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NAVIGATING MEGATRENDS FOR 2026

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NAVIGATING *Megatrends* FOR 2026

Edited by
Sharon Stirling and Eszter Karacsony

FOREWORD

The year 2026 arrived burdened with the weight of unfinished transitions. The global order, already fraying at the edges, today confronts a convergence of forces that are reshaping power, prosperity, and purpose.

At the heart of this moment lies a paradox: Even as technological acceleration promises efficiency and abundance, it has intensified strategic rivalry and societal anxiety. Artificial Intelligence, data dominance, and digital infrastructure have become instruments of state power, blurring the lines between economic competition and national security. The return of geopolitics is not a throwback to the twentieth century; it is a recalibration of interdependence, albeit under conditions of mistrust.

Equally consequential is the reordering of global economics. Supply chains are being redesigned in the name of resilience, yet often at the cost of efficiency and inclusiveness. The language of globalization has given way to that of friend-shoring and strategic autonomy. For emerging powers—India, foremost among them—this moment presents both opportunity—to shape norms and institutions, and danger—that of being caught between rival blocs.

Climate change, no longer a distant threat, now functions as a systemic disruptor, amplifying inequalities, fuelling migration, and putting governance capacity to test. Meanwhile, demographic shifts—ageing societies in the West and East Asia, youthful populations in the Global South—are altering labor markets and political priorities, with profound implications for stability and growth.

This collection of essays by ORF scholars engages with these megatrends not as abstract futures but as lived realities—contested, uneven, and deeply political. Megatrends do not unfold in isolation; they are mediated by leadership, institutions, and ideas. The choices made in state capitals today will determine whether 2026 will be remembered as a waypoint toward fragmentation, or a pivot toward pragmatic cooperation. In interrogating these trends, this volume seeks not predictions, but perspectives—a valuable compass in an era defined by uncertainty.

The launch of *ORF Global Quarterly* marks a milestone in the evolution of the Observer Research Foundation's global engagement. Conceived in 2025, ORF Global is a virtual centre that brings together ORF's intellectual capital across its India offices in

Delhi, Mumbai, and Kolkata, as well as its overseas affiliates in North America and the Middle East. Its purpose is both practical and strategic: to deepen collaboration across regions, shape ORF's international research and convening agenda, and curate ideas that speak to a rapidly changing global order. The purpose of ORF Global is not merely to aggregate research across locations, but to curate it in ways that speak to the most pressing international debates of our time. This publication is the most visible expression of that ambition.

At a time when global debates are increasingly fragmented, *ORF Global Quarterly* seeks to foreground perspectives from the Global South—regions whose demographic weight, economic relevance, and strategic agency are growing, yet whose voices remain insufficiently reflected in forward-looking global analyses. The contributors to this volume share a common commitment to examining global challenges through lenses rooted beyond the traditional centres of power. In this sense, *ORF Global Quarterly* is intended to be more than a periodic journal; it is envisioned as a platform that reflects ORF's growing role as a bridge between regions, disciplines, and perspectives that are too often siloed in contemporary global discourse.

As we shaped the purpose and scope of this publication in late 2025, we chose to begin with a wide-angle assessment of the global landscape in 2026. The six domains covered in this inaugural issue—geopolitics, defense and security; geoeconomics and trade; technology; climate and energy transitions; agriculture, health, and urbanization; and education, skills, labor, and immigration—together capture the major fault lines and forces shaping international politics and domestic transformations alike. These are arenas where power is being contested, norms are being rewritten, and long-term structural shifts are already underway.

It is our aim to offer insights that are distinctive and actionable, sharpening understanding of the forces shaping the year ahead and informing the strategic choices that 2026 will inevitably require.

Harsh V. Pant

Vice President
Observer Research Foundation

EDITORS' NOTE

SETTING THE COMPASS: 2026

Welcome to the first edition of *ORF Global Quarterly*. This is the signature publication of ORF Global, a new virtual centre established in 2025 to serve as a collaboration hub for ORF's three India locations—Delhi, Mumbai, and Kolkata— and two overseas affiliates, ORF America and ORF Middle East. The virtual centre helps identify themes for ORF's international convening and research, and acts as a curator for its scholarly research, publications, and insights from our dialogues.

ORF Global Quarterly is designed to amplify prominent voices, insights, and perspectives from Global South countries which, despite their demographic significance and increasing economic weight, are often under-represented in scholarly literature. Authors are scholars of the Observer Research Foundation located in three regions (India, the Middle East, and North America) and invited contributors from ORF's community around the globe.

In late 2025, as we were considering the audience, purpose, and scope of this publication, we decided to launch with a broad assessment of the 2026 landscape. For our first edition, we identified six domains: Geopolitics, Defense, and Security • Geoeconomics and Trade • Technology • Climate and Energy Transitions • Agriculture, Health, and Urbanization • Education, Skills, Labor, and Immigration. Why these six? These domains cover a broad spectrum of transformative inter-state dynamics, international organizing principles, and socioeconomic structures changing around us rapidly.

We invited our ORF scholars to look ahead into 2026 to predict and guide our readers through a variety of megatrends—transformative, long-term, structural global changes—that are expected to be pivotal for Global South actors in these six domains.

When analyzing global challenges, perspective matters. Whether megatrends are perceived as opportunities or challenges depends on geography, priorities, and geopolitical standpoint. In other words, what is of greatest significance in Brazil may resonate differently in Malaysia—or in Germany.

There are numerous qualitative trends and risk analysis available, but they are typically done through a Global North perspective. In 2025, ORF Global conducted a scoping exercise and review of 20+ prominent and publicly available risk and

megatrend reports published since the beginning of the decade. We found that the ways in which trends and risks may affect different actors are primarily analyzed by organizations based in the United States, United Kingdom, and the European Union. These reports came from corporate ecosystems, think tanks, international organizations, and public institutions, and they are predominantly produced in English with a Western frame of reference. The conclusion is apparent: forward-looking, open-access megatrends literature rarely reflects Global South perspectives. This inaugural edition of *ORF Global Quarterly* seeks to bridge that gap.

To identify and assess the megatrends in the six domains, *ORF Global Quarterly* applies a new methodology that departs from the typical approach of response-driven surveys. Our scholars reviewed more than 170 unilateral, bilateral or multilateral declarations, announcements, and statements in recent years, looking for references to long-term, structural changes. We believe, in most cases, the comparative analysis of openly stated goals in strategic documents and statements, and what they imply, is a more meaningful indicator of intent and focus than data collected through voluntary response surveys.

These essays were contributed and edited in December 2025 and recent events were closely monitored until early January for relevant updates. Subsequent quarterly editions in 2026 will provide deeper dives into the megatrends of these domains.

We understand the world is unpredictable, turbulent, and complicated. We hope *ORF Global Quarterly* provides you with perspectives that are unique and valuable, outlining risks and opportunities in ways that help you understand, prepare for, and navigate the year ahead.

Sharon Stirling

Chief Operating Officer, ORF America and Director, ORF Global

Eszter Karacsony

Associate Fellow and Program Lead, ORF Middle East

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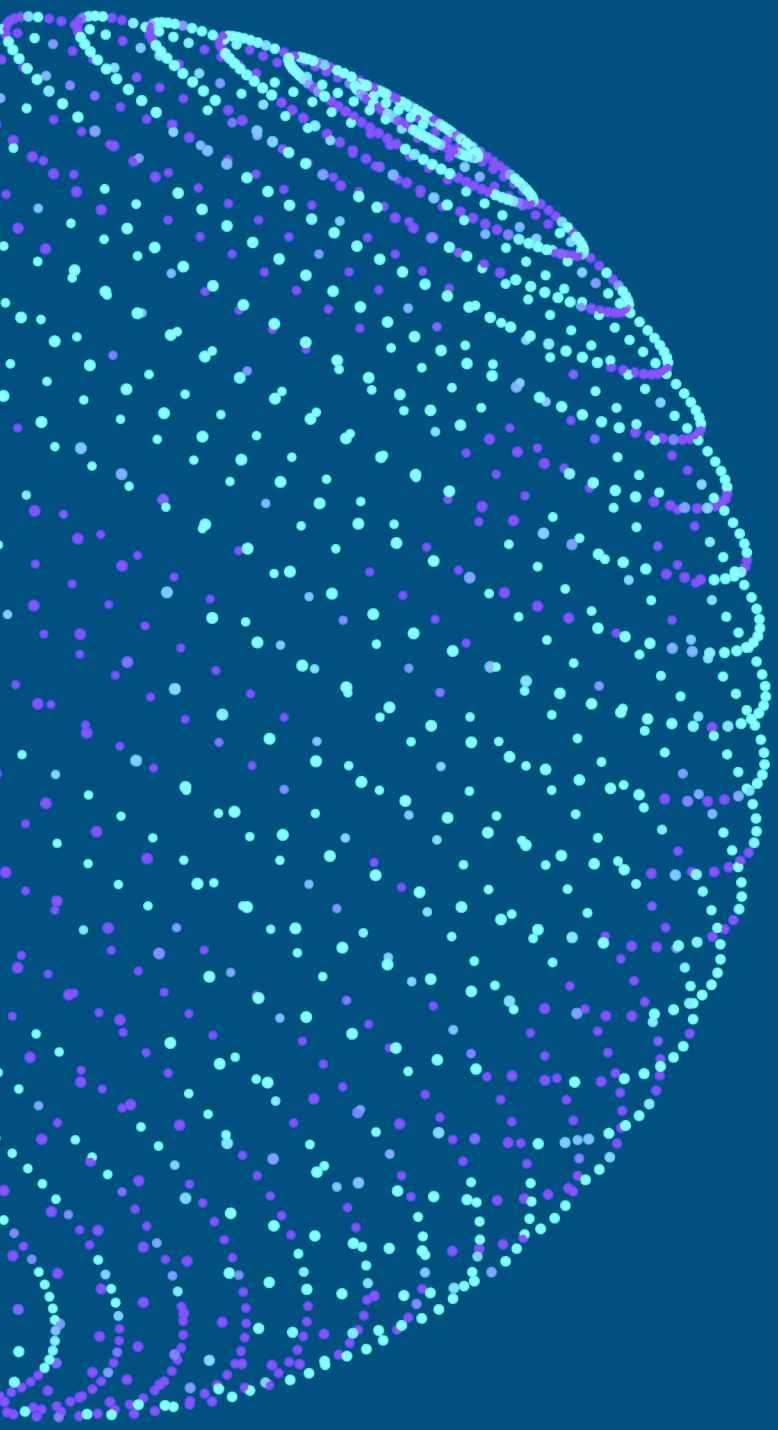

