methodology they can have different results. Today we don't just have apples-to-oranges comparisons, we actually have apples to fruit salad. The issue is even more complicated when talking about soil health or other key impacts.

In short, the ultimate level of performance allowed for any indicator might vary based on geography and level of development. The performance level that best reflects local conditions would need to be agreed to by researchers and then negotiated by countries. This has happened in the past with the WTO and various trade issues. However, in this case, the methodology for measuring (e.g. the metrics) would be the same and would promote an escalator of continuous improvement. To be traded and enter global markets, commodities would need to meet minimum environmental performance standards.

As with *Codex Alimentarius*, the best outcome would be that all domestic production is held to a higher standard, rather than products with the worst environmental impacts being held for domestic markets. This would happen for three reasons. First, it will be cheaper for countries not to segregate their products for domestic and export markets. Second, products that fail to meet export requirements will remain on the domestic market and thereby lower domestic prices—to the detriment of farmers if this is allowed to go on for very long. Third, production that is less sustainable erodes the natural environment, undermines food production, and makes food production less resilient.

As we are already seeing, climate change will result in significant shifts in where and how food commodities are produced. As food production shifts, so would the environmental impacts, because producers do not know how to produce the new crops as well as the old ones, and the new crops may need to be adapted to the new geographies.

The 1% Fund

The costs of addressing environmental externalities are not included in food commodity prices. To help pay for those costs, we are proposing the use of the market buy-and-sell mechanism to generate the 1% Fund. A 1% environmental fee would be collected in addition to the declared FOB price of globally exported food commodities. The revenues would be used to make the global food system more sustainable and resilient in the face of climate change. This would include helping the least efficient producers obtain clear land titles and other legal permits, reforest areas to comply with the law, address market traceability requirements, adopt better

practices and technologies to reduce key impacts, retire marginal lands, and support the floor price of payments for environmental services, among other things.

The funds would be disbursed based on the export level of each crop, so the largest 15 exporting countries would receive the largest amount of funding, but it would be earmarked for each crop. It is assumed that the consumers paying the tax would want it to be applied directly to the "product" that they are purchasing. The funding would go to help improve the worst producers of that crop in those exporting countries. These are the countries that are the most important for global food security, as they are the ones that tend to fill the gaps during periods of shortages. But all of them will face resilience issues due to the impacts of climate change.

In the end, it will take governments to move the bottom—that is, the least efficient producers who create the biggest environmental impacts. Such actions will protect renewable natural resources for future generations and ensure that more of the actual cost of sustainability is passed on to the consumer. However, the costs will not result in significant increases in the cost of consumer goods. For example, roughly 5% of the cost of a $4 box of cereal goes to purchase the ingredients that are in the cereal. Shipping and handling and even advertising usually represent much larger sums, and the rest is for processing, packaging, transportation, marketing, and similar costs. The 1% Fund assessment would total 1% of that 5%, or 5/100ths of a percent for the total cost of the box of cereal. That works out to about 2/10ths of a penny on a $4 box of cereal.

Next Steps

> With trade more critical to food security than ever before, it is incumbent upon us to find ways to use markets to make that trade more sustainable.

Both the 1% Fund and *Codex Planetarius* are multi-year proof-of-concept projects at World Wildlife Fund's Markets Institute that implicate dozens of other organizations and experts, involve in-depth research and analysis and case studies about the impacts, and are funded by the Gordon and Betty Moore Foundation. Research on impacts and indicators as well as a number of potential impacts of *Codex Planetarius* and the 1% Fund can be found on our website.

We are using several layers of expert peer review to ensure that the two programmes address global realities and to employ the peer review process to build consensus. We will also develop pilot programmes to test *Codex Planetarius* in target commodity markets and geographies and will test the 1% Fund in Brazil to look at the impact on multiple commodity exports. Each pilot will explore and analyze metrics and systems to measure them, estimate costs, identify gaps, address assumptions, and assess the impacts of the proof-of-concept research for globally traded food. Once the proof-of-concept work is completed, we will put the body of work in the public domain and help hand off the two programmes to governments through trade agreements and, eventually and ideally, to the WTO.

The ultimate goal is for governments to own both of these programmes. After being explored through bilateral and larger trade agreements, eventually *Codex Planetarius* will be launched as an entity and located within a suitable organization. The 1% Fund will likely have a "fund of funds" structure in each exporting country to ensure that the fees paid to improve the production of each commodity are used to reduce the impact of those producing them, making them more sustainable and ultimately more resilient.

With trade more critical to food security than ever before, it is incumbent upon us to find ways to use markets to make that trade more sustainable. That includes taking the products with the biggest impacts off of global markets, and also using the market to generate the funding needed to pay for reducing the biggest impacts of producing food. That will make food production more sustainable and make our global food system more resilient.

What is the alternative? If we do not reduce the biggest impacts of producing food globally, we will continue to mine the resources needed by future generations. *Codex Planetarius* and the 1% Fund are complementary strategies that use global food markets to reduce the biggest impacts of producing food. Over time, they will use production to begin to rebuild the renewable natural resource base. We must manage the planet as if our lives, as well as those that follow us, depend on it. Think about it.

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Climate and Agriculture: Looking Beyond Agricultural Subsidy Reform

Anthony Cox

Efforts on multilateral reform of agricultural subsidies have ground to a halt. While subsidy reform is key to making progress on mitigating the climate impacts of the agricultural sector, there is a need to pursue non-subsidy trade-related incentives that can help maintain momentum towards more equitable, resilient, and low-emission food systems.

Making headway on agricultural subsidy reform has been identified as one of the central pillars to reducing greenhouse gas emissions in a sector that is responsible for nearly a quarter of global emissions. However, with the global trade system in disarray, multilateral fora paralysed, and the climate clock ticking, agricultural subsidy reform is something of a diplomatic graveyard. The traditional tools of trade liberalization and top-down negotiations have failed to deliver the transformative agenda on agricultural subsidy reform that is needed. Study after study from the OECD, FAO, and World Bank have underscored the importance of removing, reducing, and redirecting agricultural subsidies to reduce environmental impacts, enhance food security, and reduce rural poverty. Despite these analytical findings and repeated calls for reform, progress on eliminating environmentally harmful agricultural subsidies has flatlined.

This is unlikely going to change in the short to medium term as the current focus of trade policy discussions is primarily around bilateral market access deals rather than shoring up a consensus-based global trade rules system. Moreover, addressing climate or environmental concerns is largely not featured in these discussions. While the global community must maintain pressure to reform the World Trade Organization (WTO) and, hopefully, reignite broader subsidy reform efforts, countries must turn to the broader trade policy toolkit already available to better align agricultural trade with net-zero objectives and to complement domestic reforms.

Making Climate Progress While Agricultural Subsidy Reform is Stalled

The agricultural sector is one of the sectors that is most vulnerable to climate disruptions with actual and potential impacts on the world's food systems, the livelihoods of billions around the world, and on the health and sustainability of the planet. As a result, it sits at the heart of both the climate challenge and the sustainability opportunity. In the absence of meaningful progress on subsidy reform, countries can still pursue a range of positive, non-subsidy, trade-related incentives that can serve as scalable drivers of more equitable, resilient, and low-emission food systems. Such measures include sustainability-linked market access preferences, trade-related technical assistance and green trade facilitation, recognition of voluntary sustainability standards, and targeted finance to drive transformation. These approaches, while not substitutes for subsidy reform, can offer a complementary, pragmatic, and politically feasible path forward.

> The agricultural sector sits at the heart of both the climate challenge and the sustainability opportunity.

For example, the EU's Generalised System of Preferences Plus and Everything But Arms schemes demonstrate how trade preferences can promote sustainability. These schemes give developing countries a special incentive to pursue sustainable development and good governance. Countries such as Sri Lanka and Bolivia have leveraged preferential access to expand exports of organic spices and quinoa, while Switzerland's bilateral preferences for certified cocoa have supported sustainable production in Ghana and Peru. These arrangements function as de facto incentives for climate-smart agriculture. Countries can implement preferential schemes for products meeting sustainability thresholds—such as low-carbon certification, deforestation-free sourcing, or agroecological zoning. Tailoring market access to sustainability criteria can influence production practices without violating WTO obligations.

Tailoring market access to sustainability criteria can influence production practices without violating WTO obligations.

Similarly, recognizing voluntary sustainability standards (VSS) such as Fairtrade, Rainforest Alliance, and VietGAP are becoming embedded in agri-export strategies. Costa Rica's banana exports and Vietnam's fruit sector exemplify how standard alignment can unlock high-value markets. The OECD and FAO recommend that governments formally recognize credible VSS and integrate them into trade agreements and procurement policies.

Export agencies in Chile, Colombia, and Tunisia have begun leveraging sustainability as a market asset. ProColombia's green coffee campaigns, linked with certification and origin branding, show how reputational value can drive trade advantage. As highlighted in the ITC's Standards Map, branding and certification can become powerful tools for micro, small, and medium-sized enterprises (MSMEs) entering competitive markets. Customs "green lanes" for certified sustainable goods—as piloted in Kenya's horticulture sector—can reduce costs and spoilage for climate-aligned exports. Such measures can be embedded in WTO Trade Facilitation Agreement implementation plans, especially for perishable, high-value items. While the proliferation of VSS can create compliance burdens, initiatives like the ISEAL Alliance and ITC Standards Map offer platforms for enhancing knowledge, compliance, and convergence. Governments should pursue bilateral or regional recognition agreements to simplify market access for verified sustainable goods.

At the same time, greater use of public-private partnerships has been demonstrated to be an effective complement to state efforts to drive climate reductions and enhance sustainability in the agricultural sector and food supply chains. Corporates such as Nestlé and Mars are moving ahead of regulation by enforcing sustainability standards through their global sourcing operations. Public-private initiatives like the Cocoa & Forests Initiative illustrate how buyers, governments, and donors can co-invest in sustainable agriculture. These efforts are often more agile than formal trade negotiations and can serve as models for cooperation.

With respect to finance, public initiatives such as the Global Agricultural and Food Security Program and private initiatives such as AgDevCo provide unique financing and partnership platforms for investing in resilient and sustainable food systems in low-income developing countries. Such projects include certified spice exports in India and organic avocado chains in Kenya. These types of de-risking tools have the catalytic potential of to support

low-emission export sectors, especially for MSMEs, and can complement trade incentives by reducing investment barriers for sustainable practices.

Such initiatives can also be complemented by platforms like Trase, blockchain pilots in Indonesia and Colombia, and GS1 traceability protocols, which enable real-time verification of sustainability claims. Traceability is foundational for deforestation-free trade, ethical sourcing, and food safety. Governments can support scale-up by integrating such systems into customs facilitation and labelling regimes.

Maintaining Momentum on Climate and Agriculture

A new generation of trade incentives—grounded in evidence, driven by partnerships, and aligned with sustainability goals—can accelerate progress.

Trade policy can and must play a key role in the net-zero transition, despite the current turmoil in global trade policy and politics. While multilateral subsidy reform remains elusive, governments are not powerless. Coalitions of the willing can set norms through declarations and cooperative mechanisms, building on a range of existing, successful, and scalable initiatives. The WTO's TESSD process, the OECD's work on agriculture, trade, and climate, the FAO's Strategy on Climate Change, and regional pacts like the African Continental Free Trade Area (AfCFTA) offer strong starting points for developing the data and evidence base and providing the platforms needed for embedding climate-smart agriculture into trade rules. A new generation of trade incentives—grounded in evidence, driven by partnerships, and aligned with sustainability goals—can accelerate progress. As climate impacts mount and food systems face growing disruption, a wide net must be cast in the search for solutions to the climate and agriculture challenge.

