Navigating Geopolitical Challenges in the Green Transition

Implications for Developing and Emerging Economies

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Policy brief

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INTRODUCTION

The race to achieve a green, low-carbon, and socially just global economy is well underway, but it faces a formidable obstacle: geopolitical tensions. In a world marked by polycrises – where overlapping challenges create complex instabilities – developing and emerging economies find themselves at a crossroads. Geopolitical confrontations and climate change are not only reshaping global politics and economies but are also redefining development priorities. For developing and emerging economies, the stakes are high. They face the risk of falling behind in the transition to sustainability, with far-reaching consequences for their economic growth, technological advancement, and social equity. Yet, despite these challenges, there are unique opportunities for these countries to innovate, collaborate, and assert their influence in building a more inclusive global system.

GEOPOLITICAL BLOC FORMATION, POPULISM, AND THE CRISIS OF MULTILATERALISM

Multilateral cooperation is the cornerstone of the global transition to sustainable

economies, yet it faces mounting threats from geopolitical tensions, populist movements, and shifting economic priorities. Russia's invasion of Ukraine has intensified the looming geopolitical fragmentation (Gopinath, 2024). This realignment not only strains multilateral systems but also diverts attention and resources away from green transition initiatives. The war has further exacerbated global energy insecurity, with European nations scrambling to replace Russian fossil fuel imports. In many cases, this has led to a resurgence in the use of coal and natural gas, threatening emissions reduction targets and underscoring the geopolitical risks of energy dependency. Meanwhile, the focus on energy security in wealthier nations risks sidelining the energy needs of the Global South, deepening inequalities in access to renewable technologies and sustainable development.

At the same time, the rise of populist leaders presents additional challenges to climate progress. Populist rhetoric frequently downplays or denies the urgency to address climate change, framing environmental regulations as elitist-driven measures that place an additional financial burden on ordinary citizens. Under such leadership, policies often prioritize short-term economic growth over long-term sustainability, undermining investment in renewable energy, nature conservation, and emissions reduction (Campanella & Lawrence, 2024). Moreover, these governments are less likely to honor climate finance commitments or engage in technology transfers, leaving developing nations to face climate impacts with limited resources. The US withdrawal from the Paris Agreement underscores the fragility of international climate change law, which depends on the political willingness of governments to uphold its commitments. The abrupt U-turn of the US under the new Trump Administration in climate and green industrial policy is causing uncertainty, which could slow down investments in renewable energy and green technologies. Globally, companies and investors are hesitant to commit to long-term financing for sustainable projects. This shifting global landscape places countries in the Global South in a difficult position. As geopolitical blocs solidify, developing and emerging economies must navigate complex alliances.

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FRAGMENTATION OF GLOBAL MARKETS AND ECONOMIC SECURITY POLICIES

Geopolitical tensions are leading to an increasing fragmentation of international

»The shifting geo-political landscape places the Global South in a difficult position as they must navigate complex and moving alliances while struggling to develop. Despite these challenges, there are unique opportunities.«

trade and investment flows (World Trade Organization, 2024). The disruption of supply chains during the COVID-19 pandemic and Russia's war against Ukraine have drawn the attention of policymakers to the risks of economic interdependencies. Among other factors, growing competition among the largest economies regarding technologies for the green transition has triggered policies aimed at increasing economic security. Against the background of alleged unfair trading practices by China, the EU, US, and some emerging countries have implemented trade restrictions (e.g., on solar panels and electric vehicles) to limit China's dominance in renewable energy technologies (Boullenois & Jordan, 2024).

The increasing fragmentation of global markets distorts economic efficiency and risks excluding countries in the Global South from the green transition. Countries that are more integrated with global value chains (GVCs) benefit from greater technology and knowledge transfers. With the knowledge, skills upgrading, innovation, and technology, they can bring foreign direct investments (FDIs) and trade integration to support countries in diversifying and moving up the value chain. The aforementioned geopolitical tensions and economic security policies restrict the potential of international trade and FDIs as levers of growth. They make it more difficult for developing countries to access critical technologies, attract FDIs, and secure stable markets for their exports.