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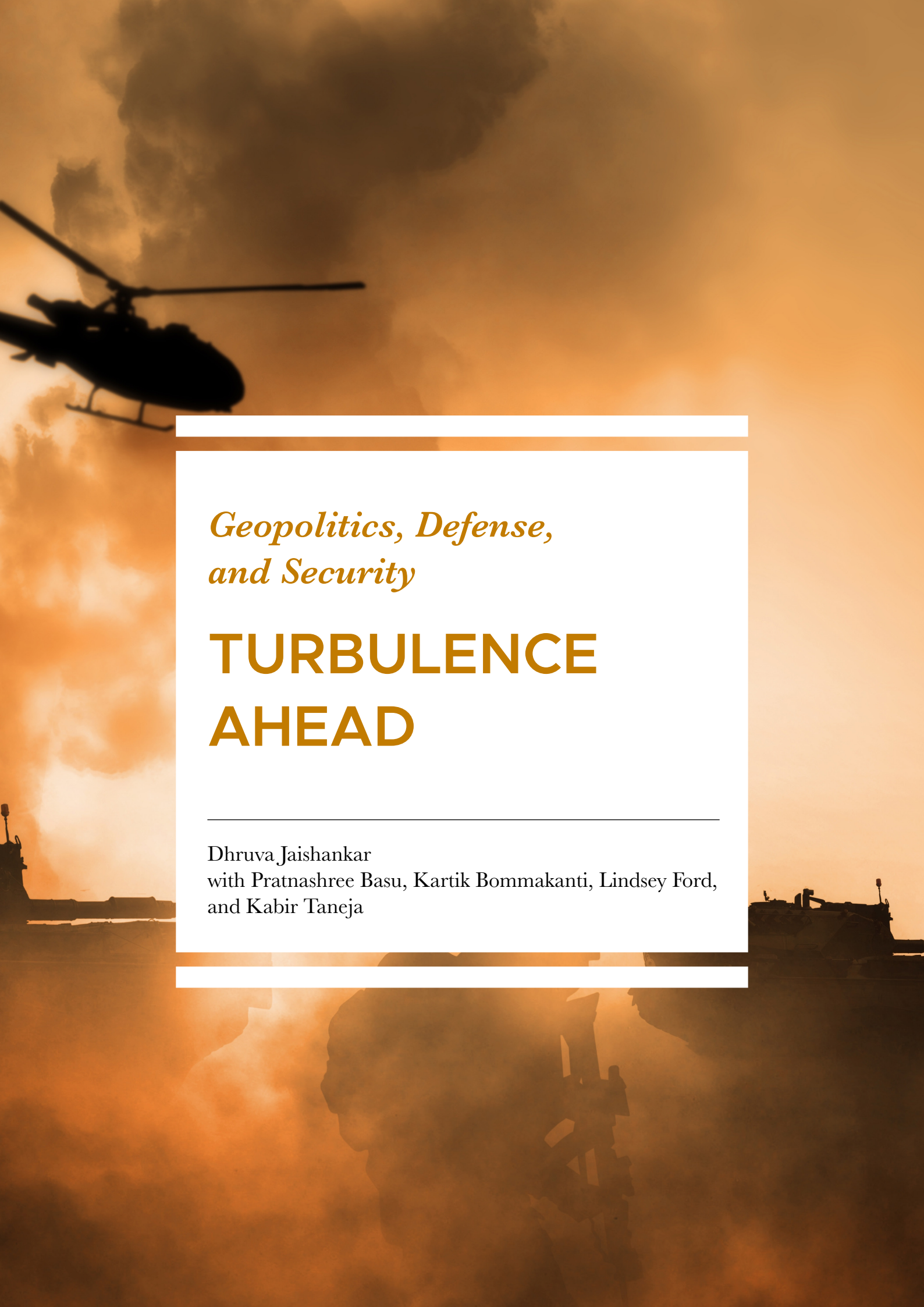

Geopolitics, Defense, and Security

TURBULENCE AHEAD

Dhruva Jaishankar
with Pratnashree Basu, Kartik Bommakanti, Lindsey Ford, and Kabir Taneja

The re-election of Donald Trump in the United States (US) has introduced a wave of turbulence to the international system, reversing certain pre-existing trends while accelerating others. Trump's second term has been marked by the imposition of high tariffs on numerous trade partners, resulting in disruptions to global commercial flows. He has also overseen the US's retrenchment from various multilateral organizations and arrangements. The US has simultaneously demonstrated a greater willingness to end major conflicts, such as those in Ukraine and Gaza, while exhibiting reduced restraint in its use of force, whether strikes on Iranian nuclear facilities or operations in Latin America. Meanwhile, the war in Ukraine continues to contribute to Europe's rearmament. Israel's strikes in Iran, Syria, Qatar, and Yemen reflect broader upheaval spreading across the Middle East and beyond. China's competition with the US persists, extending across multiple domains and regions. Amid this backdrop, at least five major geopolitical megatrends are likely to unfold.

1. CHINA-RUSSIA COOPERATION INTENSIFIES

China and Russia are expected to continue expanding the 'no limits' partnership they declared in 2022 through new technological and operational coordination, despite attempts by the Trump administration in the US to engage Beijing and Moscow separately.[1] Following Chinese leader Xi Jinping's visit to Russia in 2024, Russian reporting announced the two sides agreed to expand military-technical cooperation and joint military exercises.[2] In August 2025, the two sides implemented this commitment with their annual joint sea exercise, which involved a wider geographical remit (including a joint patrol in the Western Pacific) and new capabilities (including an enhanced focus on sub-surface and anti-submarine warfare). Additionally, the two sides participated in their first trilateral exercise with Mongolia, which enabled the three parties to experiment with the use of unmanned systems and robotics for territorial enforcement. There is also evidence of Russia training Chinese paratroopers, suggesting an accelerated timeline for some of China's military modernization goals.[3]

The broader movement toward China's accelerated military modernization was on display during its 'Victory Day' military parade in September 2025, when a wide variety of emerging military hardware—from unmanned and cyber systems to hypersonic capabilities—was showcased.[4] Active Chinese preparations for a Taiwan-related amphibious invasion or blockade remain ongoing, as does China's increased Coast Guard activity, "swarming" tactics, and use of maritime militia to assert presence near disputed maritime features in the South China Sea. Japan's 2025 Defence White Paper explicitly highlights China's use of grey-zone tactics via the China Coast Guard

> **China and Russia are expected to continue expanding the 'no limits' partnership they declared in 2022 through new technological and operational coordination.**

1 "Joint Statement of the Russian Federation and the People's Republic of China on the International Relations Entering a New Era and the Global Sustainable Development," President of Russia, 4 February 2022, http://www.en.kremlin.ru/supplement/5770

2 "Russia, China to continue strengthening military ties — joint statement," TASS, 16 May 2025, https://tass.com/defense/1789051?utm

3 Oleksandr V Danylyuk and Jack Watling, How Russia is Helping China Prepare to Seize Taiwan, RUSI, 26 September 2025, https://www.rusi.org/explore-our-research/publications/commentary/how-russia-helping-china-prepare-seize-taiwan

4 Atul Kumar and Rahul Rawat, "China's Military Parade 2025: Enhanced Capabilities, Strategic Intent," Observer Research Foundation, Special Report, 23 September 2025, https://www.orfonline.org/research/china-s-military-parade-signals-enhanced-capabilities-and-strategic-intent

(CCG) and its cooperation with military and paramilitary organs.[5]

The Sino-Russian partnership is likely to affect the two countries' closest military partners, such as Pakistan, North Korea, Belarus, and possibly Iran. Pakistan's launch of an Army Rocket Force Command in August 2025, along with other developments in its defense, acquisitions and doctrine indicates much closer military collaboration with China in the years ahead.[6] The China-Russia relationship also has important implications for the war in Ukraine, with China's foreign minister Wang Yi reportedly telling European diplomats in July that Beijing would not accept Russia losing the war in Ukraine and that such an outcome would allow the US to turn its full attention to China.

> **The Sino-Russian partnership is likely to affect the two countries' closest military partners, such as Pakistan, North Korea, Belarus, and possibly Iran.**

2. MINILATERALISM AND BILATERALISM DEEPEN

The world is expected to witness countries confronting the twin overdependencies on the US (for market demand) and China (for product supply), as well as weakening multilateralism amid Washington and Beijing's reluctance to invest in inclusive international systems. This is leading to various countries and regional powers seeking more bilateral and minilateral solutions and may involve a flurry of individualized trade and supply chain arrangements as well as a thickening of customized security arrangements, as various powers seek to diversify.

Weakening multilateralism underpins this trend. The United Nations system missed another opportunity to reform itself during the 2024 Summit of the Future.[7] The World Trade Organization's dispute resolution mechanism remains paralyzed. The Association of Southeast Asian Nations (ASEAN) has not been unanimous on important challenges in the South China Sea and Myanmar, although it delivered somewhat on the conflict between Thailand and Cambodia.[8] Other arrangements and entities are partially compensating for this gap. Trade is increasingly shaped through a complex network of bilateral and regional trading arrange ments. The European Union (EU) has concluded trade agreements with South American countries

> **The world is expected to witness countries confronting the twin overdependencies on the US (for market demand) and China (for product supply), as well as weakening multilateralism amid Washington and Beijing's reluctance to invest in inclusive international systems.**

5 "Defense of Japan 2025 (White Paper)," Ministry of Defense, Japan, 2025, https://www.mod.go.jp/en/publ/w_paper/index.html

6 Sohini Mandal, "Pakistan Establishes Rocket Force, Unveils New Missile," Janes, 19 August 2025, https://www.janes.com/osint-insights/defence-news/defence/update-pakistan-establishes-rocket-force-unveils-new-missile

7 "Pact for the Future, Global Digital Compact and Declaration on Future Generations," United Nations, September 2024, https://www.un.org/sites/un2.un.org/files/sotf-pact_for_the_future_adopted.pdf

8 "Chairman's Statement of the 46th ASEAN Summit Kuala Lumpur, Malaysia, 26 MAY 2025", ASEAN, https://asean.org/wp-content/uploads/2025/05/01.-FINAL-Chairmans-Statement-of-the-46th-ASEAN-Summit.pdf; "Joint Communiqué of the 58th ASEAN Foreign Ministers' Meeting Kuala Lumpur, 9 July 2025", ASEAN, https://asean.org/wp-content/uploads/2025/07/FINAL-Joint-Communique-of-the-58th-AMM.pdf

(Mercosur); the United Kingdom (UK) and India similarly concluded a long-negotiated agreement.[9]

Security is often addressed bilaterally (such as the US-Philippines alliance) or minilaterally (such as the Quad).[10] To less fanfare, the Japan–Philippines–US Trilateral has institutionalized joint patrols and maritime domain awareness cooperation in the West Philippine Sea, while the Japan-South Korea-US framework has developed into an annual security dialogue on missile defence and data-sharing.[11] Changes to defence spending and posture in several countries, including in Europe, Asia, and the Middle East create new opportunities for bilateral and minilateral defence industrial cooperation. More interaction between various theaters, such as between Europe and the Indo-Pacific, can be anticipated. For example, Japan, Italy, and the UK have collaborated on a new Global Combat Aircraft Programme.[12]

3. WESTERN HEMISPHERIC TENSIONS RISE

Latin America is experiencing heightened tensions. A region that had largely resolved inter-state conflict and remained insulated from great-power competition is now witnessing a return to peacetime competition for influence and possible conflict, against a context of political polarization and competition over commodities. The US has shifted towards a greater focus on Western Hemispheric affairs, including homeland defense, border enforcement, and counter-drug operations. The Trump administration appears to have adopted a more expansive view of what homeland security entails, expanding it to include the use of the military for domestic law enforcement support, and military strikes on alleged drug traffickers in the Caribbean; as shown by Washington's actions in Venezuela at the beginning of the year.

The positioning of a US aircraft carrier battle group and other capabilities in the Caribbean in 2025 is likely to signal future developments.[13] Venezuela continues to face economic hardship, despite latent oil riches, and has made more assertive territorial claims over neighboring Guyana.[14] How the country's economic situation evolves in a post-Nicolás Maduro era remains to be seen. Leaderships in Argentina and El Salvador have aligned their political trajectories with Trump-era policies, while others such as Brazil and Peru are pursuing greater economic cooperation with China in the form of trade and investment. The global race for critical minerals is set to engage Chile, Argentina, Bolivia, and Peru, while China continues to seek security opportunities in the region, whether in the form of arms sales, ground stations, or port and maritime infrastructure opportunities.[15]

> **"The global race for critical minerals is set to engage Chile, Argentina, Bolivia, and Peru.**

9 "EU and Mercosur reach political agreement on groundbreaking partnership," European Commission, 5 December 2024, https://ec.europa.eu/commission/presscorner/detail/en/ip_24_6244; "Comprehensive Economic and Trade Agreement between the United Kingdom of Great Britain and Northern Ireland and India," Department of Business and Trade, United Kingdom, 24 July 2025, https://www.gov.uk/government/collections/comprehensive-economic-and-trade-agreement-between-the-united-kingdom-of-great-britain-and-northern-ireland-and-india

10 US Department of State, "2025 Quad Foreign Ministers' Meeting Fact Sheet", July 1, 2025, https://www.state.gov/releases/office-of-the-spokesperson/2025/07/2025-quad-foreign-ministers-meeting

11 "United States-Japan-Republic of Korea Trilateral Partnership Advances Economic Prosperity," U.S. Department of State, 30 October 2025, https://www.state.gov/releases/2025/10/united-states-japan-republic-of-korea-trilateral-partnership-advances-economic-prosperity/

12 "Global Combat Air Programme Joint Statement," UK Ministry of Defence, 7 July 2025, https://www.gov.uk/government/news/global-combat-air-programme-joint-statement-7-july-2025

13 Konstantin Toropin, "US is sending an aircraft carrier to Latin America in major escalation of military firepower," Reuters, 24 October 2025, https://apnews.com/article/trump-cartels-hegseth-drugs-boat-strikes-6c3316b2852723e26c39dc701bba9d52

14 "Incursion by Venezuela into Guyana's Territorial Waters," CARICOM, 1 March 2025, https://caricom.org/statement-by-the-caribbean-community-caricom-incursion-by-venezuela-into-guyanas-territorial-waters/

15 Eduardo Baptista, Marco Aquino and Lucinda Elliott "Starting Latin America trip, Xi Jinping opens huge port in Peru funded by China," Reuters, 14 November 2024, https://www.reuters.com/world/chinas-xi-arrives-lima-apec-open-pacific-megaport-2024-11-14/

4. COMPETITION INTENSIFIES IN NEW DOMAINS AND REGIONS

Official statements and agreements by governments around the world underscore the growing importance of undersea capabilities, Artificial Intelligence (AI)-enabled operations, and supply-chain security as key elements of national competitiveness. There is a broad recognition that strategic rivalries will increasingly be contested below the water line, in the digital sphere, and in space. Furthermore, the line between civilian industry and defense is expected to blur further, including in these domains, requiring stricter export controls, national or region-wide industrial policies, and clarity on national security laws. Matching doctrines with capabilities is likely to prove challenging: some countries may seek to impose preemptive constraints on competition, while others are likely to allow regulation to follow capabilities.