Anthony Cox *is Senior Policy Advisor, Ecologic Institute.*

Enhancing Coherence Between Agricultural, Trade, and Health Policy Objectives in the Climate Crisis Context

Anne Marie Thow & Dori Patay

There is an urgent need for global trade policy instruments and international trade cooperation to support sustainable agriculture and improved food systems, nutrition, and health.

Food systems contribute around 30% of greenhouse gas emissions globally. Unsustainable agricultural practices may result in soil degradation, which impacts long term livelihoods and food security. In addition, commercialized food production, often combined with monocropping, extensive use of fertilizers, and land clearing/deforestation, contributes to higher greenhouse gas emissions and the loss of biodiversity and leaves communities vulnerable to climate change impacts. The resulting food insecurity, which is often accompanied by challenges in access to healthier foods, contributes to low quality diets, obesity and non-communicable diseases. Moreover, exposure to agrochemicals and pollution and the excessive use of antibiotics may lead to further chronic health problems.

> Food system transformation is critical for sustainable development.

Food system transformation is critical for sustainable development. At the 2021 United Nations Food Systems Summit, food systems transformation was identified as the single greatest lever with the ability to deliver on social, environmental, and economic development outcomes and help achieve the UN Sustainable Development Goals. A transition towards sustainable, resilient, and health-promoting food systems can ensure that all people have access to nutritious, safe, and culturally appropriate foods, while also protecting planetary health.

International Trade Policies and Food Systems Transformation

Global trade policies have a significant influence on food systems and diets. On the one hand, lower barriers to trade of food products, services, and green technologies may enhance food security and resilience to climate change. On the other hand, trade liberalization can also contribute to environmental, economic, and social externalities, including deforestation, livelihood vulnerabilities, and food insecurity. Increased trade in ultra-processed foods has been shown to contribute to less healthy diets and the rise of malnutrition.

There is an urgent need for global trade policy instruments to support sustainable food systems transformation. Trade rules related to technical barriers to trade, subsidies, sanitary and phytosanitary measures, and tariffs can all play a role in shifting incentives towards sustainable and healthy food systems.

It is also critical that trade agreements support domestic policy autonomy to encourage sustainable and healthy food systems. When governments work to introduce policies to mitigate the negative impacts of trade in relation to agriculture, health, and the environment, they may face challenges in trade fora related to the design of these measures. As an example, every member that has introduced mandatory front-of-pack nutrition labelling has encountered specific trade concerns at the World Trade Organization (WTO), which may cause some governments to hesitate to introduce strong labelling measures. These concerns relate to the necessity of these measures for achieving public health objectives (taking into account potential impacts on trade), their alignment with international standards, and the importance of a scientific basis to underpin their design. To date, these concerns have been addressed through dialogue, resulting in clarifications and sometimes changes to the design of measures.

Opportunities for Trade Cooperation to Make a Difference

Trade, agricultural, environmental, and nutrition policy are not inherently at odds; they all play a role in achieving sustainable development. There is a clear recognition within trade agreements of the legitimacy and importance of health and environmental objectives. Even more, trade bodies are actively working to strengthen cooperation. For example, the WTO held a one day symposium on trade and nutrition in 2024, to raise awareness of this important issue.

> Identifying points of synergies between economic, environmental, and nutrition objectives is critical to strengthen policy coherence.

Identifying points of synergies between economic, environmental, and nutrition objectives is critical to strengthen policy coherence. At the national and global level, there is a need to develop mechanisms to enable engagement between the health and trade sectors in the negotiation and implementation of trade agreements, and to strengthen the design of environmental and nutrition policy measures. This strategic engagement can enhance coherence and reduce tensions between trade, agricultural, environmental, and nutrition objectives.

The inclusion of clauses that safeguard environmental and health policy in trade and investment agreements is also critical to support the achievement of sustainable development. Such clauses aid the interpretation of agreements, and provide clarity on the points of intersection between policy mandates related to trade, environment, and health.

Sustainable Food Systems Chapters in Trade Agreements

Two new agreements have explicitly addressed sustainable and healthy food systems. Our team examined the recent inclusion of Sustainable Food Systems (SFS) chapters in the EU-New Zealand Free Trade Agreement (FTA) and the EU-Chile Advanced Framework Agreement (AFA). These chapters focus on cooperation to improve the sustainability of food systems across supply chains, from food production to food loss and waste, and Indigenous knowledge. While they contain limited enforceable provisions, these chapters are important because, for the first time, sustainable and healthy diets have been explicitly recognized in trade agreements as a common goal for governments, and one that trade agreements can contribute to achieving.

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Understanding what made the adoption of the SFS chapters possible in the EU-New Zealand FTA and the EU-Chile AFA can give insights into factors and strategies that can support inclusion of progressive measures in international trade and investment agreements.

In the EU, the SFS chapter offered an opportunity for aligning the interests of both agribusiness and environmentalist groups as it facilitates the diffusion of environmental sustainability standards abroad. This has potential benefits not only for the environment but also for maintaining the competitiveness of EU produce. In New Zealand and Chile, it helped to create public support for negotiating the EU-NZ FTA and EU-Chile AFA, respectively, by reflecting on bilateral commitments to environmental sustainability and healthy food environments.

In this context, inclusion of these non-economic considerations in a trade agreement provided an opportunity to enhance and strengthen domestic policy priorities. For example, in the EU, the Green Deal, the Farm to Fork Strategy, and the 2021 Trade Policy Review served as foundations for the SFS chapter. In Chile, domestic policies regulating antibiotics use as growth promoters paved the way for including a provision in the EU-Chile AFA on phasing them out gradually. Both in Chile and New Zealand, the national commitments made after the 2021 United Nations Food System Summit to transform food systems helped to set the tone for the SFS chapter negotiations.

Importance of Cross-Sectoral Policy Dialogue

Finally, building capacity for cross-sectoral dialogue between trade, agricultural, nutrition, and environmental policymakers is critical to support effective engagement. This will facilitate the integration of diverse insights on the contribution of food systems to sustainable development and on the scientific evidence base underpinning the design of key measures. By working together, we can develop more strategic and effective food system policy, and ensure that trade and other economic policies protect and promote improved food systems, environmental sustainability, nutrition, and health.

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Advancing Climate Justice and Climate-Resilient Development

Resilient by Design: Reimagining Trade for Climate Justice in Africa and Beyond

Saliem Fakir

Although today's geopolitical landscape is fraught with uncertainty, it also creates opportunities to advance green solutions missing from current trade frameworks. But policymakers must be prepared to introduce new trade rules that support low-carbon transitions in Africa and across the Global South.

Reconciling climate ambition with climate justice is essential to combat climate change and its impacts. Climate justice—and indeed effective and ambitious global climate action—requires trade rules that support equitable development, low-carbon futures, and just transitions. To enable climate-resilient development and transitions towards low-carbon economies, developing nations need access to green technologies, investments, and markets.

From the perspective of developing countries, many trade policies appear to negatively impact their capacity to effectively pursue environmental transitions. The securitization of global trade and the resulting emphasis on the geopolitical interests of powerful countries or blocs, for example, may weaken global supply chains and narrow access to green technologies, reinforce power asymmetries, and undermine multilateralism and regionalism efforts in developing countries.

While trade-related policies such as the European Union's Carbon-Border Adjustment Mechanism (CBAM) aim to position it as a global leader on climate action, African and other developing countries question its compliance with the Paris Agreement and perceive it as a potentially protectionist trade policy. Research suggests that African countries could lose up to $25b annually as a direct result, and that the proposed amendments may not always stand to benefit African exporters. And although the EU had economic partnership agreements with African countries prior to the African Continental Free Trade Agreement (AfCFTA), it continues to pursue fragmented bilateral deals that undermine Africa's continental integration agenda and weaken the coherence of regional trade strategies.

Another illustration is the International Maritime Organization's recent (contentious) agreement for a fuel carbon emissions tax on shipping, set to kick in only in 2028, which falls far short of the carbon levy developing countries had hoped for that could have funded low-carbon transitions, adaptation efforts, and capacity building in the most climate-vulnerable countries. In addition, mechanisms such as investor-state dispute settlement (ISDS) present a significant barrier to climate-aligned trade and investment policy. ISDS provisions in international investment treaties can often undermine African countries' policy space to regulate in the public interest and advance green industrial strategies.

Yet in discussions on how climate justice and climate ambition can be bridged amid geopolitical tensions and in a fragmented trade landscape, there are opportunities for African countries, including through scaling regional trade.

A New Trade Agenda for Climate-Resilient Development

The intersection of trade and climate policy has become increasingly salient in global discussions on sustainable development. This heightened attention is occurring as we progressively shift from a normative interest in climate

change issues to one where there is growing interest in using climate ambition as an opportunity for real economy investments. Meanwhile, global trade is taking place in the context of a broken World Trade Organization (WTO), with a definite move away from core principles of non-discrimination and cooperation to increased geopolitical and economic self-interest among certain large trading partners.

A number of advanced and emerging economies are using fiscal stimulus measures, subsidies, and a range of policy tools, including trade policies, to align climate ambition with domestic green industrial growth, thereby seeking to reconfigure the rules of global economic engagement. There is a rush to gain (green) industrial advantage—especially as a means to counter the threats emanating from China's dominant position in global production and trade in green industries, developed over the last decade on the back of combining fiscal expansion, industrial capability, technical knowledge, subsidies, capture of green technology markets, control over critical minerals, and dominance of supply chains. Meanwhile, the United States' recent decision to once again withdraw from the Paris Agreement further erodes global trust and weakens multilateral climate cooperation, raising concerns about the consistency of developed countries' commitments to the climate-development agenda.

Yet a fractious global trading system also invites realignment and the emergence of new opportunities. South Africa's G20 Presidency, despite the enormous external constraints it faces in reaching consensus, presents an opportunity to establish a framework for trade policy that is more suitable for simultaneously managing climate risks and energy transitions. Indeed, with the G20 being hosted in Africa there is an opportunity to foster a more balanced outlook, bringing together issues of climate risk, just transitions, and the need for green industrial development as part of a long-term vision to advance increased economic diversification on the continent.

Urgent attention should be given to states that are highly vulnerable to climate impacts—on their trade and economies)—that risk being further sidelined by measures such as CBAM, which, as it stands, departs from UNFCCC principles of just transition and common but differentiated responsibilities and respective capabilities and risks exacerbating inequalities within Africa. To avoid such negative consequences, the policy—which has the potential to be a decarbonizing trade tool— should be carefully implemented through a multilateral approach consistent with these principles. Indeed, there are calls for using CBAM revenues to support green transitions in low-income countries. It is also important, however, to support green transitions in those states that are highly dependent on fossil fuels for their coffers. The question here is how can trade policy be used as a tool to foster climate-resilient development and economic diversification? It is worth emphasizing that diversification is key to both economic and climate resilience.

Reimagining the Trade-Climate Nexus for Just Transitions

There are several linkages between the trade and climate regimes, typically dealt with under Article XX of the WTO framework. However, since the Appellate Body of the WTO is now defunct, there is no authoritative overview of Article XX exceptions and legal ambiguity prevails, including in relation to environmental trade measures. This can result in a chilling effect on climate regulation, not least for developing countries which fear retaliation for environmental measures they may adopt. Developing countries are disproportionately affected, weakening confidence in the multilateral trading system and stalling just transitions.