LIMITED ACCESS TO GREEN TECHNOLOGY AND INDUSTRIAL DEVELOPMENT

Currently, the development and utilization of green technologies is already unevenly distributed, leaving countries in the Global South confined to low-value positions in global supply chains. While economies with highly sophisticated production capacities, such as China, the US, and the EU, reap most of the industrial benefits, developing countries are often limited to supplying raw materials. This perpetuates technological and economic dependency, which is further reinforced by strict intellectual property rights and restrictive trade practices.

An additional challenge is the resurgence of industrial policy in many Global North countries. Governments are actively supporting their domestic green industries through subsidies, local content

requirements, preferential treatment in public procurement, and trade interventions based on national security principles. However, developing economies often lack the financial resources to implement similar policies (Juhász et al., 2023), thus foregoing technological advances and the structural "pull" that backward and forward linkages can exert on the economy. This puts them at risk of falling further behind in the socio-ecological-economic transformation. The situation is further exacerbated by the fragmentation of global markets due to the increasing geopolitical tensions described above.

Nevertheless, opportunities exist for the Global South, particularly in renewable energy. The expansion of global green hydrogen production presents a significant chance for countries with abundant renewable energy resources, such as those in North Africa and Latin America, to position themselves as key exporters. Green hydrogen could drive economic diversification, create new revenue streams, and generate employment (Fokeer et al., 2024). However, the geopolitical landscape complicates these prospects. The growing competition for control over strategic resources, such as lithium and rare earth metals, has led to new trade restrictions and investment barriers. Additionally, the dominance of a limited number of powerful actors in green technology supply chains means that developing countries must navigate a complex web of dependencies, making it difficult to move beyond the role of mere raw material suppliers.

There is also a risk of replicating old patterns of economic dependence. Current trade structures indicate that green hydrogen from the Global South is primarily intended for export to industrial centers such as the EU and East Asia. This could result in a situation where developing countries remain suppliers of raw materials, while the actual value addition occurs elsewhere. Rising protectionism and the prioritization of domestic energy security in the Global North further limit the ability of developing countries to fully capitalize on their renewable energy potential.

However, there are more opportunities for the Global South to generate jobs and initiate a green industrialization process that goes beyond the promotion of carbon-intensive industrial sectors and traditional structural transformation. A process in which labor shifts from low- to high-productivity sectors – usually from agriculture to manufacturing. This model is harder to achieve through export-oriented industrialization, in part because, nowadays, manufacturing is markedly more skill- and capital-intensive (McMillan & Zeufack, 2022). The easy gains lie

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in promoting labor-intensive sub-sectors, such as agro-processing and the textile industry, which build on existing comparative advantages and can connect firms to more sophisticated production processes. Some service sub-sectors can also be targeted due to their backward linkages, such as business-to-business and high-tech services. Additionally, the tourism sector would be another promising area to target due to its high employment potential (Rodrik, 2022). Clever solutions are, therefore, needed to support partner countries in utilizing the opportunities for green industrial development in the current global environment. The GIZ and the United Nations Industrial Development Organization (UNIDO) jointly created a toolkit ("GIZ and UNIDO"), which helps partner countries to target specific sectors and fine-tune industrial policy instruments.

HIGH COSTS OF CAPITAL AND FINANCIAL BARRIERS

The financing costs for the green transition are significantly higher in the Global South than they are for the wealthy, industrialized nations of the Global North. While highly developed economies can access capital under favorable conditions, lower-income countries face high interest rates and restrictive lending terms. This disparity makes investments in green infrastructure considerably more expensive and slows down the socio-ecological-economic transformation. Moreover, financial support from the Global North has fallen short of expectations. Despite extensive climate finance pledges, commitments have not been fully honored for a long time (OECD, 2024). As a result, crucial funding for sustainable investments in sectors such as renewable energy, the circular economy, and environmentally friendly industrial processes remains insufficient. Recent geopolitical instability has negatively affected investment decisions, as political uncertainty and economic volatility increase the perceived risks for investors, discouraging private capital from flowing into green technologies. These uncertainties erode trust in long-term sustainable economic development and make Global South countries hesitant to further commit to a green economic transformation (Lebdioui, 2024).