These developments are expected to influence the AI Impact Summit hosted in 2026 in India.[16] They will also shape the future of high technology security partnerships such as AUKUS, which involves nuclear submarine and high technology sharing between the US, Australia, and the UK.[17] Autonomous underwater capabilities are under development, supported by quantum navigation, while Israel has demonstrated emerging advantages in precision strike capabilities enabled by space and artificial intelligence that many traditional missile and air defense systems struggle to counter effectively. Existing multilateral regimes that govern weapons sales —such as the Missile Technology Control Regime (MTCR) and Wassenaar Arrangement— risk irrelevance if they fail to keep pace with new technologies. Meanwhile, geopolitical competition is extending into new regions. The Gulf of Guinea, for example, has witnessed multiple global powers (including China, India, and the European Union) employing military force, often motivated by counter-piracy objectives.[18] Moreover, the Arctic is gaining strategic importance through the potential extraction of natural resources and the increased use of the Northern Sea Route.[19]

> **There is a broad recognition that strategic rivalries will increasingly be contested below the water line, in the digital sphere, and in space.**

5. NUCLEAR COMPETITION RETURNS

Multiple developments indicate the ongoing erosion of existing global arms-control regimes and the potential for a new era of nuclear modernization and, possibly, nuclear expansion. Every power in possession of nuclear weapons is engaged in intensive modernization programmes, potentially ending what had been a trend toward reduction in nuclear stocks.[20]

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16 "India Accelerates AI Self-Reliance," Ministry of Electronics and Information Technology, Government of India, 10 October 2025, https://www.pib.gov.in/PressReleasePage.aspx?PRID=2177598

17 "Statement on Australia-UK Ministerial Consultations (AUKMIN) July 2025", Ministry for Foreign Affairs of Australia, 25 July 2025, https://www.foreignminister.gov.au/minister/penny-wong/media-release/statement-australia-uk-ministerial-consultations-aukmin-july-2025

18 "EU and India to Carry Out Joint Naval Exercise in Indian Ocean to Reinforce Maritime Security Cooperation," European External Action Service, 29 May, 2025, https://www.europarl.europa.eu/doceo/document/A-10-2025-0229_EN.html; "China Reaffirms commitment to enhancing stability, security in Gulf of Guinea," Ministry of National Defense, People's Republic of China, 4 December 2024, http://eng.mod.gov.cn/xb/News_213114/TopStories/16356060.html

19 "Report on a European Parliament Recommendation to the Council, the Commission, and the Vice-President of the Commission / High Representation of the Union for Foreign Affairs and Security Policy on the EU's Diplomatic Strategy and Geopolitical Cooperation in the Arctic," Committee on Foreign Affairs, European Parliament, 12 November 2025, https://www.europarl.europa.eu/doceo/document/A-10-2025-0229_EN.html

20 "Nuclear risks grow as new arms race looms," SIPRI, 16 June 2025, https://www.sipri.org/media/press-release/2025/nuclear-risks-grow-new-arms-race-looms-new-sipri-yearbook-out-now).

Multiple developments indicate the ongoing erosion of existing global arms-control regimes and the potential for a new era of nuclear modernization and, possibly, nuclear expansion.

China, in particular, is driving a rapid expansion of its nuclear arsenal, as well as associated delivery systems, prompting the US to rethink its nuclear strategy: the new nuclear arms race is consequently reshaping conventional military force postures. Furthermore, several non-nuclear weapon powers are investing in associated civilian nuclear technologies or delivery mechanisms, possibly as a precursor to nuclear weaponization. Saudi Arabia, for example, signed a new defense pact with Pakistan that includes an extended deterrence commitment, while recent polling suggests that public support for indigenous nuclear capabilities has reached all-time highs in South Korea.[21]

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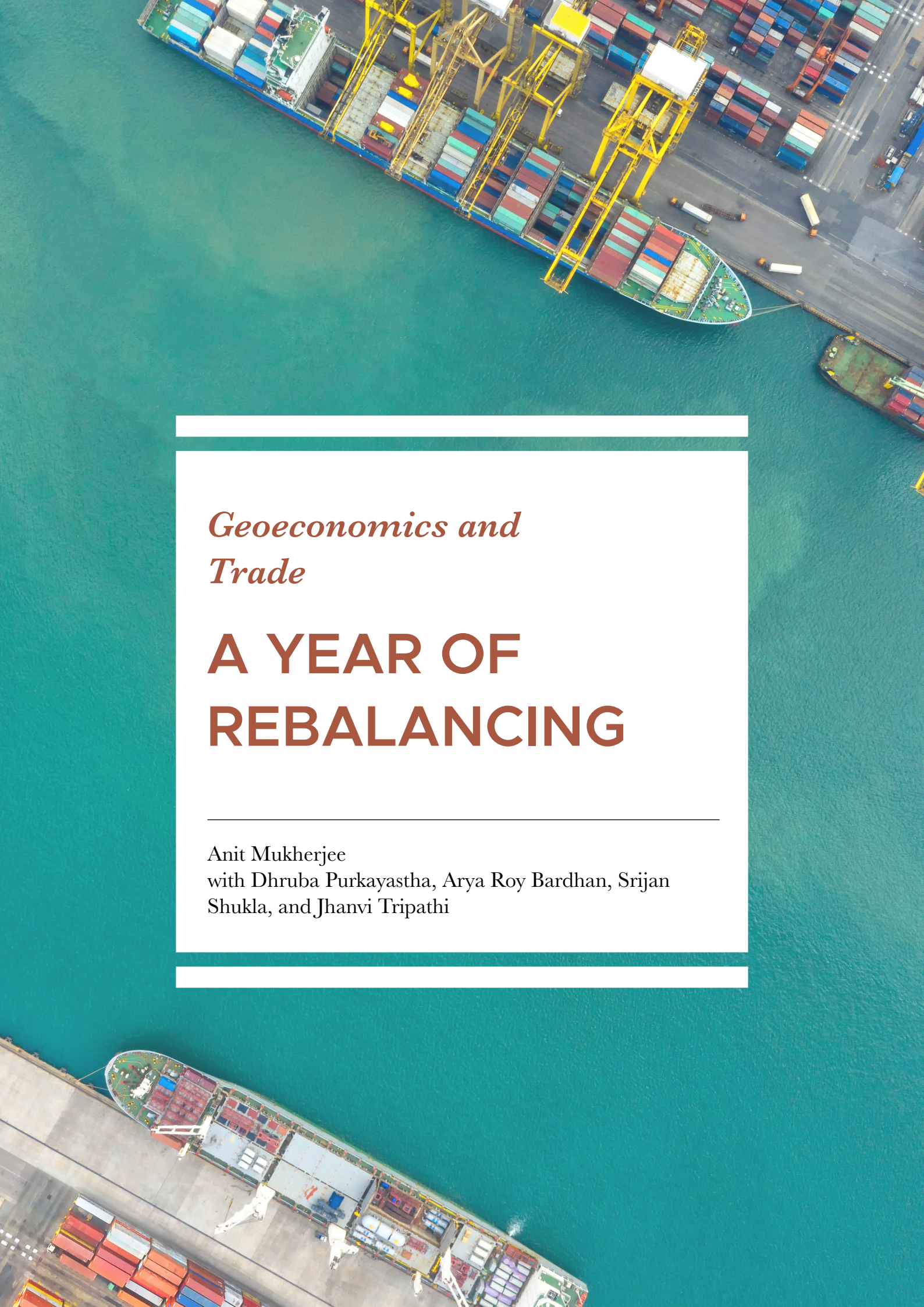
CONCLUSION

The trends outlined in this article are not the only major dynamics shaping global affairs. A resolution to the war in Ukraine remains elusive and will hinge on a host of factors including Europe's capacity to backfill US military supplies, Ukrainian politics, and Russia's appetite for a ceasefire. Conflicts in Africa continue to be overlooked, whether in the Democratic Republic of the Congo, in Sudan, or transnational violence in the Sahel. The Middle East is experiencing countervailing dynamics—the role of Türkiye and Qatar in Gaza; Iranian attempts to reclaim leverage; and the consequences of the Saudi-Pakistani defense pact—that could shape the region's geopolitics. The South China Sea could become as much of a flashpoint as the Taiwan Strait, while the South Pacific and Caucasus remain arenas of continued competition among multiple powers. Nonetheless, the Russia-China axis, the continued growth of bilateral and minilateral arrangements, a more turbulent Latin America, competition in new technological domains and regions, and the reemergence of nuclear weapons are likely to constitute major trends to monitor in 2026.

21 Maha el Dahan and Saeed Shah, "Saudi Arabia, nuclear-armed Pakistan sign mutual defence pact," Reuters, 18 September 2025, https://www.reuters.com/world/asia-pacific/saudi-arabia-nuclear-armed-pakistan-sign-mutual-defence-pact-2025-09-17/?utm_source=chatgpt.com; Peter K Lee and Kang Chungku, "Worth the Squeeze: A Conditions-based Analysis of South Korean Public Support for Nuclear Deterrence," Asan Institute, 28 May 2025, https://asaninst.org/bbs/board.php?bo_table=s1_1_eng&wr_id=236



Geoeconomics and Trade

A YEAR OF REBALANCING

Anit Mukherjee
with Dhruba Purkayastha, Arya Roy Bardhan, Srijan Shukla, and Jhanvi Tripathi

The architecture of global economic relations will face further challenges, tests, and restructuring in 2026, as key political leaders continue to put national priorities above mutual benefit as experienced last year. The "reciprocal tariffs" announced by the United States (US) in early April disrupted the global trade flows and unsettled the multilateral system built over several decades.[1] As a result, global players are adjusting to this new reality and altering their behavior beyond tariff measures to safeguard their own interests. Rather than allowing comparative advantage to be the primary determinant of trade flows, geoeconomics, the use of a country's economic strength to achieve geopolitical, security, and foreign policy objectives, has become the driving force in negotiating trade agreements between the US and its major trading partners. Strategic competition between the US and China has extended beyond tariffs into other domains, including export controls imposed on advanced technologies such as semiconductor chips and their inputs, particularly rare earths and critical minerals.[2]

The reaction of other countries to the disruptions of last year offers a glimpse of the future rebalancing of global trade anticipated in 2026, in three ways. First, traditional allies in the Global North that depend on significant trade with the US, such as the European Union (EU), the United Kingdom (UK), Japan, and South Korea, have negotiated lower tariff rates. However, they have found it difficult to meet the significant investment commitments of billions of dollars into the US that they have promised in return.[3,4] Second, Global South countries with larger economies, including Mexico, Brazil, India, and South Africa, have pushed back against conditionalities for trade deals that affect national sovereignty such as energy security and judicial independence.[5,6] Third, countries that sought to reduce their overdependence on the US as the largest market and China as the largest supplier of consumer goods achieved limited success and will struggle to contain the impact of tariffs on their domestic economies in the year ahead.