In this context, regional initiatives such as the AfCFTA offer an opportunity to reimagine trade as a development tool with a pro-social outcome. By boosting intra-African trade and resilience, the AfCFTA can help unlock new pathways to economic security, food sovereignty, and climate adaptation. In a global environment where consensus around climate-trade policies seems impossible to achieve, regional trade agreements and coalitions may offer more promising ways forward.

Unlocking Green Industrialization and Technology Transfer in Africa

While navigating the fragmentated geopolitical landscape, African countries must deepen intra-African trade in climate-resilient goods and services in priority sectors such as agriculture and food systems or energy. Strategic partnerships—rooted in development priorities rather than extractive relationships—can build long-term economic resilience.

In relation to green technologies and industries, there has been much more focus in trade policy on climate mitigation aspects rather than adaptation. There may be room—and this needs to be explored further—to build in adaptation measures in trade agreements to support climate vulnerable and poor countries' key industries from extreme weather effects. For example, Mozambique is emerging as a potentially significant player in the global critical minerals market and is also disproportionately vulnerable to the negative impacts of the climate crisis, limiting its fiscal space and ability to respond to and also embark on green transitions. There is research and policy work to be done to explore how trade policies could support Mozambique's adaptation and resilience efforts, a critically overlooked and underfunded area.

Safeguarding developmental gains, prioritizing regional integration initiatives, and diversifying supply chains to achieve climate resilience—especially in trade and investment protocols—is something that the Global South and developing countries should prioritize.

Initiatives like the African Climate Foundation's Green Industrial Development Experts Panel (GIDEP) reflect a growing appetite for homegrown solutions. GIDEP promotes green industrialization as both a development strategy and a climate solution, demonstrating African leadership on sustainable trade policy. The initiative is attracting huge interest because one of its key goals is to provide a coordinated and regional approach within Africa to deal with green industrial development.

The AfCFTA's Investment Protocol also provides the opportunity to facilitate regional value chains and intra-African investment flows and support for trade in environmental goods and services. There are many green business opportunities for Africa, especially in key sectors such as renewable energy, agriculture, waste management, and manufacturing. This could tie in well with the establishment of country platforms across the continent that bring together development partners, donors, private sector actors, and other stakeholders to streamline investment in the country's national development goals aligned with climate justice.

The Road Ahead: Reclaiming Trade for Climate Justice and Development

While the new context—marked by self-interest and a failure in global leadership—certainly contains much uncertainty and risk, it also presents an opportunity: to insert the vision for green and climate-resilient solutions that did not feature strongly within past trade frameworks. There is a need for new thinking and more equal relationships between the Global North and South, and when this turbulent period settles, we can put on the table a new trade and climate dispensation; one that honours climate ambition and supports low-carbon and green transitions across industries while upholding principles of cooperation and justice, such that developing countries are not left behind but supported on their journey.

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Advancing a Trade and Sustainable Development Agenda for African, Caribbean, and Pacific States

Junior Lodge

This article identifies the elements of a trade and sustainable development agenda for the Organization of African, Caribbean and Pacific States (OACPS) that could be advanced in the multilateral trading system. It highlights the need for an integrated policy on trade and sustainable development in OACPS countries and regions.

Sustainable development is recognized as a core principle of the World Trade organization (WTO). The preamble of the 1994 Marrakesh Agreement establishing the WTO states that the organization should conduct its activities "allowing for the optimal use of the world's resources in accordance with the objective of sustainable development." In 2001, the Doha Ministerial Declaration of the 4th WTO Ministerial Conference reaffirmed this commitment, recognizing that the pursuit of sustainable development was fully consistent with an open multilateral trading system. At the 12th WTO Ministerial Conference (MC12) in June 2022, members in the Outcome Document recognized "global environmental challenges" and noted "the importance of the contribution of the multilateral trading system to promote the UN 2030 Agenda and its Sustainable Development Goals."

In spite of this lofty political goal of operationalizing the complementarity of trade with sustainable development, WTO pursuits in this policy arena have been modest, at best. Following MC13 in early 2024, many observers were disappointed with the failure of governments to reach outcomes that advance sustainability objectives.

The level of ambition of using trade to advance sustainable development in a multilateral setting can be raised.

Most members, however, have demonstrated their willingness to engage on sustainability and trade at the WTO. For example, statements at MC13 from the Organization of African, Caribbean and Pacific States (OACPS), the Pacific Group, and the LDC group, drew attention to concerns about the environmental crises and the need for enhanced cooperation on a range of sustainability-related topics. The member-led initiatives on plastic pollution, fossil fuel subsidy reform, and trade and environmental sustainability issued statements and work plans. There also is general accord on the need to revitalize the work of the Committee on Trade and Environment.

In short, the level of ambition of using trade to advance sustainable development in a multilateral setting can be raised. Yet this impetus is running against strong geopolitical and political headwinds that are threatening the trade and sustainability agenda.

New Trade and Sustainable Development Impulses

In this broader context, a number of ideas and frameworks have emerged to recalibrate the multilateral trading system by placing the pursuit of sustainable development at its core. Proposals have also emerged for developing countries to craft their own sustainable trade agenda, with A Sustainable and Inclusive Trade Agenda for CARICOM (Caribbean Community) being prominent. This comprehensive agenda proposes focusing on policy coherence, aligning trade policies with environmental and social objectives, capacity building to enhance institutional and regulatory capacity, and strengthening intra-regional trade to build resilience.

The OACPS could seek to replicate this coherent cluster of policies across its diverse membership. OACPS members already contribute to WTO trade and sustainability as can be evinced from Cabo Verde, Chad, Fiji, The Gambia, Maldives, Senegal, and Vanuatu co-sponsoring the ministerial statement on trade and environmental sustainability, while Barbados, and Fiji are two of the six coordinators that championed the ministerial statement on plastic pollution.

The OACPS has long focused on delivering the WTO development dimension through increased flexibilities on tariff liberalization reduction commitments in agricultural and industrialized goods coupled with the delivery of trade capacity building measures. However, the group's more muscular effort was best expressed by its collaboration with the EU to craft a new architecture on special and differential treatment as captured in Section II of the WTO Trade Facilitation Agreement (TFA).

Elements of an OACPS Trade and Sustainable Development Agenda

The OACPS could support the emergence of an ambitious WTO trade and sustainability agenda by pursuing the following plan.

First, seek to negotiate a plurilateral agreement (similar to the Government Procurement Agreement with benefits limited to parties) on trade and sustainability. Given the expanse of sustainability disciplines, the initial phase should seek to support green industrialization with thrust on market access for both goods and services, trade regulatory measures (including disciplines on subsidies), and trade-related technical assistance. The TFA (and the Investment Facilitation for Development Agreement) could be replicated in terms of non-industrialized members being able to self-designate their level of readiness to adopt commitments.

Second, a rendez-vous clause could be inserted to later address a raft of additional built-in agenda items such as sustainable tourism, food security, the blue economy, and renewable energy. The inclusion of these commercially relevant sectors would serve to increase the level of ambition and resultantly enhance the impact of trade on OACPS sustainable development.

Third, establish a dedicated trade-related technical facility to enhance sustainable development in developing and least developed countries. Industrialized countries have long resisted empowering the WTO to deliver trade-related technical assistance. That resistance notwithstanding, the WTO manages the Enhanced Integrated Framework (EIF), Standards and Trade Development Facility (STDF), and the Trade Facilitation Agreement Facility (TFAF). The WTO has also launched the Cotton Partnership with AFREXIMBANK, Better Cotton Initiative, FIFA, ILO, ITC, and UNIDO to support African cotton farmers capture greater value from their exports. A dedicated facility to promote trade and sustainability could be modelled on the EIF with its institutionalized partnership among least developed countries, donors, and multilateral agencies. International development partners such as the Accelerated Partnership for Renewables in Africa, Global Development Initiative, ITC, OECD, UNIDO, UNCTAD, WIPO, and World Bank could constitute core membership of this trade-related technical assistance platform.

Fourth, establish a platform to facilitate strengthened coherence between trade and all facets of global sustainability initiatives. This would entail a clearing house to ensure consistency between the UN Sustainable Development Goal agenda, climate change negotiations (UNFCCC), agricultural development (FAO), industrial development (UNIDO), trade and development (UNCTAD), shipment of hazardous waste (UNEP), and financing for development (slew of international financing institutions, development banks, and donors). In addition to securing increased coherence, deployment of this approach would also arrest OACPS members' challenges reflected in both weak trade and sustainability governance frameworks and limited negotiating capacity.

Fifth, develop innovative solutions to trade capacity building measures aimed at enhancing green industrialization in OACPS countries. UNIDO has crafted a number of programmes to promote sustainable industrial development in developing and least developed countries, most notably, the Green Industry Initiative, Green Industrial Policy Programme, and Partnership for Action on Green Economy. One approach worth replicating is the EU strategic partnerships on critical raw materials.

Green Industrialization in OACPS Countries

For example, the EU signed a memorandum of understanding (MOU) with Namibia in November 2022 to develop the southern African country's green hydrogen. The partnership combines trade (local value content), mobilization of private investment complemented by both Global Gateway and European Investment Bank financing, and the development of value chains (support infrastructure and industrial capacities). The MOU also offers the promise of both technology transfer and skills partnership to promote sustainable industrialization. It should be recognized that the EU interest in critical raw materials is triggered by its need to strengthen economic security. However, the major global trade and development partner's approach of integrating trade, investment, infrastructure, and logistics support measures is worth extending to the overall pursuit of sustainable development in OACPS countries. This EU approach embedded in these strategic partnerships on critical raw materials could also serve to inform effective implementation of the Samoa Agreement where circularity, green industrialization, beneficiation, and the blue economy are recognized as key elements in pursuit of sustainable development.

The EU's pursuit of Clean Trade and Investment Partnerships (CTIPs) could also be a useful model to foster green industrialization partnerships in OACPS countries. These EU instruments will seek to establish expansive frameworks for partnerships with third countries on energy, critical raw materials, technology, trade, and investment with the aim of securing improved EU access to raw materials, clean energy, and clean technology. Similar to the bloc's strategic partnership on critical raw materials, the innovation of CTIPs rests with combining the promotion of private sector investment with public financial guarantees, new public procurement rules, guaranteed offtake agreements, and trade-related technical assistance. The EU and South Africa recently agreed to launch CTIP negotiations to, inter alia, develop cleaner supply chains and support battery production in the major African economy while developing regulatory cooperation.

> These five elements of an OACPS approach to prosecuting a strengthened trade and sustainable development agenda in the multilateral trading system reflects the acute vulnerability of climate change on the group's members.

Conclusion

These five elements of an OACPS approach to prosecuting a strengthened trade and sustainable development agenda in the multilateral trading system reflects the acute vulnerability of climate change on the group's members. This vulnerability is most intensely manifest in small island developing states (SIDS) that are heavily impacted by the climate emergency. Beyond this, most OACPS countries experience heavy commodity dependence, with UNCTAD reporting that 81% of landlocked developing countries, 74% of least developed countries, and 61% of SIDS are commodity-dependent. Promoting an integrated green industrialization agenda in the WTO presents the OACPS with the chance not only to mitigate the pervasive impact of climate change but also escape this commodity dependence.

OACPS efforts to advance its trade and sustainability agenda within the WTO should be complemented by massive undertakings to bolster renewable energy production. It is well recognized that the availability of reliable and cost-efficient renewable energy remains a sine qua non to promote beneficiation and industrialization from mining, extraction, and processing in OACPS countries. However, the value of renewable energy extends to other main economic sectors as showcased in a recent IRENA report on agri-food value chains in Guinea. But perhaps the best indicator of the link between trade and sustainability might emerge from the Democratic Republic of Congo. Imagine leveraging the OACPS member country's immense cobalt holdings (source of 70% of global cobalt exports) to locally develop lithium batteries to bring electricity to a society where the electrification rate currently stands at 19%.