Additionally, risk-averse foreign investors tend to avoid unstable regions, depriving these economies of much-needed capital. Consequently, dependence on fossil fuels persists, not only as an energy source, but also as a key economic driver for many nations that are reliant on

revenue from resource extraction. This worsens existing social and economic inequalities, making the transition to sustainable economic models even more challenging. At the same time, the global race for technological leadership offers opportunities for the Global South. Innovations in renewable energy, resource-efficient manufacturing, and sustainable agriculture could help developing nations to build greener and more resilient economies, bypassing less ecologically sound growth models. However, these advancements must be made inclusively in order to prevent deepening existing disparities. For the socio-ecological-economic transformation in the Global South to succeed, decisive action is needed. This includes the reliable fulfillment of climate finance commitments, fair access to capital and technology, policies to mitigate investment risks, and stronger international cooperation.

RESOURCE DEPENDENCY AND VULNERABILITY

Critical minerals (e.g., lithium, cobalt, and rare earth metals) are essential for green technologies. The dependence on critical minerals, which is often concentrated in politically sensitive regions, exacerbates vulnerabilities in green supply chains (Gollier & Rohner, 2023). Currently, countries in the Global South mainly supply raw materials, including critical minerals, in green supply chains, while China and Global North countries leads in processing and manufacturing. Attempts by developing countries to integrate into high-value segments of green supply chains are hampered both by external and internal factors.

External factors include trade restrictions and foreign control over critical technologies for processing, manufacturing, and innovation. Regarding internal factors, developing countries often struggle to move beyond raw material extraction due to rent-seeking behavior, as well as a lack of infrastructure or comprehensive strategies linking industrial, investment, and trade policies that effectively foster value addition. Existing policies often suffer from shortcomings such as misaligned policy targets; a lack of monitoring tools and course-correction mechanisms; an over-reliance on trade policy instruments; and a neglect of crucial factors, such as environmental impacts (Masuma, forthcoming).

POLICY RECOMMENDATIONS

The main policy recommendation for developing countries is to strategically engage with the US, China, and the EU to encourage technology transfers and secure beneficial investment partnerships. To maximize the potential of these collaborations, it is important to prioritize green technologies, local capacity building, and the modernization of intellectual property regulations. Access to advanced technologies is crucial for moving up the value chain, but ensuring resilience is equally important. This can be achieved by diversifying supply chain actors. Implementing circular economy policies, such as electronic-waste (e-waste) recycling for rare earth minerals, not only supports sustainability but also enhances supply chain resilience, benefiting all the parties involved.

The development of green supply chains is not only a bet on sustainability but also on long-term economic growth. Yet, it is im-

perative to move beyond raw material extraction and promote domestic value-addition; this calls for a more holistic approach, combining industrial investment and trade policies into a coherent and measurable policy. This is exactly where development cooperation has a role to play, by assisting partner countries in overcoming the challenges of implementing effective value-addition policies. Some tools to enable this are access to information on green technologies, the monitoring of market trends, access to affordable financing instruments, and assistance with the specific requirements for investment projects.

Furthermore, new modes of trade and investment cooperation among countries in the Global South and industrialized countries are needed. They will probably allow for more flexibility and focus on specific sectors or supply chains. The Clean Trade and Investment Partnerships announced by the European Commission could provide the framework for these new modes of cooperation. Conversely, South–South cooperation is also important in boosting trade and enhance bargaining power in global climate negotiations – some regional alliances are good examples of this, e.g., the Association of Southeast Asian Nations (ASEAN) and the African Continental Free Trade Area (AfCFTA).[1] The latter is particularly important because Africa is the continent with the least developed regional value chains, which are important in supporting value-addition in countries in the Global South. However, a treaty alone cannot achieve this: a joint effort is required to overcome the structural, institutional, and coordination challenges that have limited regional industrialization in the past.

In crises, there are always opportunities. Now is the time to forge new alliances, explore alternative multilateral approaches, and to create a fairer and more sustainable global economic system, which better serves the interests of both industrialized and developing countries.

DISCLAIMER

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[1] GIZ supports the improvement of framework conditions for the implementation of AfCFTA and the promotion of cross-border activities of small and medium-sized enterprises (SMEs) in the ASEAN region. See project "Strengthening regional structures to promote SMEs in ASEAN": https://www.giz.de/en/worldwide/122706.html.