"Rather than allowing comparative advantage to be the primary determinant of trade flows, geoeconomics, the use of a country's economic strength to achieve geopolitical, security, and foreign policy objectives, has become the driving force in negotiating trade agreements between the US and its major trading partners.

1 United States Government. "Regulating Imports with a Reciprocal Tariff to Rectify Trade Practices That Contribute to Large and Persistent Annual United States Goods Trade Deficit", April 2, 2025. https://www.whitehouse.gov/presidential-actions/2025/04/regulating-imports-with-a-reciprocal-tariff-to-rectify-trade-practices-that-contribute-to-large-and-persistent-annual-united-states-goods-trade-deficits/

2 United States Government. "Ensuring National Security and Economic Resilience through Section 232 Actions on Processed Critical Minerals and Derivative Products", April 18, 2025. https://www.federalregister.gov/documents/2025/04/18/2025-06836/ensuring-national-security-and-economic-resilience-through-section-232-actions-on-processed-critical

3 European Commission. "Joint Statement on a United States-European Union framework on an agreement on reciprocal, fair and balanced trade", August 21, 2025. https://policy.trade.ec.europa.eu/news/joint-statement-united-states-european-union-framework-agreement-reciprocal-fair-and-balanced-trade-2025-08-21_en

4 United States Government. "Fact Sheet: Implementing the General Terms of the U.S.-UK Economic Prosperity Deal", June 17, 2025. https://www.whitehouse.gov/fact-sheets/2025/06/fact-sheet-implementing-the-general-terms-of-the-u-s-uk-economic-prosperity-deal/

5 Ministry of External Affairs, Government of India. "Statement by Official Spokesperson", August 4, 2025. https://www.mea.gov.in/Speeches-Statements.htm?dtl/39936

6 Luis Ignacio Lula da Silva. "Brazilian Democracy and Sovereignty are Non-Negotiable", September 14, 2025. https://www.nytimes.com/2025/09/14/opinion/lula-da-silva-brazil-trump-bolsonaro.html

1. US-CHINA STRATEGIC COMPETITION INCREASINGLY IMPACTS THE GLOBAL SOUTH

The geoeconomic landscape in 2026 will become increasingly complex. While there appears to be a temporary truce between the US and China on the tariff front,[7] strategic competition between the United States and China over critical technology and its inputs will continue intensifying. For other countries seeking to develop their own capabilities in critical technologies such as artificial intelligence, closing the gap with the two major geoeconomic powers will become more difficult.

> **Strategic competition between the United States and China over critical technology and its inputs will continue intensifying. For other countries seeking to develop their own capabilities in critical technologies such as artificial intelligence, closing the gap with the two major geoeconomic powers will become more difficult.**

The US-China competition over critical technologies and resources that fuel AI and advanced manufacturing will intensify in 2026. In 2025, both the US and China implemented export controls on national security-related technologies such as advanced semiconductors[8] and critical minerals[9]. This has triggered the latest round of threats of further retaliatory tariffs by the US[10]. The US initially sought to exercise its leverage through restrictions on the sale of advanced semiconductor chips to China by private companies such as Nvidia, which are essential for artificial intelligence (AI) data processing. Europe became involved in the debate through the takeover of Nexperia by the Government of the Netherlands.[11] The recent rollback of some of the restrictions by the US suggests that its policy will remain unpredictable and fluid in the year ahead.

However, what is clear is that in 2026, countries of the Global South with large critical mineral reserves such as Indonesia and Mexico will leverage their access to natural resources in exchange for lower tariffs and greater investment in domestic processing and manufacturing sectors, capitalizing on the US-China geoeconomic competition to their advantage.[12]

> **In 2026, countries of the Global South with large critical mineral reserves such as Indonesia and Mexico will leverage their access to natural resources in exchange for lower tariffs and greater investment in domestic processing and manufacturing sectors.**

7 United Stated Government. "Modifying Reciprocal Tariff Rates Consistent with the Economic and Trade Arrangement between the United States and the People's Republic of China", November 4, 2025. https://www.whitehouse.gov/presidential-actions/2025/11/modifying-reciprocal-tariff-rates-consistent-with-the-economic-and-trade-arrangement-between-the-united-states-and-the-peoples-republic-of-china/

8 United States Government. "Additions and Revisions to the Entity List", September 16, 2025. https://www.federalregister.gov/documents/2025/09/16/2025-17893/additions-and-revisions-to-the-entity-list

9 Ministry of Commerce, Government of the People's Republic of China. "China's recent economic and trade policy measures", October 13, 2025. https://english.www.gov.cn/news/202510/13/content_WS68ecc859c6d00ca5f9a06bc8.html

10 Peterson Institute of International Economics. "US-China Trade War Tariffs: An Up-to-Date Chart", November 10, 2025. https://www.piie.com/research/piie-charts/2019/us-china-trade-war-tariffs-date-chart

11 Government of the Netherlands. "Minister of Economic Affairs invokes the Goods Availability Act", October 12, 2025. https://www.government.nl/latest/news/2025/10/12/minister-of-economic-affairs-invokes-goods-availability-act

12 United States Government. "Fact Sheet: The United States and Indonesia reach historic trade deal", July 22, 2025.

2. CHINA SURGES EXPORTS TO GLOBAL SOUTH

China needs new buyers. As the Trump administration continues to limit imports into the US, China will shift its attention toward other trading partners as it continues to expand its domestic manufacturing capacity.[13] China's annual trade surplus had reached USD 1 trillion by November, due largely to the surge in exports to Asia, Africa, and Latin America.[14] This trend will continue, driven by increased demand in sectors such as renewable energy, electric vehicles, telecommunication equipment, and consumer electronics, where China's share exceeds 80 per cent of global supply in some cases.[15]

During the last trade conflict between the US and China starting in 2017, several G20 countries imposed import restrictions on Chinese manufactured goods to prevent an influx of "deflected trade" from flooding their domestic markets.[16] In 2026, Global South countries will need to balance strategically the benefits of cheaper imports from China with the imperative to protect their domestic industries.[17] As the US limits opportunities to circumvent tariffs through the transshipment of Chinese goods from the Global South, countries such as Mexico and Vietnam will find it increasingly difficult to absorb cheaper imports from China without putting their own manufacturing industries and jobs at risk.[18]

> **In 2026, Global South countries will need to balance strategically the benefits of cheaper imports from China with the imperative to protect their domestic industries.**

3. TRADE BETWEEN GLOBAL SOUTH INCREASES

The geoeconomic impact of tariffs is expected to play out in two key ways: an increase in trade across the Global South and greater attention on the corridors and infrastructure that connect them.

As access to developed country markets becomes more restricted, Global South countries will expand trade through bilateral agreements[19], regional blocs[20] and multilateral groupings such as the G20[21] and

https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-the-united-states-and-indonesia-reach-historic-trade-deal/

13 Xinhua. "15th Five-Year Plan for Economic and Social Development", October 28, 2025. https://english.news.cn/20251028/efbfd0c774fd4b1c8daeb741c0351431/c.html

14 General Administration of Customs, Government of the People's Republic of China. "China Customs Statistics", December 8, 2025. http://english.customs.gov.cn/Statistics/Statistics?page=1

15 Ministry of Finance, Government of India. "Geo-economic fragmentation replacing globalisation worldwide with backsliding of economic integration", January 31, 2025. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2097913

16 Center for Economic and Policy Research. "Redirecting Chinese Exports from the US: Evidence on Trade Deflection from the First US-China Trade War", April 24, 2025. https://cepr.org/voxeu/columns/redirecting-chinese-exports-us-evidence-trade-deflection-first-us-china-trade-war

17 Vietnamnet Global. "Shein and Temu face halt orders in Vietnam without official registration", October 11, 2024. https://vietnamnet.vn/en/shein-and-temu-face-halt-orders-in-vietnam-without-official-registration-2340709.html

18 Government of Vietnam. "ASEAN faces challenges as China shifts its trade focus", October 8, 2025. https://vntr.moit.gov.vn/news/asean-faces-challenges-as-china-shifts-its-trade-focus

19 Ministry of Commerce and Industry, Government of India. "Brazil-India Joint Declaration for Deepening of MERCOSUR-India Trade Agreement", October 16, 2025. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2180058

20 Association of Southeast Asian Nations. "The 57th ASEAN Economic Ministers' (AEM) Meeting", September 23, 2025. https://asean.org/wp-content/uploads/2025/09/24.-Joint-Media-Statement-AEM-57-adopted.pdf.

21 G20. "G20 Trade and Investment Ministerial Statement," October 10, 2025. https://www.g20.utoronto.ca/2025/251010-trade-statement.html

BRICS.[22] This trend will accelerate through 2026 as the complementarities and linkages within the Global South become clearer and more defined. Intra-Global South trade will serve as a hedge against the tariff policy uncertainty in developed country markets. Global South countries will also pursue opportunities for free trade agreements (FTAs) with major developed economies, such as the one between the UK and India, strategically leveraging their markets and comparative advantage in global value chains.[23]

As trade between countries of the Global South grows in 2026, connectivity projects such as the India-Middle East-Europe Economic Corridor (IMEC),[24] Masterplan on ASEAN Connectivity 2025,[25] and South Connection linking eleven countries of Latin America will receive a boost.[26] These include not only physical infrastructure to facilitate trade such as roads, railways, and ports, but also energy pipelines, undersea cables, institutional coordination, and cross-border digital payments. At the same time, greater attention will be directed to logistics hubs centered around fast-growing, middle-income countries with established manufacturing exports at key geographical intersections, such as Vietnam, India, the United Arab Emirates, Türkiye, and those in the western hemisphere connecting Latin America with Asia, such as Peru, Colombia, and Mexico.[27]

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4. INDUSTRIAL POLICY ADVANCES

As the initial effect of tariffs and trade agreements over the past year become more evident in 2026, Global South countries will use industrial policy to drive investment to specific sectors, such as critical minerals,[28] advanced manufacturing,[29] and emerg-

22 BRICS. “BRICS Approves Joint Declaration for Fairer, More Inclusive Global Trade,” May 27, 2025. https://brics.br/en/news/brics-approves-joint-declaration-for-fairer-more-inclusive-global-trade

23 Ministry of Commerce and Industry, Government of India. “Synopsis of Key Chapters of India-UK Comprehensive Economic and Trade Agreement (CETA),” 2025. https://www.commerce.gov.in/wp-content/uploads/2025/08/India-UK-CETA-Synopsis-of-Key-Chapters.pdf

24 Ministry of Commerce and Industry, Government of India. “India poised to become a trusted bridge of global connectivity through India-Middle East Economic Corridor (IMEC)”, April 16, 2025. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2122299&reg=3&lang=2

25 Association of Southeast Asian Nations. “Master Plan on ASEAN Connectivity 2025,” 2016. https://asean.org/wp-content/uploads/2016/09/Master-Plan-on-ASEAN-Connectivity-20251.pdf

26 Inter-American Development Bank. “IDB launches ‘South Connection’ regional program”, March 28, 2025. https://www.iadb.org/en/news/idb-launches-south-connection-regional-program

27 Allianz. “The geoeconomic playbook of global trade”, 2025. https://www.allianz.com/content/dam/onemarketing/azcom/Allianz_com/economic-research/publications/specials/en/2024/november/14112024-geoeconomic-playbook-global-trade.pdf

28 Government of Brazil. “Strategic pro-minerals policy”, 2021. https://www.gov.br/mme/pt-br/assuntos/secretarias/geologia-mineracao-e-transformacao-mineral/pro-minerais-estrategicos/FolderPolticaPrMinerаisEstratgicosversoingls.pdf

29 Government of India. “Semicon2025: Building the next semiconductor powerhouse”, September 1, 2025. https://www.pib.gov.in/PressNoteDetails.aspx?NoteId=155130&ModuleId=3&reg=3&lang=2

ing technologies, especially AI and its infrastructure.[30] Governments will escalate protectionist measures to further subsidize domestic manufacturing.[31] Businesses will continue diversifying and de-risking their global supply chains, focusing on countries that are geopolitically rather than geographically proximate.[32] Those countries with substantial industrial bases and endowments of natural resources are positioned to do so most effectively, including Brazil, Indonesia, India, and Mexico. One roadblock to overcome is that some Global South countries are facing rising debt service costs[33] and constrained access to concessional financing,[34] creating heightened risk of a debt-crisis in 2026.