Major trading partners such as China, the EU, and the United States have demonstrated the robust return of industrial policy. It therefore becomes essential that OACPS countries embrace this opportunity to develop national and regional/continental strategies to advance green industrialization. In that context, the group can build on two major policies, namely a Position Paper on Critical Raw Materials and a Revised Private Sector Development Strategy. The 2023 African Leaders' Declaration on Climate Change and Call for Action represents another important contribution that could inspire the development of a coherent trade and sustainable development strategy in other polities. However, as documented in the policy paper on a sustainable and inclusive trade agenda for CARICOM, many OACPS countries and regions lack an integrated policy on trade and sustainable development. Addressing this key OACPS policy lacuna constitutes the highest priority before a concerted pitch can be made in the WTO.

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Towards a Fairer Global Trade and Finance System for a Just and Inclusive Climate Transition

Shimukunku Manchishi

The global transition to a low-carbon economy highlights stark inequalities, as developed countries surge with green industrialization while Africa and much of the Global South are hamstrung with structural and institutional barriers. This calls for crucial reforms in trade, finance, and technology transfer to ensure a truly just and inclusive climate transition.

The world is experiencing a sweeping transition towards a low-carbon economy, driven by the mounting threat of catastrophic climate change and anchored in net-zero commitments and other regulations. This is changing the global competitive landscape as developed countries aggressively invest in green frontier technologies leveraging first mover advantage. This development has been buoyed by the emergence of green industrial policies in developed countries and large emerging economies—evident in the United States' Inflation Reduction Act, China's Made in China 2025, India's National Solar Mission, and the European Union's Green Industrial Deal and Net-Zero Industry Act.

In the Global South, green industrialization is gaining impetus in policy initiatives and discourse. Notably, the 2022 African Union Extraordinary Summit on Industrialization demonstrated a pledge towards the alignment of economic growth with international environmental agreements. However, implementation remains slow owing to uneven access to financing, fiscal constraints, and limitations on policy space influenced by conditionalities attached to foreign aid or bilateral investment treaties, among others. Consequently, the Global South—in particular Africa—continues to lag behind in the global green industrialization revolution.

Imbalanced Green Industrial Investments and Unfulfilled Commitments

Developed and emerging countries are leading in domestic R&D investments in green industry. Green technologies—measured through patent activity—remain highly concentrated, with about 85% of companies involved in green patent activity located in five countries—Japan, China, the United States Germany, and the Republic of Korea. Industrial firms from developing countries (excluding China) together hold a mere 2% of green patents. Likewise, the geographic deployment of renewable energy remains uneven; as of end 2023, Asia, Europe, and North America accounted for almost 85% of global installed capacity while Africa accounted for a mere 1.6%. Global investment in renewable power and fuels is strikingly unequal, with China, the United States, the European Union, and the United Kingdom dominating while Africa is at a very distant bottom.

This stark imbalance raises concerns about the principle of climate-resilient development and just transitions, which, by definition, should be fair and equitable for all. Granted, the Paris Agreement, acknowledges the unique circumstances of the Global South in Articles 2, 9, 10, and 11, underscoring the need to respond to climate change in the context of sustainable development and efforts to eradicate poverty, including by "making finance flows consistent with a pathway towards low greenhouse gas (GHG) emissions and climate-resilient development. "There is also a pledge towards technology transfer and capacity building to developing countries to support the implementation of the Paris Agreement. Hitherto, pledges towards finance, technology transfer, and capacity building are largely unfulfilled.

Structural Barriers to Green Industrialization in Africa

Africa faces entrenched structural constraints embedded in its economies. Primarily, the low-value trap of commodity production and trade within value chains remains a key constraint. The continent remains dominated by the extraction of raw materials; 45% of Africa's exports are raw materials whereas in Latin America, South Asia, and East Asia raw materials account for 31%, 8%, and 6% respectively. The share of manufactured goods in total exports for Africa is 34%, which is lower than other regions such as East Asia (83%), low- and middle-income countries excluding African countries (74%), South Asia (68%), Latin America (45%), and the world average (70%). Africa's participation in global value chains is concerning as higher-income countries are more involved in supply chains. This hinders green industrialization by relegating African countries to the role of raw material suppliers, reinforcing dependency on external markets and hindering the development of resilient economies.

At the core of this challenge is inadequate infrastructure, which falls short of the intricate demands of processing plants. There is also a scarcity of local skilled labour necessitating substantial investment in education and training. Limited access to finance, especially for local entities, remains a major obstacle. Besides, unfavourable policy environments disincentivize investments in key value addition sectors. The lack of industrial and technological sophistication also keep a number of African economies at extreme systemic weaknesses, compelling them to export primary unprocessed products. Unreliable energy supply also remains a major impediment.

A Rigid Global Financial Architecture

The asymmetries and imbalances of the global financial architecture also structurally impede Africa, having failed to adapt to Africa's unique climate finance needs. The multilateral finance system remains constrained by a limited capital base, fragmented mandates, and outdated instruments, thereby not responding to the unique needs of African countries. Access to climate finance and the cost of borrowing remain major bottlenecks in African countries, especially regarding green investments like renewable energy infrastructure.

Access to climate finance and the cost of borrowing remain major bottlenecks in African countries, especially regarding green investments like renewable energy infrastructure.

For instance, the weighted average cost of capital for onshore wind power and solar photovoltaic between 2022 and 2024 was about 12% in developing economies compared to 4% in developed economies. This difference stems from factors like political and economic instability, currency risks, and underdeveloped financial markets, which collectively elevate the investment risk. Targeted policy and financial interventions such as legally binding offtake agreements, sovereign guarantees, and development finance risk and insurance can help lower the cost of capital. Ominously, the unpredictable pledge-based model under the United Nations Framework Convention on Climate Change (UNFCCC) offers non-concessional finance, trapping countries in unsustainable fiscal paths. Overall, the quality and quantity of finance delivered within and outside the UNFCCC mechanisms are inadequate.

The Rise of Unilateral Trade Policies

There is a rise in Global North unilateral trade policies—such as the European Union's Carbon Border Adjustment Mechanism (CBAM)—which use environmental regulations to protect national interests at the expense of trading partners. These fees are justified as necessary tools to prevent carbon leakage, yet under the surface of their noble intentions lies a troubling contradiction. The imposition of such carbon fees on the products of developing countries that have historically contributed little to carbon emissions goes against the principle of common but differentiated responsibilities (CBDR), a cornerstone of international climate agreements. CBDR implies that while all nations must take climate action, the degree of responsibility should be shaped by historical contributions and current capabilities. Evidently, the measures have a demonstrably disproportionate impact on Africa, which lacks the technology and resources to adhere to stringent measures for its exports to the Global North. A study showed that across a range of models, CBAM could reduce Africa's GDP by 0.91% and that its impact as a share of GDP would be higher for African countries.

A Call to Reform by Seizing the Moment

It goes without saying that countries in the Global South must make investments and increase their participation in green industries; failure to do so runs the risk of being trapped in new dependencies and remaining at the bottom of the value chain of green manufacturing. Nonetheless, the global transition to a low-carbon economy offers developing countries an opportunity to leapfrog technologically and alter their economies. This will require international trade cooperation to address some of the inherent structural challenges.

The World Trade Organization (WTO), though under strain, remains a pivotal forum for supporting the Global South in realizing a just transition. Developed countries must hold their end of the bargain regarding special and differential treatment (S&DT) as outlined in various agreements. While S&DT has historically been ineffective in practice due to its non-enforceability and lack of clarity, reforms can position it to become more effective. S&DT can play a crucial role in the transition to a low-carbon economy for developing countries through access to technical support to develop renewable energy technologies and infrastructure as well as some industrial policy measures for renewable energy equipment and technologies.

The WTO can also facilitate the use of flexibilities in the Agreement on Trade-Related Aspects of Intellectual Property Rights. This will allow developing countries to address climate change challenges through compulsory licensing and exceptions to patent rights. Such a move can facilitate access to and transfer of climate-friendly technologies enabling mitigation and adaptation efforts.

Towards a Fairer Global System

Developed economies that are applying unilateral policies against imports—"green protectionism"— should rather support a positive trade agenda to back developing countries in their mitigation efforts and adaptation development strategies. Systemic efforts to reduce domestic and global inequality could make more contributions to reducing carbon emissions. Therefore, these countries should pursue more transparent and science-based approaches.

In essence, the global transition to a low-carbon economy highlights stark inequalities, as developed countries surge with green industrialization while Africa and much of the Global South are hamstrung with structural and institutional barriers. This calls for crucial reforms in trade, finance, and technology transfer to ensure a truly just and inclusive climate transition.

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From "Greening Trade" to "Trading Green": Can Developing Countries Turn EU Unilateral Measures Into an Advantage?

Alfonso Medinilla

The ability of developing countries to navigate the EU's evolving green trade architecture will depend on whether they can turn externally imposed rules into domestic opportunities. Strategic engagement, regional coherence, and sustained investment in local capabilities can make the difference between treating these measures as restrictive barriers, or using them as catalysts for industrialization and long-term market opportunities.

The European Union's trade policy is evolving, from an "old" trade and development agenda—built around negotiated agreements and preferential market access—towards a "new" more unilateral approach to trade and investment in key goods, increasingly shaped by sustainability-related measures.

From the Carbon Border Adjustment Mechanism (CBAM) and the EU Deforestation Regulation (EUDR) to corporate sustainability due diligence rules (CS3D/CSRD), or new product standards through the eco-design for sustainable products regulation (ESPR), the EU increasingly extends the application of its internal sustainability requirements to imported goods.

For many developing countries, these new and upcoming measures are often seen as burdensome and intrusive, and not without reason. They tend to come with high compliance costs, limited consultation, and little room for dialogue. Additional expenses associated with such measures include hiring verification services to meet reporting requirements under CS3D, providing facility-level emissions data under CBAM (often unavailable at firm-level), or facing the indirect costs of losing contracts to suppliers that can more easily comply. In all but a few cases, the complexity and cost of accessing the EU market will increase.

Why a Proactive Approach Matters

Yet, pragmatically, there are compelling reasons for developing countries to engage proactively, both individually and collectively, to adapt to and shape the implementation of new sustainability-related trade measures.

There are compelling reasons for developing countries to engage proactively in the implementation of new sustainability-related trade measures.

These measures are a signpost for market direction. The EU is the first major economy to make sustainability—and even embedded emissions—a condition for market access, but others are following. The UK will introduce a CBAM in 2027, and major economies such as Japan, Canada, and China are exploring similar border adjustment mechanisms. Early compliance with product standards—from traceability under the EUDR to circular-design requirements under the ESPR—can help safeguard long-term market access, even if for many developing countries this means continually adapting to evolving external requirements; a moving target that can strain capacities and competitiveness.

Furthermore, while there has been some political "green backtracking" in Europe, the overall trajectory remains steady. Implementation delays for the EUDR or simplifications of the CS3D so far have been technical adjustments, not reversals, often driven by European private sector concerns; not those in third countries. The EU's commitment to using trade as a lever for its green transition remains largely unchanged.

Turning Compliance Into Competitiveness

Even if "going green" will likely be costly and cumbersome, in some cases EU green trade measures may create new opportunities. Producers that can move faster to decarbonize, attract new investments in green industries and hydrogen economies, or otherwise take advantage of new product standards and reporting requirements, may be able to lock in market access early, or position themselves for longer term export opportunities, provided investments and clear demand signals are there.