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CONCLUSION

Tariffs and export controls have fundamentally altered the global trade landscape in the past year. They have been advanced by new US leaders who long disagreed with the traditional consensus that free trade is a path to mutual prosperity. The world in 2026 will experience the impact of heightened geoeconomic competition as the two major trading powers; the US and China continue to use tariffs and export controls to reshape the global economy to their advantage. Global South countries will need to guard against the flood of imported manufacturing goods from China, safeguarding their national interests through industrial policies aimed at protecting and creating jobs. At the same time, it presents an opportunity for the Global South to take advantage of the turmoil. The rules of rebalanced globalization remain in the process of being defined. How Global South countries respond to Washington and Beijing with their own geoeconomic initiatives in 2026 is likely to shape the future global economic order.

30 OECD. “The OECD.AI Policy Navigator”. https://oecd.ai/en/dashboards/national

31 Government of India. “Powering the Future: The Semiconductor and AI Revolution”, August 15, 2025. https://www.pib.gov.in/FactsheetDetails.aspx?Id=149242

32 Ministry of Finance, Government of India. “Geo-economic fragmentation”

33 The World Bank. “International Debt Report 2025”, 2025. https://www.worldbank.org/en/programs/debt-statistics/idr/products?cid=ECR_LI_worldbank_EN_EXT_profilesubscribe

34 Organization for Economic Cooperation and Development. “Cuts in Official Development Assistance: OECD projections for 2025 and the near term,” June 26, 2025. https://www.oecd.org/en/publications/2025/06/cuts-in-official-development-assistance_e161f0c5/full-report.html

Technology

BRAVE NEW WORLD

Anirban Sarma
with Sauradeep Bag, Anulekha Nandi, Prateek Tripathi,
and Siddharth Yadav

The year 2025 saw several disruptive and emerging technologies advance from rhetoric, and experimentation, into ongoing expansion, to an accelerated phase of growth. Many of these developments were accompanied or driven by policies that are expected to influence tech futures worldwide. At the same time, as geopolitical flux increasingly defined the *Zeitgeist*, there emerged a rising sense of urgency about the need for digital sovereignty.

Taken together, artificial intelligence (AI), quantum computing, digital currencies, and nanotechnology represent a frontier where technology, power, and the political economy increasingly converge. AI is reshaping multiple domains of human activity. Quantum computing has the potential to disrupt existing advantages in encryption and transform information processing, thereby opening new avenues for scientific discovery. Digital currencies pose challenges to conventional monetary instruments and payment architectures, enabling new forms of statecraft and financial inclusion. Nanotechnology is driving advances in materials and electronics, with wide-ranging sectoral implications. The present article examines key megatrends associated with these technologies, and considers their possible trajectories in 2026.

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1. ARTIFICIAL INTELLIGENCE: RAPID AND FRAGMENTED GROWTH

As AI stakeholders prepare for the international AI Impact Summit to be hosted in India in February 2026, there has been a subtle shift in global conversations on AI. While earlier emphasis on AI safety, regulation, development, and governance will remain crucial, 2026 is expected to bring a growing focus on AI impacts and use cases. Indeed, AI applications and their impact could contribute USD 15.7 trillion to global GDP by 2030.[1]

The United States (US) and China are expected to remain dominant in the AI race, with their technology ecosystems exercising the greatest influence. Powerful competing chatbots released in 2025 partly illustrate this ongoing contest for supremacy. DeepSeek-R1, launched in January with 671 billion parameters[2], highlights China's emphasis on frugal innovation, while OpenAI's GPT-5, launched in August, was introduced as a successful extension of the ChatGPT family of generative AI models.

AI governance is set to enter a defining yet fragmented phase. This is an area where the voice and position of the Global South are expected to gain greater prominence, building on seminal articulations of 2025, such as the BRICS Leaders' Statement on the Global Governance of AI[3] and India's recently launched Governance Guidelines.[4] The former emphasizes AI cooperation, sovereignty, and development rooted in rights and personal data safeguards;

1 PwC, "Sizing the Prize: PwC's Global AI Study – Exploiting the AI Revolution," 2017, https://www.pwc.ch/en/publications/2017/pwc_global_ai_study_2017_en.pdf

2 Mayada Khatib, "DeepSeek R1: A Short Summary," Medium, January 25, 2025, https://medium.com/@mayadakhatib/deepseek-r1-a-short-summary-73b6b8ced9cf

3 "BRICS Signs AI Governance Declaration: Shaping Global AI Standards through Multilateral Cooperation," Nemko Digital, August 6, 2025, https://digital.nemko.com/news/brics-ai-governance-declaration-2025

4 India AI Governance Guidelines: Enabling Safe and Trusted AI Innovation, Ministry of Electronics and IT, Government of India, 2025, https://static.pib.gov.in/WriteReadData/specificdocs/documents/2025/nov/doc2025115685601.pdf

while the latter foregrounds trust, a people-first approach, responsible innovation, fairness and equity, transparency and accountability, and safety and sustainability. These points of focus differ markedly from those of the US AI Action Plan of 2025 which adopts a pro-innovation deregulatory stance designed to reinforce American leadership.[5] At the same time, the stringent risk-based regulation of the European Union AI Act,[6] which enters into force in August 2026, embodies a contrasting approach that some observers caution may constrain innovation.

These competing approaches underscore the importance of strengthening the global governance of AI in 2026. It will be essential to establish a shared baseline of values, although pathways to implementation may differ. In this regard, the work of the United Nations' Global Dialogue on AI Governance,[7] a new multilateral platform, is likely to gain urgency, along with the consensus-building activities of multistakeholder alliances like the Global Partnership on AI (GPAI). The non-binding nature of most normative frameworks developed by these and similar platforms, however, is expected to remain a continuing limitation.

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The dual-use nature of AI is projected to become more salient, with the global 'AI in military' market expected to generate USD 16,300 million in 2026, having grown at a CAGR of 14.5 percent since 2019.[8] Growth is driven primarily by rising demand for AI-integrated military equipment, cloud services, and an array of military applications such as AI-based cybersecurity tools and warfare platforms. These trends highlight the need for domain-specific agreements around ethics and governance, underlining the value of deliberative tracks like the UNIDIR-led Roundtable for AI, Security and Ethics (RAISE) and the Global Summit on Responsible AI in the Military Domain (REAIM).

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As 2026 advances, countries are expected to strengthen national AI capabilities[9] as competition between the United States (US) and China intensifies. The need to achieve greater alignment and harmonization of AI policies at the global level is likely to grow stronger. Two particular risks are expected to escalate further. The first is the exponential spread of AI-generated disinformation, including deepfake-induced frauds, which could constitute a form

5 Winning the Race: America's AI Action Plan, The White House, July 2025, https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf

6 "EU AI Act: First Regulation on Artificial Intelligence," European Parliament, June 8, 2023, https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence

7 "Global Dialogue on Artificial Intelligence," United Nations, https://www.un.org/global-dialogue-ai-governance/en

8 "Artificial Intelligence in Military Systems Will Grow 14.5% through 2026," Military Embedded Systems, June 27, 2019, https://militaryembedded.com/ai/deep-learning/artificial-intelligence-in-military-market-will-grow-14-5-cagr-through-2026

9 "Top 10 AI Trends to Watch in 2026," United States Artificial Intelligence Institute, October 1, 2025, https://www.usaii.org/ai-insights/top-10-ai-trends-to-watch-in-2026

of "mainstream cybercrime by 2026".[10] The second is the alarming growth of AI systems' energy footprints,[11] which may eventually necessitate a transition to more sustainable and energy-efficient solutions.

"Two particular risks are expected to escalate further. The first is the exponential spread of AI-generated disinformation, including deepfake-induced frauds, which could constitute a form of "mainstream cybercrime by 2026". The second is the alarming growth of AI systems' energy footprints, which may eventually necessitate a transition to more sustainable and energy-efficient solutions.

2. QUANTUM COMPUTING: TOWARD FAULT TOLERANCE AND ERROR CORRECTION

In 2024 and 2025, quantum computing shifted focus from increasing qubit counts[12] to fault tolerance and error correction.[13] The broad push for applications of quantum computing rather than headline qubit numbers will continue through 2026 and may ultimately mark the turning point towards fault-tolerant quantum computing (FTQC). In the near term, hybrid classical–quantum approaches are likely to deliver near-term benefits in areas such as quantum chemistry and related optimization problems.[14]

The year 2026 is expected to witness growing investor confidence in the field,[15] spurred by the declaration of 2025 as the "International Year of Quantum Science and Technology"; a host of technical advancements; greater participation from startups; and public investments of over USD 10 billion in the first quarter of 2025 alone, with Japan, the US, and Spain being the major contributors.[16]

"The year 2026 is expected to witness growing investor confidence in the field.

10 Roman Rafiq, "Preparing for the Next Wave of Deepfake Fraud in 2026," The Economic Times, December 4, 2025, https://ciso.economictimes.indiatimes.com/news/cybercrime-fraud/preparing-for-the-next-wave-of-deepfake-fraud-in-2026/125757320

11 "AI Is Set to Drive Surging Electricity Demand from Data Centres While Offering the Potential to Transform how the Energy Sector Works," International Energy Agency," April 10, 2025, https://www.iea.org/news/ai-is-set-to-drive-surging-electricity-demand-from-data-centres-while-offering-the-potential-to-transform-how-the-energy-sector-works

12 A qubit, or quantum bit, is the basic unit of information used to encode data in quantum computing.

13 Henning Soller, Martina Gschwendtner, Sara Shabani, and Waldemar Svejstrup, "The Year of Quantum: From Concept to Reality in 2025," McKinsey & Company, June 23, 2025, https://www.mckinsey.com/capabilities/tech-and-ai/our-insights/the-year-of-quantum-from-concept-to-reality-in-2025

14 Kimm Fesenmaier, "New Hybrid Quantum–Classical Computing Approach Used to Study Chemical Systems," California Institute of Technology, June 25, 2025, https://www.caltech.edu/about/news/new-hybrid-quantumclassical-computing-approach-used-to-study-chemical-systems

15 "2025 International Year of Quantum Science and Technology," UNESCO, https://quantum2025.org/

16 Soller et al, "The Year of Quantum: From Concept to Reality In 2025"

The commercial availability of quantum computers is continuing to grow, with 2026 expected to witness a major push towards commercial quantum computing applications. The US has established foundational capacities in this domain;[17] China introduced a superconducting quantum computer for commercial use in 2025;[18] and India introduced its first full-stack quantum computing system in April 2025,[19] with the startup behind the system subsequently unveiling its 64-qubit Kaveri quantum processor, scheduled for commercial release and use in 2026.[20]

The intricacies involved in the global quantum supply chain have emerged as major impediments for domestic manufacturing and international collaboration. For instance, India's National Quantum Mission mapped the global and domestic quantum landscape and flagged challenges such as low domestic investment and inadequate manufacturing and testing facilities.[21] These and related bottlenecks are expected to persist across the Global South in 2026. The hardware and rare minerals needed for quantum computing are difficult to secure, especially for Southern states, while increasingly stringent export controls by the US and China limit quantum development in other regions.[22] Although some emerging economies, such as India, possess relatively strong talent pools for software and algorithm design, the growing impulse towards building local manufacturing capabilities is likely to drive major investments and collaborative arrangements across the South as a bloc to avoid deepening technological dependence.[23]

The dual-use nature of quantum computing, particularly in terms of its encryption-breaking capabilities, is gradually leading to its increasing importance in national security considerations. For instance, India published a considered assessment of the national security implications of quantum technology, including recommendations on transitioning to post-quantum cryptography (PQC) and establishing bilateral partnerships.[24]

"The hardware and rare minerals needed for quantum computing are difficult to secure, especially for Southern states, while increasingly stringent export controls by the US and China limit quantum development in other regions.

17 "Quantum Breakthroughs: NIST & SQMS Lead the Way," National Institute Of Standards And Technology, April 4, 2025, https://www.nist.gov/news-events/news/2025/04/quantum-breakthroughs-nist-sqms-lead-way

18 Matt Swayne, "China Opens Its Superconducting Quantum Computer for Commercial Use," The Quantum Insider, October 14, 2025, https://thequantuminsider.com/2025/10/14/china-opens-its-superconducting-quantum-computer-for-commercial-use/

19 "Startup Selected under NQM Launches One of India's Most Powerful Quantum Computers," Ministry of Science and Technology, Government of India, April 15, 2025, https://www.pib.gov.in/PressReleasePage.aspx?PRID=2121845&reg=3&lang=2

20 "Startups Supported by Pune IISER's I-Hub Unveil New Developments in Quantum Technologies," The Indian Express, November 12, 2025, https://indianexpress.com/article/cities/pune/pune-iiser-i-hub-new-development-quantum-technologies-10361354/

21 "India's International Technology Engagement Strategy for Quantum Science, Technology and Innovation," Office of the Principal Scientific Advisor, Government of India, April 14, 2025, https://psa.gov.in/CMS/web/sites/default/files/publication/ITES_QWEBSITE1.pdf

22 "Department of Commerce Implements Controls on Quantum Computing and Other Advanced Technologies Alongside International Partners," Bureau of Industry and Security, US Department of Commerce, September 5, 2024, https://www.bis.gov/press-release/department-commerce-implements-controls-quantum-computing-other-advanced-technologies-alongside

23 Beth Stackpole, "Building a Quantum Workforce," MIT Sloan School of Management, September 15, 2025, https://mitsloan.mit.edu/ideas-made-to-matter/building-a-quantum-workforce

24 "Quantum Computing: National Security Implications and Strategic Preparedness," NITI Aayog, Government of India, March, 2025, https://www.niti.gov.in/sites/default/files/2025-03/Future-Front-Quarterly-Frontier-Tech-Insights-March-2025.pdf

> **The growing impulse towards building local manufacturing capabilities is likely to drive major investments and collaborative arrangements across the South as a bloc to avoid deepening technological dependence.**

Therefore, progress in quantum computing in 2026 is expected to be accompanied by a stronger global focus on PQC migration[25] given the threat that more advanced error correction and fault-tolerant machines pose to current encryption schemes. Furthermore, limited or noisy quantum computing systems may also witness increasing applications in specialized military tasks such as supply chain and logistics optimization, battle simulations, and mission planning.[26]

3. DIGITAL CURRENCIES: FROM IDEAS TO IMPLEMENTATION

2025 marked the year digital currency frameworks transitioned from white papers to implementation, a transition that has gained substantial momentum. Major jurisdictions codified approaches: Hong Kong formalized its stablecoin regime,[27] the US enacted the long-debated GENIUS Act,[28] and regional payment rail experiments gained traction. Central banks are also moving beyond pilots. For example, the Reserve Bank of India expanded its retail Central Bank Digital Currency (CBDC) sandbox[29] to large private banks. It launched deposit tokenization pilots, integrating digital rupee trials with mainstream banking operations, a shift positioned to drive key transformations in the foreseeable future.

The global digital currency ecosystem in 2025 was characterized by two countervailing forces: tightening state control and regional financial integration. This dynamic is anticipated to endure in 2026 and the years that follow. Several developed economies institutionalized digital asset oversight,[30] embedding stablecoins into existing regulatory frameworks to protect consumers and prevent systemic shocks. Certain emerging markets, on the other hand, leveraged CBDCs and regional payment networks to reduce remittance costs and strengthen monetary sovereignty.

> **The global digital currency ecosystem in 2025 was characterized by two countervailing forces: tightening state control and regional financial integration. This dynamic is anticipated to endure in 2026 and the years that follow.**

25 Countries like the United Kingdom and Canada have already issued PQC migration roadmaps in 2025.

26 Michal Krelina, "An Introduction to Military Quantum Technology for Policymakers," Stockholm International Peace Research Institute, March, 2025, https://www.sipri.org/publications/2025/sipri-background-papers/introduction-military-quantum-technology-policymakers

27 Hong Kong Monetary Authority, "Stablecoin Issuers and Arrangements," HKMA, 2025, https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/stablecoin-issuers/

28 The White House, "Fact Sheet: President Donald J. Trump Signs GENIUS Act into Law," July 2025, https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-president-donald-j-trump-signs-genius-act-into-law/

29 Reuters, "India's Central Bank Launches Digital Currency Retail Sandbox," 8 October 2025, https://www.reuters.com/world/india/indias-central-bank-launches-digital-currency-retail-sandbox-2025-10-08/

30 State Street, "Digital Digest March 2025: Digital Assets & AI Regulation," 2025, https://www.statestreet.com/in/en/insights/digital-digest-march-2025-digital-assets-ai-regulation

Across Africa, initiatives such as COMESA's Digital Retail Payments Platform[31] are enabling cross-border settlement in local currencies, creating a template for South–South digital trade.

Transatlantic policy choices are expected to play a central role in influencing the global trajectory of digital currencies. The US and Europe have taken noticeably different positions on CBDC development. In the US, policymakers[32] have shown greater support for regulated stablecoins while expressing caution that a retail CBDC might disrupt private-sector innovation and the existing financial system. In March 2025, the US government announced[33] plans for establishing a Strategic Bitcoin Reserve and a "Digital Asset Stockpile" to hold cryptocurrencies seized in criminal cases. In contrast, European authorities[34] frame the Digital Euro as essential for safeguarding monetary sovereignty, improving payments efficiency, and ensuring continued public access to central-bank money in an increasingly digital economy.

The potential dividends of a well-calibrated digital currency ecosystem are becoming evident. Properly designed CBDCs and regulated stablecoins have the potential to extend[35] financial inclusion through low-cost digital wallets, offline transaction capabilities, and instant settlement. These tools can streamline domestic payments, lower remittance costs that are vital for many developing economies, and offer countries with limited correspondent banking links regional payment rails to settle cross-border[36] trade in local currencies, reinforcing monetary sovereignty. Structural and operational risks, however, warrant careful consideration. Concerns[37] include privacy and cybersecurity vulnerabilities, dependence on a narrow set of technology providers, and overly stringent tax[38] and KYC regimes that may drive fintech talent, innovation, and capital offshore.

From 2026 onward, four structural shifts are expected to shape the digital currency space. First, sovereign digital payments are likely to become more embedded in everyday retail transactions and government subsidy programmes, normalizing Central Bank Digital Currencies (CBDCs) in routine economic activity across several geographies. Second, tokenization and programmable money are projected to expand across financial instruments, enhancing efficiency, liquidity, and transparency. Third, regional payment rails in Global South blocs are likely to reduce frictions in remittances and cross-border trade, strengthening monetary sovereignty. Finally, tensions between privacy advocates and regulatory and security imperatives are expected to incentivize advances in cryptographic privacy solutions and legal refinements.

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31 COMESA, "COMESA Launches Digital Retail Payments Platform," 2025, https://www.comesa.int/104403-2/

32 Atlantic Council, "Central-Bank Digital Currencies versus Stablecoins: Divergent EU and US Perspectives," Econographics blog, 2025, https://www.atlanticcouncil.org/blogs/econographics/central-bank-digital-currencies-versus-stablecoins-divergent-eu-and-us-perspectives

33 The White House, "Establishment of the Strategic Bitcoin Reserve and United States Digital Asset Stockpile," March 2025, https://www.whitehouse.gov/presidential-actions/2025/03/establishment-of-the-strategic-bitcoin-reserve-and-united-states-digital-asset-stockpile/

34 European Central Bank, "ECB Press Release — Digital Euro Project Update," March 2025, https://www.ecb.europa.eu/press/key/date/2025/html/ecb.sp250320_1~41c9459722.en.html

35 United Nations Development Programme, "Driving Financial Inclusion through CBDCs," UNDP Report, June 2025, https://www.undp.org/sites/g/files/zskgke326/files/2025-06/undp-driving-financial-inclusion-through-cbdcs.pdf

36 World Bank / International Finance Division, "Central Bank Digital Currencies for Cross-Border Payments: A Review of Current Experiments and Ideas," World Bank Policy Paper, 2025, https://documents1.worldbank.org/curated/en/369001638871862939/pdf/Central-Bank-Digital-Currencies-for-Cross-border-Payments-A-Review-of-Current-Experiments-and-Ideas.pdf

37 Bank for International Settlements, "Cyber Risks in a World of Digital Money," BIS Report, 2025, https://www.bis.org/publ/othp81.pdf

38 Yibin Mu and Angela Mu, "CBDC: Concepts, Benefits, Risks, Design, and Implications," SSRN Working Paper, 1 October 2022, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4234876

4. NANOTECHNOLOGY: ADVANCEMENTS IN SPINTRONICS AND NEXT-GEN ELECTRONICS

2025 witnessed the emergence of a spectrum of early-phase nanotechnology projects globally, ranging from nanofiltration plants for water security,[39] to new methods for constructing biopolymer composite films to reduce reliance on non-biodegradable single-use packaging,[40] and pesticides using nanomaterial carriers for more effective delivery.[41] Collectively, these and other initiatives illustrate the gradual integration of nanotechnology into diverse sectors across countries. Within the field as a whole, innovations in spin electronics or spintronics have been identified as a strategic area of research by various countries.[42]

The AI boom of recent years appears to be slowing marginally, and investor confidence in AI-native companies such as OpenAI has exhibited signs of decline. This market shift is primarily driven by the sentiment that LLM architectures underpinning AI tools such as ChatGPT may be approaching their current limits. The high-energy cost of training and deploying frontier models has further strained national infrastructures and power grids. In this landscape, spintronics innovations present a potential pathway, promising higher energy efficiency, heat tolerance, and faster data processing for demanding tasks such as AI development. Given the possibility, however distant, of an AI winter, countries have begun investing in the next generation of advanced materials to stay ahead of the technological curve.

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Nations across the globe have identified nanotechnology and specifically spintronics as an enabling platform that can deliver cheaper and more efficient technologies. The significance of spintronics is highlighted in strategies such as the US National Strategy on Microelectronics Research (2025),[43] the Czech Republic National Semiconductor Strategy anchored

39 "Egypt's ORASCOM Says EPC Works Underway at Seawater Treatment Plant in Abu Dhabi," Zawya, September 1, 2025, https://www.zawya.com/en/projects/utilities/egypts-orascom-epc-works-underway-at-seawater-treatment-plant-in-abu-dhabi-qrmbue1m

40 Xuanjun Hun, Chao Lu, Howyn Tang, Hossein Pouri, Etienne Joulin and Jin Zhang, "Active Food Packaging Made of Biopolymer-Based Composites," Materials, 16 (1), 2023, https://www.mdpi.com/1996-1944/16/1/279

41 Ravinder Kumar, Naresh Kumar et al., "Advances in Biopolymeric Nanopesticides: A New Eco-Friendly/Eco-Protective Perspective in Precision Agriculture," Nanomaterials, 12 (22), 2022, https://www.mdpi.com/2079-4991/12/22/3964

42 Spintronics is a field of electronics that uses an electronics spin and magnetic moment, in addition to electric charge, for storing, processing and transmitting information in solid state devices.

43 The White House, "National Strategy for Microelectronics Research," April 2025, https://www.whitehouse.gov/wp-content/uploads/2025/03/Amended-National-Strategy-on-Microelectronics-Research.pdf

in the EU Chips Act,[44] the France 2030 — SPIN-V (spintronics innovation) program,[45] Saudi Arabia's 'Strategic Priorities for the Nanotechnology Program',[46] and, in India, NITI Aayog's 2025 primer on the future of two-dimensional (2D) materials which notes the confluence of innovations in 2D materials and spintronic devices as driving the next phase of digital innovation.[47]

Strategic interest in the technology has been accompanied by scientific advancements that have brought spintronic-enabled commercial devices closer to market deployment. 2026 is expected to witness advanced prototypes of spintronic neural networks that can process data much more efficiently than GPU-based systems. Another advancement may occur in the electric vehicle (EV) sector. EVs require electronics that can withstand high temperatures and 2026 may prove to be a breakthrough year for spintronics-based Magnetoresistive RAM (MRAM) capable of addressing this challenge.[48]

Partly due to the ever-increasing energy cost of frontier AI development, growing government interest in nanotechnology and subfields like spintronics is expected to boost investments in materials research in 2026.