> Some developing countries and sectors are already finding ways to use new rules to strengthen competitiveness and attract investment.

Some developing countries and sectors are already finding ways to use new rules to strengthen competitiveness and attract investment. For example, Ghana and Côte d'Ivoire have introduced traceability systems in their cocoa sectors that, if compatible with EU requirements, could give them a solid basis for EUDR compliance.

While we often focus on the short-term, direct impacts of CBAM on existing exports, for some, the potential opportunity for new energy-intensive industries in the medium to long term may be far greater than the short-term costs. The Middle East and North Africa region, for example, has the potential to become a highly competitive exporter of green iron, due to its unique renewable energy potential and existing industrial base.

Other countries, like Mozambique, could leverage their hydropower potential to decarbonize existing aluminium production, improving its market position under CBAM considerably once indirect emissions are included. Egypt Aluminium also recently moved ahead with a 25-year Power Purchasing Agreement with a 1.1 GW solar and collocated battery storage project developed by Norway's Scatec, making it one of the region's first major decarbonization projects that is directly linked to CBAM.

Beyond Reactive Compliance

While early movers may be able to lock in markets and signal investment readiness, there are limits to what a reactive approach can achieve. Meeting EU standards is not the same as shaping global ones. Imposed rules alone are unlikely—as the EU hopes—to create sufficient incentives for technological change like decarbonization or for significantly altering corporate behaviour, let alone promoting economic transformation. Developing countries will increasingly need to define their own pathways for green trade and industrial transformation.

Examples from the agricultural sector include palm oil certification in Indonesia and Malaysia and the trustea code in India. A key challenge is to ensure these homegrown standards and practices—which arguably better reflect local conditions—are recognized internationally. This signals a need for stronger cooperation on equivalence and mutual recognition between the EU and partner countries.

In other sectors, European measures may go far beyond what exists locally. Few developing countries, for example, have carbon pricing mechanisms in place, let alone the capabilities to monitor industrial emissions, which may increase their compliance burden or lead to higher costs by relying on default emissions values.

At a minimum, countries should strive to localize ESG services as much as possible. Building domestic ecosystems for emissions monitoring, traceability, and due diligence services can reduce dependence on costly foreign intermediaries, creating a pool of strategic skills and capabilities that countries will require for the foreseeable future. Doing so will also strengthen their negotiating position towards the EU on timelines and implementation measures, as well as increase their investment readiness for other markets.

Regional alignment could take this to the next level. Regional institutions and initiatives like the African Continental Free Trade Area (AfCFTA) could provide a platform for harmonizing green trade standards, share the cost of traceability systems, and also potentially emissions monitoring systems, and strengthen regional value chains and collective bargaining power vis-à-vis external partners.

> It is of great importance that developing countries take ownership of the green trade agenda and move the discussion away from the unilateral space.

Yet, of even greater importance is for developing countries to take ownership of the green trade agenda and move the discussion away from the unilateral space. EU unilateral measures are shaped by internal market dynamics, like the Emissions Trading System (ETS) reform for CBAM or corporate reporting rules for CS3D. They are not designed with partner realities in mind. In this context, multilateral initiatives such as the COP30 presidency proposal for a global integration of carbon markets are essential to start reshaping green trade as a global concern, driven both by developing countries and industrialized markets such as the EU.

All of these efforts can help build a stronger case for climate-compliance finance. The complexity and costs of "going green" are undeniable, and, in many cases, there is no clear test case for mutual benefits under green trade regimes. The EU and its partners should scale up dedicated support, be it through dedicated Clean Trade and Investment Partnerships or a new "aid-for-green-trade" approach under its Global Gateway investment programme.

An Uneven Playing Field

The decarbonization of the EU and other markets, and the proliferation of green trade measures, will lead to a reconfiguration of global economic opportunities. Some developing countries will be able to leverage their renewable energy potential, industrial capabilities, or existing regulatory frameworks better than others.

It also bears repeating that the playing field is uneven from the start. Developing countries are asked to comply while the EU changes the rules with only limited regard to their concerns and capacity to absorb the costs of an accelerated sustainability transition.

Yet regardless of the fairness question, the ability of developing countries to navigate the EU's evolving green trade architecture will depend on whether they can turn externally imposed rules into domestic opportunities. Strategic engagement, regional coherence, and sustained investment in local capabilities can make the difference between treating these measures as restrictive barriers, or using them as catalysts for industrialization and long-term market opportunities.

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Supporting Climate Adaptation and Just Transitions

Why Regional Initiatives Are Key to Addressing the Catastrophic Risks of Climate Change and Underdevelopment

Kennedy Mbeva

As gridlock in global governance persists, the role of regional initiatives in driving the global trade and climate agenda cannot be overstated. They offer a flexible, context-specific, and innovative framework that is essential for countries facing the brunt of economic and environmental shocks. This article focuses on Africa as an example of the potential of regional initiatives as a means to confront climate and developmental challenges.

Regional initiatives are emerging as the engine driving global trade and climate policy in an era when multilateral cooperation appears to be in retreat. Global power politics are increasingly supplanting collaborative initiatives, as tariff wars and shifting alliances threaten long-established trade rules. Meanwhile, efforts to tackle climate change are faltering even as its impacts worsen—a paradox that imperils both the global economy and the most vulnerable countries.

Fragile states, which have contributed little to global challenges, bear the brunt of environmental and economic shocks. These countries are frequently marginalized by a global trading system that offers scant support, even as they face escalating climate risks. The urgency of the situation demands a fresh approach to global challenges, particularly in rethinking the interplay between trade and climate policies. As geo-economic imperatives gain precedence, regional initiatives present a promising means to counterbalance the fragmentation of global governance.

The urgency of the situation demands a fresh approach to global challenges, particularly in rethinking the interplay between trade and climate policies.

The Advantages of Regional Trade Initiatives

Regional trade initiatives offer three distinct advantages over traditional multilateral systems. First, they provide flexibility. Smaller groups of countries with shared interests can craft bespoke solutions that address their specific needs. The Africa Continental Free Trade Agreement (AfCFTA) exemplifies this approach. Concluded in 2018, the AfCFTA eschews a one-size-fits-all environmental policy in favour of a bottom-up method, whereby member states develop their own guidelines to integrate trade and climate objectives.

The AfCFTA's treaty's preamble acknowledges the need to connect trade and the environment, but it leaves the operational link to national trade strategies rather than imposing top-down obligations. To support this, the UN

Economic Commission for Africa (UNECA) has developed guidelines to help countries incorporate climate change considerations into their trade policies. For instance, Namibia has aligned its industrial strategy with climate action, while Côte d'Ivoire has integrated its trade priorities with commitments under the Paris Agreement. Such flexibility allows countries to tailor policies that directly confront their developmental challenges without being forced into rigid frameworks.

Second, regional initiatives are better suited to reflect local contexts. By designing policies that resonate with the unique circumstances of each region, these initiatives can more effectively address the nature of the challenges faced. In the Horn of Africa, the Intergovernmental Authority on Development (IGAD) has devised a regional climate policy that prioritizes adaptation measures for countries exposed to severe climate impacts. This policy is crafted not only to mitigate environmental risks but also to address broader developmental issues, such as political instability and civil unrest, which are often exacerbated by climate change. By focusing on local realities, regional initiatives can offer more practical and immediate solutions compared to the often-theoretical prescriptions of global agreements.

Third, regional platforms foster innovation in governance. The East African Community (EAC) has demonstrated this by expanding its remit beyond traditional trade liberalization. Through initiatives such as the EAC Climate Change Fund, the region has enhanced its capacity to attract climate finance and coordinate comprehensive climate policies. This experimentation in governance paves the way for solutions that integrate trade, climate, and development objectives into a coherent strategy. Such innovative approaches not only bridge the gap between policy and practice but also create models that could be replicated in other regions facing similar challenges.

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African countries have a long history of aligning trade and climate agendas. Initiatives such as the Africa Energy Transition Bank, administered by the Africa Export Import Bank, are innovative examples of efforts to transition towards cleaner energy sources. Similarly, export finance instruments provided by the African Development Bank are being reconfigured to support both climate action and economic development. These regional measures are gaining importance at a time when older trade instruments—such as the Africa Growth and Opportunity Act (AGOA) and EU preferential schemes—are gradually losing their influence. This shift reflects the US and EU's move towards more strategic, reciprocal trade agreements and an increased focus on continental economic integration in Africa.

Innovative and Context-Sensitive Approaches

Beyond policy measures, regional initiatives can serve as laboratories for testing new models of cooperation. In a fragmented global system, these initiatives allow countries to experiment with novel approaches to governance, trade liberalization, and sustainable development. They offer a platform for dialogue among countries that share common challenges, enabling them to pool resources and expertise to address issues more effectively. Such collaboration can generate valuable lessons that may later inform broader global governance frameworks and help reshape the international order.

Moreover, regional initiatives help to reframe the narrative around underdevelopment. For many fragile states, underdevelopment is not merely an economic condition but a catastrophic risk that undermines the prospects of improving citizens' lives. The global trading system, by marginalizing these countries, often exacerbates their challenges, leaving them exposed to the dual threats of economic instability and environmental degradation. Regional initiatives, by contrast, provide a more inclusive and context-sensitive approach that directly addresses the root causes of underdevelopment. This is evident in initiatives such as "Green Pan-Africanism," where regional collaboration seeks to integrate trade, climate, and development policies in a way that supports sustainable progress.

> Regional initiatives provide a more inclusive and context-sensitive approach that directly addresses the root causes of underdevelopment.

A Promising Route

As gridlock in global governance persists, the role of regional initiatives in driving the global trade and climate agenda cannot be overstated. They offer a flexible, context-specific, and innovative framework that is essential for countries facing the brunt of economic and environmental shocks. Rather than relying solely on a gridlocked multilateral system, policymakers must recognize that regional solutions are not merely an alternative—they are a necessity. By harnessing the strengths of regional initiatives, countries can transform fragmented global governance into a more coordinated effort that effectively addresses the intertwined challenges of trade, climate change, and underdevelopment.

In this era of intense geo-economic competition, regional initiatives provide a promising route to reinvigorate global governance. By adopting these strategies, policymakers can forge a more secure and sustainable future for vulnerable countries, ensuring that the global trade and climate agenda advances in a genuinely inclusive and effective manner.

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Adaption to Climate Change and the International Trading System: Addressing Losses in Productive Capacity

Jodie Keane, Bernardo Arce, & Laura Kelly

This article provides some reflections on how changes to international support measures and trade policy could better support adaptation efforts in developing countries and address the loss of productive capacity induced by climate change.

Climate change is negatively affecting the production of key commodities that many low-income countries depend on for their export earnings. Extreme heat is also affecting workers in agriculture and factory settings reducing their productivity. While the idea of compensation for the impacts of climate change in low-income countries has been agreed and the Fund for Responding to Loss and Damage established, there is an absence of any trade-related adjustments or support mechanisms. Given the need to better assist countries bearing the brunt of a 1.5oC temperature rise now, this article provides some reflections on how changes to international support measures and trade policy could better support adaptation efforts in developing countries and address the loss of productive capacity induced by climate change.

Need for New Approaches

Increasing climate variability is exacerbating the well-known challenges faced by producers and economies dependent on primary agricultural production and commodity export earnings. It is recognized that low-income countries need support for climate change adaptation and resilience building, with funding beginning to flow through initiatives such as the World Bank's International Development Association and the Green Climate Fund for example. But these and other sources of finance and development assistance, including aid for trade, need to be well coordinated. Otherwise, there is potential for a proliferation of funds and creation of new silos.

Changes are already underway across some of the national institutional arrangements created by the multi-agency partnership of the Enhanced Integrated Framework to help least developed countries (LDCs) better coordinate, secure, and channel new sources of finance. For example, The Gambia has pioneered through developing an aid for trade project to access trade-related climate finance and its approach is being considered for replication in Rwanda, South Sudan, and Tuvalu. Existing national institutional arrangements should be utilized and strengthened to create country platforms that enable capacity-constrained countries to secure, mobilize, and channel climate finance while avoiding duplication of efforts..

In addition, greater utilization of investment facilitation, including implementation of the Investment Facilitation for Development Agreement at the World Trade Organization (WTO), could facilitate the blending of public and private finance in partnership with development finance institutions to better secure investments in climate-resilient infrastructure in LDCs and small island developing states (SIDS). These investments are needed to address the physical effects of climate change such as floods, droughts, and other extreme weather events that destroy energy and transport infrastructure with resultant impacts on productive capacities.

Adapting Policy Frameworks

One outcome from the WTO's Thirteenth Ministerial Conference (MC13) in early 2024, referred to in the Abu Dhabi Ministerial Declaration, was the reiteration of the centrality of the development dimension in its work. Provisions on special and differential treatment (S&DT) for developing and least developed countries permit deviation from the principle of most favoured nation—many poorer countries rely on S&DT and trade under preferential regimes, including the European Union's Generalised Scheme of Preferences (GSP). However, preferences tend to have low utilization rates and there is a recognized need for change. Only recently has greater consideration of environmental vulnerability begun to feature more prominently within some countries' preferential trade arrangements.

Recent Innovations

One recent innovation, the United Kingdom's Developing Countries Trading Scheme, refers specifically to environmental vulnerability criteria when determining which countries receive enhanced trade preferences. This has expanded the scope of eligible countries and meant that LDCs like Bangladesh—one of the most climate vulnerable economies in the world—has not faced the spectre of increased tariffs as it moves to graduation (a process which should be celebrated and not feared). The EU could reflect on this innovation and emulate it as the trading bloc reviews and updates its GSP.

There is a need for greater reflection on how existing tools like the GSP but also broader special and differential treatment provisions can adapt to built-in environmental vulnerabilities.

There is a need for greater reflection on how existing tools like the GSP but also broader S&DT provisions can adapt to built-in environmental vulnerabilities. Currently, the GSP does not fully extend to services trade. While progress has been made on initiatives such as the LDC services waiver at the WTO, uptake remains low. Moreover, there is no similar type of waiver for climate vulnerable small economies. The MC13 Ministerial Decision related to the Work Programme on Small Economies—which refers to climate change—is suggestive of greater appetite to consider better tailored support measures in response to vulnerability.

Within the climate change arena, the issue of so called "climate visas" for extremely vulnerable economies, in view of the losses in productive capacity wrought by climate impacts, has been proposed but is controversial. Equally, within the global trade arena, mention of politically sensitive issues like migration remains challenging. But innovative research suggests mutual gains from new approaches on progressive labour mobility policies to support national green transitions. There is increasing demand for skillsets to develop green industrial hubs for example. Facilitating the movement of labour to support implementation of climate mitigation and adaptation goals—even if controversial—deserves further attention by WTO members to enable learning and the development of human capital.

Looking Ahead

Transfer of technology is an area of focus for both the WTO and climate discussions under the United Nations Framework for Climate Change (UNFCCC). There are a growing range of technologies that can support LDCs and SIDS on climate change adaptation, including in implementing their national adaptation plans. These technologies include meteorological early warning systems, climate resilient crops, irrigation technologies, and artificial intelligence to model the impacts of change among others. But accessibility alongside absorptive capacity are key to enable effective transfers.

There are a growing range of technologies that can support LDCs and SIDS on climate change adaptation, including in implementing their national adaptation plans.

In their February 2025 submission on trade-related climate measures to the WTO Committee on Trade and the Environment, LDCs prioritize technology transfer, and recent surveys across WTO members similarly suggest a greater need to focus on climate-related technologies. Tangible outcomes are needed and the relationship between the WTO and institutions that support technology needs assessments and action plans, including the UNFCCC and the United Nations Technology Bank for the Least Developed Countries, should be further explored to facilitate access to relevant technologies for adaptation in climate vulnerable economies.

Both increased flows of finance and implementation of agreed policy frameworks are vital to adaptation and part of overall economic resilience building. Looking ahead, progress on the implementation of the agreement reached on investment facilitation for development, accompanied by more tailored support at the next WTO ministerial conference, could provide a much-needed boost to export diversification and efforts to adapt to the realities of built-in climate change for the most vulnerable economies.

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Inclusive Ecodesign Requirements for a Just Transition

Colette van der Ven & Cláudia Azevedo

The Ecodesign for Sustainable Products Regulation (ESPR), which entered into force in July 2024, is a central instrument of the EU's ambition to lead the circular economy by 2030. Its ecodesign requirements, comprising both performance and transparency requirements, will be instrumental in incentivizing more sustainable value chains. Early and meaningful engagement with trading partners, in addition to taking into account trade principles related to interoperability, will be key to ensuring the circular economy transition envisioned by the ESPR will also be just.

The European Union's Clean Industrial Deal, which seeks to boost the competitiveness and resilience of EU industry while reducing carbon emissions, highlights the circular economy as a strategic priority, emphasizing its critical role not only in lowering CO2 emissions but also in maximizing the EU's limited resources and reducing trade dependencies. It references the Ecodesign for Sustainable Products Regulation (ESPR), a flagship EU initiative which entered into force in July 2024. The ESPR establishes a framework for the setting of ecodesign, performance, and information requirements that most products consumed within the EU, including imports, must comply with to be placed on the EU market.

In particular, the ESPR provides the legal framework for the Commission to establish performance requirements to extend the life cycle of the product, including by enhancing a product's durability, repairability, reusability, recyclability, and remanufacturing, while seeking to reduce a product's material footprint, including through emphasizing the use of recycled material.

Furthermore, the ESPR establishes information requirements through Digital Product Passports. The information to be provided would include, inter alia: a repairability and durability score; information about a product's carbon footprint or environmental footprint; information on how to ensure optimum durability; and information on treatment facilities or places for disassembly, recycling, or reuse. The ESPR further includes a ban on the destruction of unsold goods. Secondary legislation will establish sector- and product-specific performance requirements for a select list of priority products identified in the 2025-2030 Working Plan: textiles and apparel (1st priority), iron and steel (1st priority), furniture (2nd priority), tyres (3rd priority), mattresses (4th priority), and aluminium (4th priority).

Implications of the ESPR on Trading Partners

The ESPR is a commendable effort from the Commission to accelerate a transition towards a more circular economy, tackling key aspects of product durability and sustainability. At the same time, it will have profound trade implications. While it has not received similar attention compared to other green trade regulations in the EU, such as the Carbon Border Adjustment Mechanism (CBAM) or the Regulation on deforestation-free products (EUDR), the ESPR is a non-tariff measure that could negatively affect EU market access. Indeed, the envisioned performance and information requirements will likely increase the costs for manufacturers seeking to export to the EU, with businesses in developing countries and small and medium-sized enterprises being disproportionately affected. These costs are incurred as manufacturers adjust their production methods and product design to comply with the ESPR, and as they engage in reporting and conformity assessment procedures to establish compliance.

> The ESPR is a commendable effort to accelerate a transition towards a more circular economy. At the same time, it will have profound trade implications.

The ESPR's impact on trade will differ by sector and by trading partner. For instance, for textiles and apparel—a number one priority sector under the 2025-2030 Working Plan—trade implications will depend on the gap between the ESPR and the domestic regulatory framework, existing compliance of garment manufacturers with voluntary sustainability standards, the existence of a digital infrastructure to support Digital Product Passports, and the resource and carbon efficiency of a country's garment sector compared to similar sectors in competitor countries. Industry-specific characteristics will also play an important role. For instance, a study on the impact of the ESPR on garment producing developing countries found that it will be easier for Bangladesh to enhance recycling and the durability of a garment compared to competitors like Vietnam, due to the prevalence of cotton garments, which are relatively easier to recycle compared to, for instance, the heavy use of polyester and blended garments in Vietnam.

Export exposure also impacts the extent to which EU trading partners will be affected by the ESPR. Bangladesh, the second largest garment exporter to the EU after China, will he highly exposed, given that garment exports account for more than 80% of the country's exports, with the EU as the largest export destination. By contrast, countries like Vietnam or Cambodia are less exposed to the ESPR, due to more diversified export baskets and a higher dependence on the United States (this could change in light of the Trump administration's so-called reciprocal tariffs, which have already affected US garment orders).

Understanding the ESPR in the steel context—the other product sector with the highest priority—requires taking a closer look at the EU's new strategy for the sector: the EU Steel and Metals Action Plan. This plan touches on circularity by seeking to stimulate demand for low-carbon steel and recycled metals within the EU, while exploring scrap export restrictions to foster circularity and ensure metal scrap availability within the EU. The Commission is currently establishing a voluntary low-carbon label for steel aimed at supporting the creation of lead markets, green public procurement, and ensuring that manufacturers receive a green premium and thus a return on their decarbonization investments.

The ESPR delegated act for steel will complement this labelling scheme by adding other relevant environmental criteria beyond carbon footprint. It will also assess the feasibility of setting recyclability and recycled content requirement obligations for steel in specific products under ESPR, and the possibility of prioritizing product design and waste treatment features that facilitate the separation of copper components from steel. It will further require information about the iron and steel carbon or environmental footprint across an additional stage of its life cycle. These and related criteria could negatively impact the competitiveness of iron and steel exports from the EU's trading partners that are not able to meet the low-carbon steel definition or do not have the required traceability infrastructure in place.

Moreover, the ESPR must be seen within the wider context of applicable EU regulations that affect importers, most notably the CBAM, which requires payment for the embedded carbon emissions generated in the production

of covered products, including iron and steel. Inability to obtain a low-carbon label, and thus benefit from the associated premium, could make the EU market even more out of reach for countries with highly energy- and emission-intensive steel industries, such as South Africa and India.

> The ESPR must be seen within the wider context of applicable EU regulations that affect importers.

The possibility of mandatory recycled content requirements would also have implications for trading partners. While boosting the EU recycling industry, establishing post-usage recycling targets for steel could lead to a further dearth in global scrap available to decarbonize steel. The EU already restricts the export of certain types of scrap steel to non-OECD countries under the EU Waste Shipments Regulation and is now expanding these restrictions even further, placing an excessive burden on non-OECD countries. Under the revised Waste Shipments Regulation adopted in 2024, the remaining waste exports still allowed to non-OECD countries (that is, non-hazardous metal waste) will be prohibited from May 2027 onwards, unless recipient countries can demonstrate their ability to treat EU waste in an environmentally sound manner. These and other developments would not only disrupt global recycling markets but would also make it significantly more challenging for countries such as India, the world's second largest scrap importer.

Enhancing Interoperability, Mutual Recognition, Transparency, and Cooperation

Interoperability will be key in minimizing trade barriers with EU trading partners. As noted in this report of an international expert group on trade, circular economy, and sustainable development, a key challenge in the development of trade-related circular economy measures is the lack of alignment in product definitions and classifications—an issue that also affects ESPR, particularly in developing product-specific requirements.