The AI race already has incumbents. To move ahead, major economic powers outside the US and China are likely to expand budgets for advanced materials research driven by the need for future-readiness. 2026 may be a momentous year in the EU for nanomaterial regulation. EU Regulation 2024/858 that amends the EU Cosmetics Regulation by banning prohibited nanomaterials in commercial products has a critical deadline in 2026.[49] A potential regulatory milestone could be reached in 2026 with the European Commission's 'Safe and Sustainable by Design' framework.[50] The framework, which is expected to introduce new data submission requirements for companies producing or importing nanomaterials, could mark incremental progress toward aligning innovation with oversight, potentially ushering in an era in which safe-by-design nanomaterials become the default.

In 2025, developments in AI, quantum computing, digital currencies, and nanotech revealed both the speed of technological change, and its unevenness across geographies. The road ahead is likely to be characterized less by tech breakthroughs themselves than by the choices societies make about innovation, growth, guardrails, and control.

"Partly due to the ever-increasing energy cost of frontier AI development, growing government interest in nanotechnology and subfields like spintronics is expected to boost investments in materials research in 2026.

44 Office of the Government of the Czech Republic, "National Semiconductor Strategy," 2024, https://www.dataplan.info/img_upload/7bdb1584e3b8a53d337518d988763f8d/national-semiconductor-strategy-cz.pdf

45 French National Centre for Scientific Research. Https://www.cnrs.fr/sites/default/files/press_info/2024-01/CP%20SPIN-V%20EN.pdf, 2024.

46 Kingdom of Saudi Arabia, Ministry of Economy and Planning, Strategic Priorities for Nanotechnology Program (KSA: Ministry of Health), https://npst.ksu.edu.sa/sites/npst.ksu.edu.sa/files/imce_images/nano.pdf

47 NITI Aayog, "Introduction to 2D Materials," NITI Frontier Tech Hub, September 2025, https://www.niti.gov.in/sites/default/files/2025-09/FTH-Quaterly-Insight-Sep-2025.pdf

48 Magnetoresistive RAM (MRAM) is a high-speed, non-volatile memory technology that stores data using magnetic states instead of electric charges, retaining information even when power is lost.

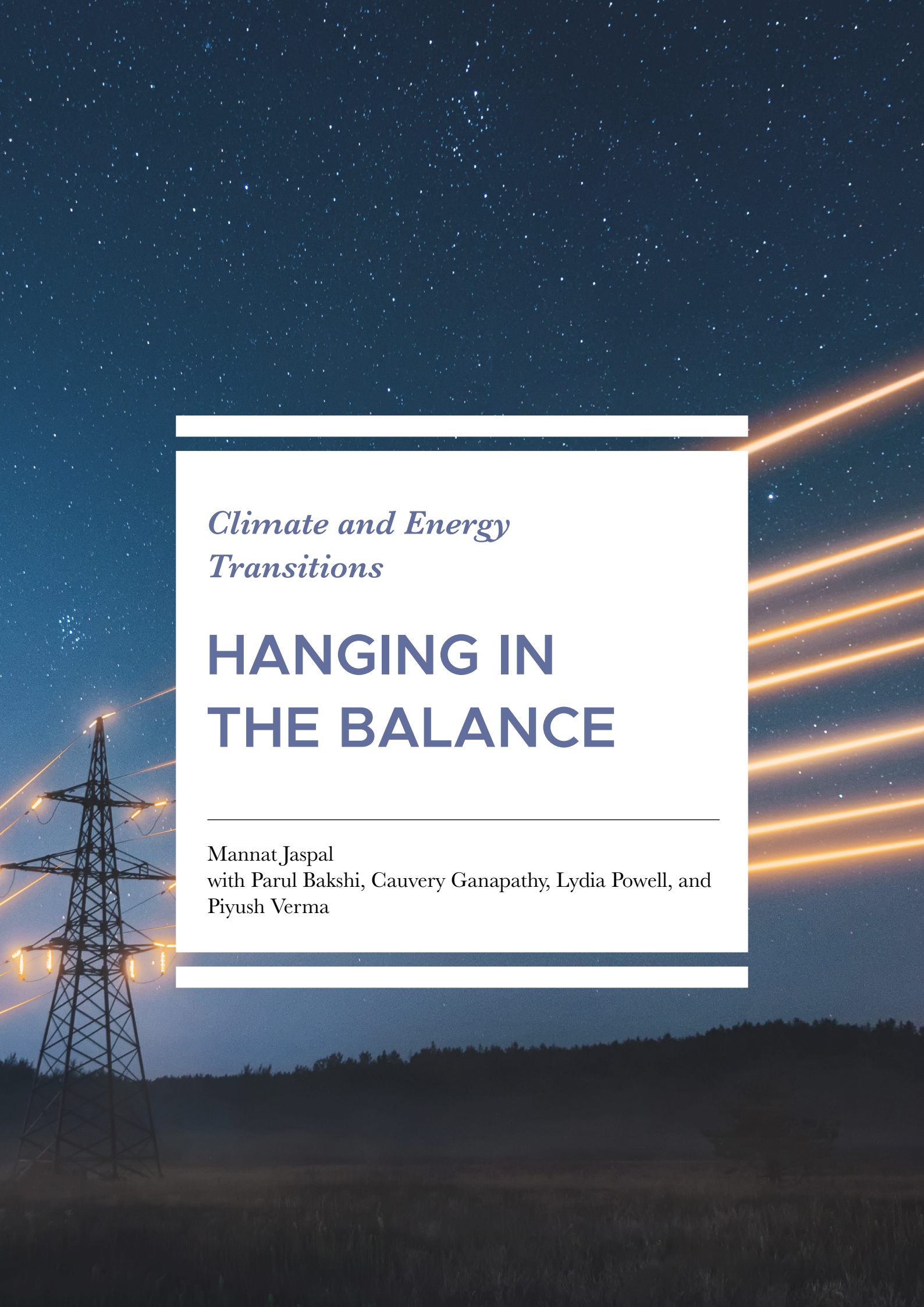
49 Alejandra Serrano Romero, "Cosmetic Products Regulation 2026: How to Adapt Packaging and Labelling," MarCoPack, https://marcopack.com/en/cosmetic-products-regulation-2026-how-to-adapt-packaging-and-labeling/#:~:text=Restrictions%20on%20nanomaterials%3A%20For%20example,and%201%20November%202025%20for

50 "Safe and sustainable by design," European Commission, https://research-and-innovation.ec.europa.eu/research-area/industrial-research-and-innovation/chemicals-and-advanced-materials/safe-and-sustainable-design_en

A common strand that has begun to run through many state interventions is a desire for digital sovereignty: every country's quest for control over its digital infrastructure, data, and citizen-facing technologies in the interest of its people.

THE ROAD AHEAD

The era of AI diffusion is expected to intensify in 2026, with a sharp rise in AI's civilian and military uses. But competition over AI development will be matched in importance by the need to find convergences between governance models and principles. The deeply fractured landscape of AI governance is likely to render consensus-building initiatives more important than ever. The field of quantum computing is expected to benefit from greater investment, and see a shift: from pursuing increased qubit counts towards finding a wider range of practical applications, and making quantum computers commercially available. 2026 is also expected to witness the use of digital currencies becoming more entrenched in certain regions, and facilitate potentially smoother remittance transfers and cross-border trade across pockets of the Global South. Finally, nanotechnology will begin to play a decisive role in shaping the future of materials, with specific nanotechnologies such as spintronics emerging as central to innovation and investment.



Climate and Energy Transitions

HANGING IN THE BALANCE

Mannat Jaspal
with Parul Bakshi, Cauvery Ganapathy, Lydia Powell, and Piyush Verma

According to the United Nations Environment Programme's Emissions Gap Report 2024,[1] the full implementation of unconditional or conditional Nationally Determined Contribution (NDC) scenarios is projected to lower global warming to 2.8°C and 2.6°C respectively over the course of the century, demonstrating that we remain clearly off-track in meeting the goals of the Paris Agreement to limit temperature rise to 1.5°C above pre-industrial levels. As of June 2024,[2] 101 parties covering approximately 82 per cent of global greenhouse gas emissions have adopted net-zero pledges either in law, in a policy document or via a high-level government announcement.

Yet as we enter 2026, climate and energy policies are being shaped not only by decarbonization imperatives. Geopolitical upheaval, technological competition, economic transformation, supply chain resilience, and national security concerns are exerting influence over the future of energy and climate policies worldwide. For the Global South, these present both unprecedented opportunities and enduring vulnerabilities—calling for a delicate balance between access, affordability, and industrial competitiveness.

"Geopolitical upheaval, technological competition, economic transformation, supply chain resilience, and national security concerns are exerting influence over the future of energy and climate policies worldwide.

1. DEEPENING DIVERGENCES IN ENERGY AND CLIMATE POLICY

The fierce pursuit of energy security; intensified since the Covid-19 pandemic and the conflicts in Europe and the Middle East, has evolved into political narratives centered on energy sovereignty and dominance. Early in 2025, for instance, the United States (US) established a National Energy Dominance Council[1] to restore American energy dominance and expand American energy production. While renewable energy additions have expanded at record levels, fossil fuels continue to contribute over 80 percent of the energy mix ,[2] given renewable energy conversions remain inefficient in many applications. Oil demand and production are projected to continue growing through 2026. In this context, the recently concluded COP30 Summit in Belem was notable for the stark absence of any reference to fossil fuels in the official communication[3] – a departure from the landmark "United Arab Emirates consensus" agreement at COP28 in Dubai, which included the breakthrough commitment from countries to "transition away from fossil fuels."[4]

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1 United Nations Environment Programme, Emissions Gap Report 2024, October 2024, Nairobi, UNEP, 2024, https://www.unep.org/resources/emissions-gap-report-2024

2 "Emissions Gap Report 2024, October 2024"

3 Establishing the National Energy Dominance Council, The White House, February 14, 2025, https://www.whitehouse.gov/presidential-actions/2025/02/establishing-the-national-energy-dominance-council/

4 Martina Igini, "Fossil Fuels Accounted for 82% of Global Energy Mix in 2023 Amid Record Consumption: Report," Earth.org, June 26, 2024, https://earth.org/fossil-fuel-accounted-for-82-of-global-energy-mix-in-2023-amid-record-consumption-report/

5 UN Framework Convention on Climate Change, Global Mutirão: Uniting Humanity in a Global Mobilization Against Climate Change, November 2025, Belém, UNFCCC,2025, https://unfccc.int/sites/default/files/resource/cma2025_L24_adv.pdf

6 Tim McDonnell, "COP30 Falls Short of Ambitious Deal," SEMAFO, November 22, 2025, https://www.semafor.com/article/11/22/2025/cop30-falls-short-of-ambitious-deal-on-fossil-fuels?utm_medium=net+zero&utm_campaign=semafor-story&utm_source=newslettercta

At the same time, we are witnessing a rise in inward-looking domestic clean-energy industrial policies. First accelerated by the U.S. Inflation Reduction Act[7] and EU Green Deal Industrial Plan ,[8] a similar trend is emerging globally as Latin American and Asian economies replicate frameworks and policies to localize production of renewables, storage, and hydrogen components, increasingly extending to energy-efficient AI chips. This reflects the return of industrial policies manifesting through growing state intervention using policy tools such as subsidies, public investment, and green manufacturing. The aim is to incentivize and secure domestic clean-energy supply chains, prompted strongly from a desire to significantly reduce exposure and reliance on deeply entrenched Chinese green energy supply chains. Climate governance, therefore, is increasingly being framed through a security lens, linking emissions reduction to national resilience, industrial competitiveness, and export dominance. This stark dichotomy and divergence in fossil-fuel-driven energy security and domestically anchored clean-energy industrial strategy is likely to be the defining divergence to monitor with caution in 2026.

2. HEIGHTENED SECURITIZATION OF SUPPLY CHAINS AND DIVERSIFICATION OF TRADE CORRIDORS

Strategic chokepoints such as the Straits of Hormuz, Bab-al-Mandab, Malacca, and Sunda have become flashpoints, prompting heightened securitization of energy and the critical infrastructure associated with it. Relatedly, as maritime risk premiums rise and shipping companies face mounting pressures,[9] governments are expected to intervene, either by underwriting some of that risk or by incentivizing, if not mandating, companies to absorb it on the grounds that energy shipments are essential inputs contributing to national security. Simultaneously, China's proven ability and intent to weaponize its monopoly over 70 percent of the global rare-earth resources and 90 percent of processing[10] has introduced substantial supply-chain risks, effectively holding global manufacturing hostage to its export leverage. China's control over renewable-energy value chains is increasingly regarded as a national security threat.