For example, there exists no international definition or standard on low-carbon or green steel, and different countries or business associations have adopted different approaches. Indeed, a recent study of the European Commission comparing major international initiatives and standards that aim to define "low-carbon emissions steel" reveals that existing initiatives vary significantly in terms of scope, emissions thresholds, and emissions accounting methodologies. These fragmented and uncoordinated approaches hinder the comparability of steel products across different frameworks, making it challenging to assess how one tonne of steel compares to another. Addressing this regulatory heterogeneity requires greater harmonization, equivalences, and mutual recognition, as well as resorting to international standard guides and recommendations where they exist.

The WTO Secretariat has endorsed, together with private and public sector stakeholders, the Steel Standard Principles, which call, inter alia, for interoperability between greenhouse gas emission measurement standards and methodologies as well as data collection and disclosure frameworks. As it develops the Delegated Act for iron and steel, the Commission should ensure that it follows the principles developed in this framework, as well as the International Energy Agency's "net zero principles" for Emissions Measurement and Data Collection for a Net Zero Steel Industry.

> Interoperability will be key in minimizing trade barriers with EU trading partners.

Similarly, regarding ecodesign standards for garments, there is a variety of predominantly voluntary sustainability standards but no leading international standard. To the extent that the Commission would be developing new standards or setting out mandatory criteria, it should follow the good regulatory practices set out in the World Trade Organization's Technical Barriers to Trade (TBT) Agreement's Code of Good Practice for the Preparation, Adoption and Application of Standards and the TBT Committee's Six Principles for the Development of International Standards, Guides and Recommendations. Moreover, to enhance interoperability, the Commission would be encouraged to identify which existing standards would provide sufficient levels of assurance for compliance with specific ecodesign criteria, as they will be developed for textiles and apparel. Doing so would mirror the approach the EU has adopted in its green procurement. With regards to measuring a garment's life cycle assessment, such as its carbon footprint, it would be key to enable interoperability with regards to the methodology employed.

In implementing the ESPR requirements, trading partners should also seek to utilize existing and emerging initiatives. For example, with regards to product traceability, the UNECE traceability system for garment and footwear sectors is establishing a framework to help industry actors engage with an international set of agreed practices for the harmonized collection and transmission of data needed for tracking and tracing materials. This could be key as businesses prepare to align their production methods with the transparency requirements of Digital Product Passports.

More generally, countries can also leverage bilateral instruments to align sustainability standards through regulatory cooperation and mutual recognition. For instance, regional trade agreements can include mutual recognition of technical regulations (including ecodesign lists), reduce tariffs and non-tariff barriers on environmental goods (which provides the opportunity to include circular goods, including by factoring in product and process characteristics beyond end use), and fostering cooperation on circularity. New EU tools like the Clean Trade and Investment Partnership (CTIP) could offer additional avenues for alignment. Interestingly, one of the stated aims of CTIPs is to enhance regulatory cooperation to "support partners in deploying in particular clean tech, electrification, circularity, decarbonisation standards as well as carbon pricing" (emphasis added).

> It is important to ensure more inclusive and transparent regulatory processes, engaging trading partners early and meaningfully.

Finally, it is important to ensure more inclusive and transparent regulatory processes. This includes ensuring that trading partners potentially impacted by the ESPR are adequately consulted and that their challenges are meaningfully considered. Some lessons on what not to do can be learned from other EU regulatory initiatives, like the EUDR and CBAM. In both cases, there was insufficient engagement with third countries during the legislative process. Moreover, dedicated support mechanisms (i.e. Task Force for International Carbon Pricing and Markets Diplomacy, Team Europe Initiative on Deforestation-free Value Chains, EU-Malaysia-Indonesia Joint Task Force on EUDR implementation) were only introduced after significant diplomatic tensions arose and are deemed mainly insufficient.

In the context of the ESPR, the EU should engage trading partners early and meaningfully. The EU has already created the EU Circular Economy Resource Centre, led by Sitra and the Finnish Ministry of Foreign Affairs, which is a platform for knowledge-sharing, technical alignment, and capacity building, and could serve as a key resource to address challenges for developing countries as the ESPR is being rolled out in priority sectors like textiles and apparel as well as iron and steel. In addition, setting up a dedicated ESPR Task Force on Circularity Cooperation with sector-specific workstreams—as a standalone initiative or within the Circular Economy Resource Centre—could support a smoother implementation and ensure a just transition.

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Financing Sustainable Trade for Just Transitions to Climate-Resilient Economies

Vinaye Dey Ancharaz & Riad Sultan

Sustainable trade presents a vital pathway for aligning international trade with climate goals and enhancing resilience in developing countries. However, financing gaps hinder scaling up of green trade. This article advocates for "greening" aid for trade by aligning it with climate objectives and increasing climate finance commitments. Through strengthening multilateral coordination, closing climate finance gaps, and prioritizing sustainable trade, the global community can ensure that trade becomes a driving force for sustainability, just transitions, and climate resilience.

Trade, including transport and logistics, is a significant contributor to global greenhouse gas emissions. Yet trade can also help accelerate the shift towards a green economy and the net zero ambition by easing access to environmental goods and clean technologies, creating markets for green products, and supporting sustainable production and consumption (for example circular economy practices). Moreover, trade measures such as border carbon adjustments can reduce carbon leakage while trade-induced product and market diversification can enhance the climate resilience of supply chains and foster sustainable agriculture. Evidence suggests that most developing countries have already integrated trade in their sustainable development strategies, which signals a global movement towards more sustainable or greener trade.

However, as with supporting climate action at the global level, encouraging and scaling up green trade is in dire need of financing. This article surveys recent efforts at mobilizing climate finance for this purpose, highlighting current gaps and discussing options for plugging them. A key area of attention is the Aid for Trade (AfT) initiative, which, we argue, can be modified slightly to emphasize the complementarity between trade and climate finance. We call for AfT to refocus on the sustainable trade agenda—or "greening" the AfT initiative.

What is Sustainable Trade?

Sustainable trade can be defined as trade that minimizes environmental harm and preserves environmental resources, promotes social welfare, and supports long-term economic resilience. It emphasizes green trade (e.g. trade in low-carbon goods and clean technologies), fair trade (e.g. ethical supply chains that safeguard labour rights), and circular trade (e.g. trade in recycled materials and sustainably sourced products).

Practical examples of sustainable trade abound. They include exports and imports of environmental goods (e.g. solar panels and wind turbines), trade in certified products (e.g. Fairtrade coffee), and carbon-neutral supply chains (e.g. Namibia's green hydrogen exports and the European Union's Carbon Border Adjustment Mechanism – CBAM).

Sustainable trade can support a just transition, for example by creating green jobs in renewable energy and eco-industries, reducing inequality through fair wages and ethical supply chains, and enabling climate resilience by financing climate change adaptation in vulnerable economies.

Persistent Climate Finance Gaps

Developing countries require substantial climate finance—some $2.4 trillion annually up to 2030—to meet mitigation and adaptation goals. According to UNEP, the cost of adaptation alone is about $240 billion per year. However, despite a steady increase since 2015, climate finance flows have fallen short of the annual target of $100 billion agreed at the Paris Climate Conference (COP15). Moreover, less than 40% of climate finance has been allocated to adaptation (e.g. early warning systems, flood defenses, drought-resistant crops, etc.), which remains an urgent priority for developing countries that have contributed little to climate change but are most exposed to its disastrous consequences.

The climate finance gap may widen as the United States—which has barely provided 5% of its fair share (based on income, population size, and cumulative emissions since 1990) in recent years and is overwhelmingly responsible for the persistent gap—scales back aid and withdraws from the Paris Agreement. Few other developed countries have provided their fair share of climate finance over the past 10 years; only four countries (Norway, Sweden, France, and Japan) are expected to do so in 2025.

Bilateral climate finance is not only limited; lack of coordination among donors has resulted in such funds being fragmented and concentrated in a few specific sectors (notably energy and transport) and in mitigation projects. While there is an array of multilateral climate funds, complex application processes have hindered access, challenging developing countries that are notoriously deficient in administrative capacity.

For these reasons, recent discussions on climate financing have argued that the onus to address climate change and its impacts should rest with the developing countries themselves. Proponents of this view emphasize the potential of innovative financing options such as green bonds or ESG-linked loans, public-private partnerships, blended finance initiatives, and debt-for-climate swaps. However, many debt-strapped developing countries lack the creditworthiness and the fiscal space to raise green finance or make green investments. Moreover, it is unfair to ask developing countries to pay for a crisis that they are barely responsible for.

> Many debt-strapped developing countries lack the creditworthiness and the fiscal space to raise green finance or make green investments

Financing the Transition to Sustainable Trade in Developing Countries

Given these constraints, external public financing—preferably aid—will remain critical to supporting the transition to sustainable trade in developing countries.

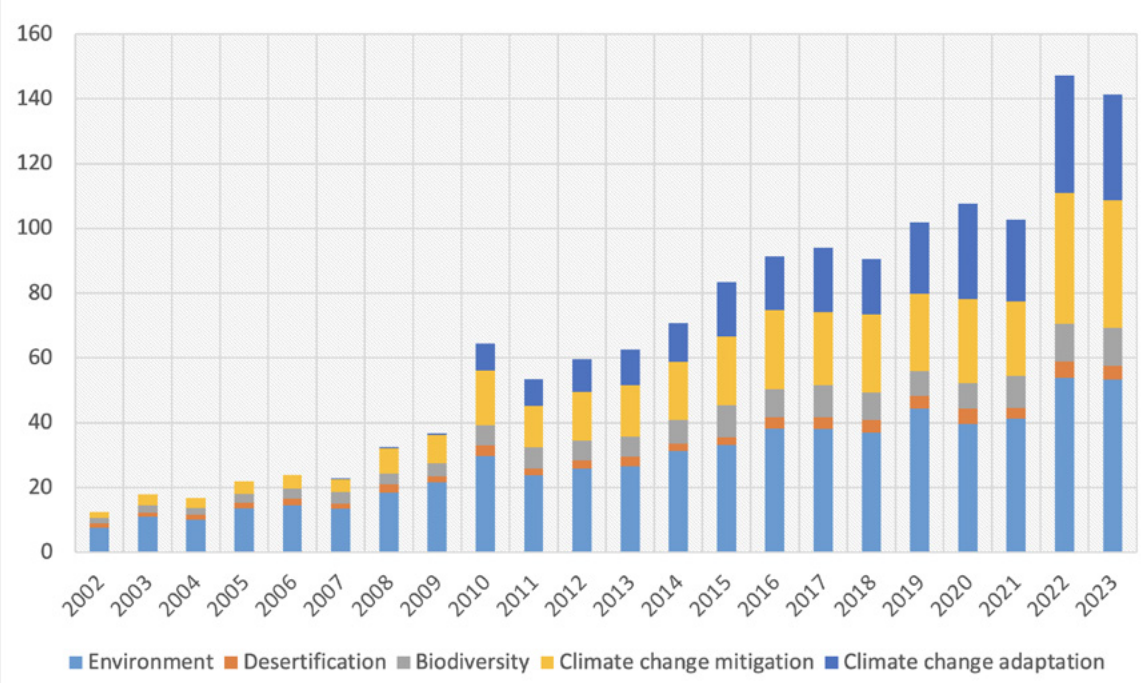
Climate-Related Official Development Assistance

One approach is to lobby for scaled-up climate-related official development assistance (ODA) from the OECD's Development Assistance Committee (DAC) donors.

Since 2002, the OECD has reported ODA statistics by climate change objective using the co-called Rio markers, which identify the extent to which an aid activity has specifically stated any such objective (the four Rio markers are biodiversity, desertification, climate change mitigation, and climate change adaptation.) Bilateral climate-related ODA (i.e. aid that explicitly targets climate change) has increased substantially since 2002, reaching a peak of $93.4 billion in 2022, but dropping slightly the following year (see Figure 1). Since these commitments fall short of the $100 billion target set at COP15, one can only hope that the decline in 2023 is temporary.

As shown in Figure 1, adaptation finance was virtually inexistent prior to 2010. Even today, ODA for climate change adaptation accounts for a comparatively modest share of climate-related aid commitments, reaching about 40% of the total in recent years. Moreover, the bulk of these commitments takes the form of loans, albeit concessional, rather than grants per se.

Figure 1. Climate-Related ODA By Policy Objective, 2002–2023 ($ billion)



Source: OECD Creditor Reporting System (CRS) database.

On a positive note, bilateral climate-related ODA represents a rising share of total bilateral aid, reaching 32.9% in 2021-22. Hopefully, this is new and additional funding rather than a mere relabelling of aid. Furthermore, DAC bilateral aid flows are just a portion—albeit an important one—of climate-related finance available to developing countries. The latter includes "other official flows" (non-concessional finance) from DAC members, bilateral flows from non-DAC providers, and multilateral development finance, including from multilateral development banks and UN agencies.

The fact remains, however, that much of climate finance is targeted at mitigation activities. Yet, the empirical evidence so far fails to support the view that mitigation aid is associated with lower emissions in recipient countries. This could be due to mitigation finance being misnamed or misused. Be what it may, the lack of effectiveness

of mitigation finance in achieving climate change mitigation in recipient countries suggests that the costs to developing countries of diverting ODA to mitigation objectives—especially if it is away from adaptation—could be significant.

Aid for Trade

The Aid for Trade initiative was designed to help developing countries integrate into the global trading system by strengthening their trade policies and regulations (e.g. customs modernization and trade facilitation), building trade-related infrastructure (e.g. ports, roads, and digital connectivity), and enhancing productive capacity (e.g. in sectors such as agriculture and manufacturing). Since the initiative's launch in 2006, AfT disbursements have increased steadily (except for a slight dip in 2021 following the COVID-19 pandemic) to reach a peak of $51.1 billion in 2022. Cumulative AfT disbursements amounted to $648 billion, representing nearly 20% of total ODA disbursements. Historically, the quasi-totality of AfT has flowed into economic infrastructure (notably energy generation and transport) and productive capacity building (in particular agriculture, forestry, and fishing). In 2022, these two categories accounted respectively for 54.6% and 43.6% of disbursements

Complementarity Between Aid for Trade and Climate Finance

While AfT has traditionally focused on economic development through trade, recent discourse has emphasized its potential to address climate change by financing sustainable trade initiatives.

The link between AfT and climate finance was first explored in the academic literature in a paper we authored in 2010, in which we argued that many climate-related projects (most notably in sectors like agriculture and energy) have clear trade-related impacts. For example, the uptake of climate-smart agriculture can boost agricultural output and exports. Similarly, mitigation projects like renewable energy development can enhance energy security and support industrial activity such as export-oriented manufacturing.

Thus, AfT can be mapped to climate-related projects. The rehabilitation of weather-battered infrastructure or the protection of coastal zones from sea level rise, for instance, are as much AfT projects in the "economic infrastructure" category as they are climate change adaptation projects. Under the category of "productive capacity building," diversification into climate-resistant crops or away from climate-vulnerable sectors, such as traditional agriculture, are also adaptation projects.

The proposed mapping is more than an academic idea; it is already happening. For example, according to WTO surveys, 88% of developing countries had incorporated trade objectives in their sustainable development strategies in 2022, while 86% had integrated climate change objectives in their trade strategies.

Our 2010 paper suggested that developing countries can leverage the complementarity between AfT and climate change financing mechanisms to mobilize higher levels of climate finance. AfT can serve as co-financing for projects that integrate components of climate change adaptation (or mitigation) and trade competitiveness. Alternatively, AfT can be sought for climate change projects that can be mapped to an AfT category—e.g. dams (economic infrastructure) or soil rehabilitation (productive capacity building in the agriculture sector).

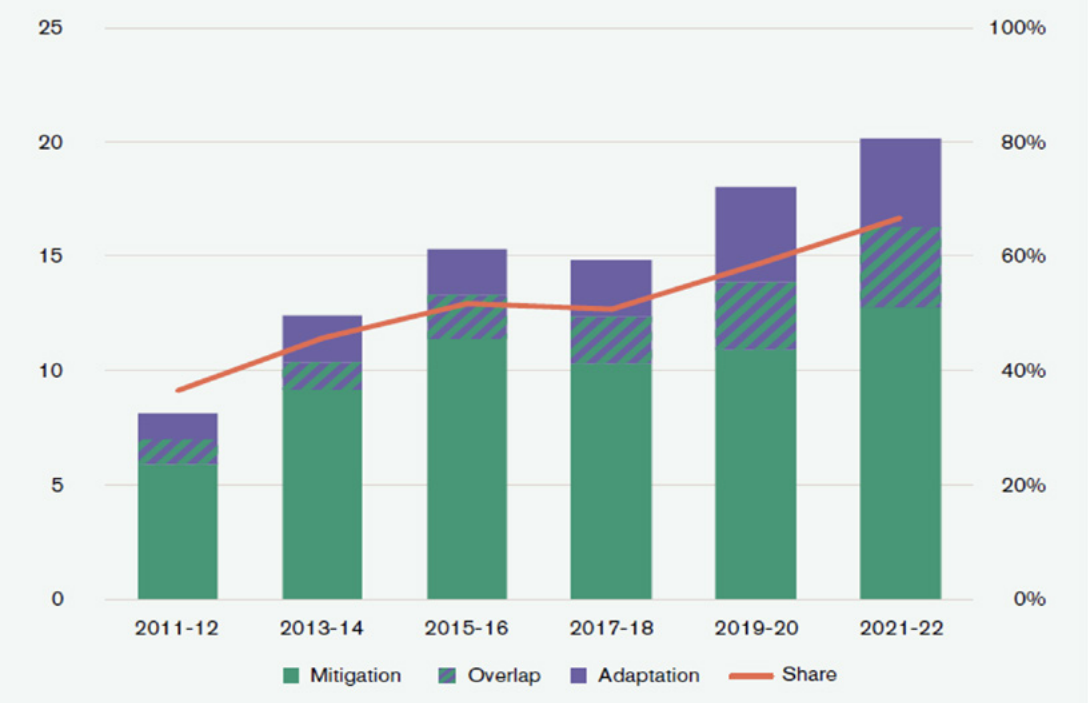
We proposed a roadmap for making AfT and climate finance mutually reinforcing. Such a strategy rested on optimizing the synergies between the two types of financing, improving their governance structures, and learning from their respective experiences. For example, climate projects are generally better coordinated and more fully owned than AfT projects, which, conversely, are better grounded in development and poverty reduction.

Climate-Related Aid for Trade

In 2024, the WTO and OECD explicitly noted for the first time that "Aid for Trade can [...] play a role in supporting climate-related objectives." In survey responses, 77% of recipients said that AfT can help finance climate action.

Concretizing the idea of mapping AfT to climate-related projects, the OECD CRS database reports "climate-related AfT" commitments since 2011. These commitments show a marked upward trend, increasing by more than 100% over the subsequent 11 years (Figure 2). In 2021-22, average climate-related AfT commitments of DAC donors represented 67% of their total AfT commitments, denoting that increasingly AfT is being targeted to climate-related adaptation and mitigation projects. Not surprisingly, the latter has dominated AfT commitments, with financing for green infrastructure, such as solar powered plants, accounting for the bulk of these flows. This dominance is partly attributed to the fact that mitigation projects are more appealing to investors since they "bring a more immediate and certain financial return than many adaptation initiatives". Thus, there exists substantial room for AfT financing of adaptation projects and greener trade policies that enhance access to environmental goods and services.

Figure 2. Average Climate-Related AfT commitments, 2011–2022
($ billion (left axis) and as a share of total AfT commitments (right axis))



Source: OECD (2024).

Green Trade Facilitation

The UN Economic and Social Commission for Asia and the Pacific (ESCAP) and the Asian Development Bank are pioneering the concept of "green trade facilitation" as a means of making trade processes and supply chains less carbon-intensive and more sustainable. Green trade facilitation rests on four key pillars:

1. Digitalizing trade procedures, which would make processes simpler, more transparent, and more environment-friendly (for example, paperless trade may lead to fewer trees being cut down and hence reduced emissions, waste, and water use).
2. Facilitating trade in environmental goods, such as solar panels, clean energy technologies, and used and recycled goods and materials critical to the circular economy.
3. Greening the transport of traded goods by supporting low-carbon modes of transportation, optimizing shipping routes, and shifting to alternative, cleaner modes such as rail.
4. Facilitating compliance with climate-related non-tariff barriers, such as the EU's CBAM and the EU Regulation on Deforestation.

Green trade facilitation calls for two things: (i) reprioritizing trade facilitation and scaling up the amount of aid flowing to this sector, and (ii) reorienting trade facilitation towards sustainable practices, including the four pillars described above.

There are challenges on both fronts. Trade facilitation is a subcategory of "trade policies and regulations," which attracted just 2.5% of AfT disbursements between 2018–2022. Aid for trade facilitation is even thinner, amounting to $252 million in 2022—i.e. a mere 0.5% of total AfT disbursements. Green trade facilitation will thus remain a sheer concept unless donors are convinced that allocating more aid to trade facilitation can encourage its use in greener initiatives. More aid for this purpose should be additional and scalable, not just a diversion from other categories of AfT.

Looking Ahead

Sustainable trade presents a vital pathway for aligning international trade with climate goals, fostering inclusive growth, and enhancing resilience in developing countries. However, as highlighted, significant financing gaps persist, particularly in adaptation and green trade initiatives. While climate-related ODA and AfT have grown, they remain insufficient and imbalanced, with mitigation projects overshadowing adaptation needs.

The potential for aid for trade to support sustainable trade remains underexploited.

The potential for AfT to support sustainable trade—through climate-resilient infrastructure, green trade facilitation, and low-carbon supply chains—remains underexploited. To advance a just transition and finance sustainable trade at the scale required, it is critical to:

1. Refocus AfT on sustainable trade. Donors should explicitly integrate climate objectives into AfT, directing more funding towards adaptation-linked trade projects, such as climate-smart agriculture and green trade facilitation.

2. Increase climate finance commitments. Developed nations must fulfill their $100 billion climate finance pledge, with greater emphasis on grants (rather than loans) and adaptation support for vulnerable economies.
3. Leverage innovative financing. Blended finance, green bonds, and debt-for-climate swaps can supplement traditional aid, but these must be accessible to low-income countries through risk-sharing mechanisms.
4. Strengthen multilateral coordination. Simplifying access to climate funds and improving donor coordination will ensure that financing reaches high-impact sectors like sustainable logistics and circular trade.

By greening AfT and closing climate finance gaps, the global community can ensure that trade becomes a driving force for sustainability rather than a source of emissions. Going forward, there is a need to concretize the synergies between sustainable trade and climate resilience. Further research in this area, with evidence from the ground, will help affirm the complementarities between AfT and climate finance. This could spur larger future AfT flows to the most climate-vulnerable developing countries. The time for action is now. Developing countries cannot afford further delays in securing the resources needed for a fair and just transition to sustainable and climate-resilient economies.

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