Supply chains are increasingly being re-engineered through political measures such as stockpiles, export controls, and friend-shoring corridors. This tendency to weaponize energy dependencies is likely to drive countries towards more aggressive renewable- and clean-energy targets domestically.[11]

As a counterbalance, we are likely to witness a proliferation and strengthening of critical alternative energy corridors in order to diversify supply chains and connectivity routes – such as the IMEC (India-Middle East-Europe Corridor) ; I2U2 (India, Israel, UAE, USA); the Lobito Corridor connecting Angola to the Democratic Republic of Congo in Africa; the

"China's proven ability and intent to weaponize its monopoly over 70 percent of the global rare-earth resources and 90 percent of processing has introduced substantial supply-chain risks, effectively holding global manufacturing hostage to its export leverage.

7 "Inflation Reduction Act of 2022," U.S.Department of Energy, September 22, 2023, https://www.energy.gov/lpo/inflation-reduction-act-2022

8 European Commission, "The Green Deal Industrial Plan Putting Europe's Net-Zero Industry in the Lead," European Commission, https://commission.europa.eu/topics/competitiveness/green-deal-industrial-plan_en

9 Wil Crisp, "Gulf Shipping Insurance Costs to Remain Elevated," Middle East Business Intelligence, August 13, 2019, https://www.meed.com/gulf-shipping-insurance-premiums-to-remain-high-due-to-tensions-between-the-us-and-iran

10 Earl Carr, "China's New Export Controls: Critical Implications For U.S. Businesses,"Forbes, October 17, 2025, https://www.forbes.com/sites/earlcarr/2025/10/17/chinas-new-export-controls-critical-implications-for-us-businesses/

11 European Commission, "REPowerEU Affordable, Secure and Sustainable Energy for Europe," European Commission, https://commission.europa.eu/topics/energy/repowereu_en

Northern Sea Route connecting Northern Europe with the Asia-Pacific via the Artic shipping lane, a shorter alternative to the conventional Suez Canal route; and the Trans Caspian international transport route connecting China to Europe via Central Asia while bypassing Russia. These routes are expected to reorient mineral and energy trade through politically aligned geographies. We are also likely to see the signing of more off-take agreements with countries in Central Asia and Africa in order to establish resilient supply-chains. While the search for alternative supply sources and routes in the case of hydrocarbons is expected to continue throughout 2026, efforts to reduce dependence on China for critical minerals[12] are unlikely to prove successful overall, and the efforts underway globally to develop alternative supply chains[13] are unlikely to yield results within the next five to seven years, even under optimistic scenarios. This despite significant undertakings such as defense establishments now becoming direct players in the game, as seen in the U.S. Department of Defense's investment in MP Materials in partnership with Saudi Arabia's Maaden, to secure rare-earth supplies.[14]

> **"The aim is to incentivize and secure domestic clean-energy supply chains, prompted strongly from a desire to significantly reduce exposure and reliance on deeply entrenched Chinese green energy supply chains.**

3. RISING IMPACT OF ARTIFICIAL INTELLIGENCE (AI) ON ENERGY AND CLIMATE POLITICS

Digitalization has introduced a new variable in the energy equation. The IEA 'Energy and AI'[15] Report highlighted the exponential rise in data-centre electricity demand, driven by AI, blockchain, and cloud computing. AI accounts for almost 5-15% of data centre power use, projected to increase to 35-50%[16] by 2030. In fact, AI and climate[17] as a combined topic has been included into the COP30 Action Agenda for the first time.

This surge is driving a renaissance in nuclear power – a firm dispatchable power source. A growing number of countries have enacted national legislations establishing regulatory frameworks for the introduction or re-introduction of nuclear power.[18] Many have reversed their no-nuclear policy. Nuclear safety protocols and regulatory frameworks are supported by growing investments in the sector – most notably from the private sector, for instance Microsoft join-

12 "United States-Japan Framework For Securing the Supply of Critical Minerals and Rare Earths through Mining and Processing," The White House, October 27, 2025, https://www.whitehouse.gov/briefings-statements/2025/10/united-states-japan-framework-for-securing-the-supply-of-critical-minerals-and-rare-earths-through-mining-and-processing/

13 "United States-Japan Framework For Securing the Supply of Critical Minerals and Rare Earths through Mining and Processing"

14 "Maaden and MP Materials Collaborate to Establish Full Value Chain for Rare Earth Magnetics," MP Materials, May 14, 2025, https://mpmaterials.com/news/maaden-and-mp-materials-collaborate-to-establish-full-value-chain-for-rare-earth-magnetics/

15 Thomas Spencer and Siddharth Singh, Energy and AI, International Energy Agency, 2025, https://iea.blob.core.windows.net/assets/601eaec9-ba91-4623-819b-4ded331ec9e8/EnergyandAI.pdf

16 Establishing the National Energy Dominance Council, The White House

17 High-Level Champions for Climate Action, Outcomes Report of the Global Climate Action Agenda at COP 30, November 2025, United Nations Climate Change, 2025, https://unfccc.int/sites/default/files/resource/COP30%20Action%20Agenda_Final%20Report.docx.pdf

18 World Nuclear Association, "Emerging Nuclear Energy Countries," World Nuclear Association, https://world-nuclear.org/information-library/country-profiles/others/emerging-nuclear-energy-countries l.

ing the World Nuclear Association[19] ; and from international financial institutions, with the World Bank's revocation of the moratorium[20] it had placed on underwriting nuclear-energy projects, a watershed that will trigger substantial financial flows into the sector. To sustain this shift, grid modernization and flexibility are becoming urgent priorities. Governments from ASEAN[21] to the GCC are investing in smart grids and expansion to accommodate both industrial decarbonization and surging data centre demand.

The challenge ahead will be balancing energy allocation between civilian and digital infrastructure — a tension that will increasingly define national energy strategies. Cybersecurity and data privacy concerns will also intensify in this new era of grid digitization. Data centers are also water-intensive and will inevitably place unprecedented pressures on water ecosystems, pushing them to the point of extreme stress. Water scarcity and water-driven conflict will increasingly add a security dimension to this challenge.

"The challenge ahead will be balancing energy allocation between civilian and digital infrastructure— a tension that will increasingly define national energy strategies.

4. ENTRENCHING ENERGY-CLIMATE-TRADE NEXUS

Trade has become a frontline of climate policy, with carbon-related measures now shaping how goods move, how value chains are structured, and who bears the cost of decarbonization. For India and the wider Global South, the immediate contest is to ensure these emerging trade rules do not lock in asymmetric obligations[22] or de-facto barriers just as their industrial transitions gather pace.

With the EU's Carbon Border Adjustment Mechanism (CBAM)[23] shifting from its current transitional reporting phase into the definitive, price-bearing phase on 1 January 2026,[24] importers of steel, cement, and other covered products will need verified emissions data and must purchase CBAM certificates tied to the EU carbon price. This development moves carbon governance from soft disclosure to hard con-

"Trade has become a frontline of climate policy, with carbon-related measures now shaping how goods move, how value chains are structured, and who bears the cost of decarbonization.

19 "World Nuclear Association Welcomes Microsoft Corporation as Newest Member," World Nuclear Association, September 3, 2025, https://world-nuclear.org/news-and-media/press-statements/world-nuclear-association-welcomes-microsoft-corporation-as-newest-member

20 "World Bank ends ban on funding nuclear energy," World Nuclear News, June 12, 2025, https://www.world-nuclear-news.org/articles/world-bank-agrees-to-end-ban-on-funding-nuclear-energy

21 Nathania Azalia, comment on "The Rise of Data Centres, Artificial Intelligence, and ASEAN's Decarbonisation Goal," ASEAN Climate Change and Energy Project: Phase 2 (ACCEPT II), comment posted June 24, 2025, https://accept.aseanenergy.org/the-rise-of-data-centres-artificial-intelligence-and-aseans-decarbonisation-goal

22 Enrico D'Ambrogio," EU-India relations:Time for a new boost?", European Parliamentary Research Service, February 19, 2025, https://www.europarl.europa.eu/RegData/etudes/BRIE/2025/769496/EPRS_BRI(2025)769496_EN.pdf

23 European Union, "Carbon Border Adjustment Mechanism (CBAM) Questions and Answers", EU, https://taxation-customs.ec.europa.eu/system/files/2023-11/CBAM%20Frequently%20Asked%20Questions_November%202023.pdf

24 European Commission, "Carbon Border Adjustment Mechanism", European Commission, https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en

ditionality. In parallel, the G7-anchored Climate Club ,[25] launched through the 2023–24 G7 process[26] and expanded at COP28, is building a cooperative framework on industrial decarbonization[27] , carbon-leakage disciplines, and common methodologies for hard-to-abate sectors such as steel and cement.

India has repeatedly characterized CBAM as unfair[28] and inconsistent with common-but-differentiated responsibilities, with senior ministers flagging it as "unacceptable" and "discriminatory" for developing-country exporters in public remarks and in parliamentary and G20 discussions.[29] Along with the other emerging economies, New Delhi has used G20, WTO, and UNFCCC platforms to warn that unilateral carbon border measures could undermine development, and has called instead for cooperative arrangements on standards, finance, and technology that recognize diverse starting points and per capita emissions. The CBAM flashpoints at recent COPs, including the failure to bridge differences over EU trade measures at COP30 , underline that the energy–climate–trade nexus is now central to the legitimacy of the global trading system, not just a peripheral technical issue.

5. RETRENCHING FINANCE FOR CLIMATE ACTION

Investments in clean energy in emerging and developing economies (EDMEs) must triple from USD770 billion in 2022 to USD 2.2–2.8 trillion annually by the early 2030s.[30] The COP30[31] in Belem established commitments to mobilize USD 1.3 trillion annually by 2035[32] for climate action as well as double adaptation finance by 2025 and triple it by 2035. In the backdrop of a USD 110 trillion[33] global economy and financial markets, this represents a significant yet manageable capital allocation. Yet, the investment for energy transition and climate action remains far from sufficient to meet the global net-zero targets. Instead, despite renewables becoming increasingly competitive and economically feasible, we are witnessing a retrenchment in climate-focused investments. This can be attributed to growing trade dependencies, lack of "bankable" projects, high cost of capital in EMDEs, and shifting investor priorities given the mixed policy signaling – most strongly from the current dispensation in the US.

A striking example is the dissolution of the Net-Zero Banking Alliance (NZBA)[34], the banking arms of the

25 Climate Club, "Terms of Reference for the Climate Club", Climate Club, https://climate-club.org/wp-content/uploads/2023/11/TOR-CC-logo.pdf

26 Climate Club, "Terms of Reference for the Climate Club"

27 Stephan Raes et al., Industry on the road to 2050, Climate Club, 2020, https://climate-club.org/wp-content/uploads/2025/11/Industry-on-the-road-to-2050.pdf

28 Archis Mohan, "Jaishankar criticises EU carbon tax, calls CBAM unacceptable for India," Business Standard, June 11, 2025, https://www.business-standard.com/economy/news/jaishankar-eu-carbon-tax-unacceptable-cbam-india-trade-125061101220_1.html.

29 Dr. S. Jaishankar, G20 Foreign Ministers' Meeting (speech, Rio de Janeiro, September 25, 2024), Government of India Ministry of External Affairs, https://www.mea.gov.in/Speeches-Statements.htm?dtl%2F38342%2FRemarks_by_EAM_Dr_S_Jaishankar_at_G20_Foreign_Ministers_Meeting

30 Mannat Jaspal, "The UAE Climate Finance and ODA Nexus: An Evolving Strategy for the Global South Green Transition," ORF Middle East, October 30, 2025, https://orfme.org/expert-speak/the-uaes-evolving-climate-finance-strategy-in-the-global-souths-green-transition/

31 Simon Flowers, Ed Crooks, Prakash Sharma, Stephen Vogado, Gavin Thompson, Chenglin Wu, "Five key takeaways from COP30," Wood Mackenzie, November 25, 2025, https://www.woodmac.com/blogs/the-edge/five-key-takeaways-from-cop30/

32 Felipe de Carvalho, "Belém COP30 delivers climate finance boost and a pledge to plan fossil fuel transition," UN, November 22,2025, https://news.un.org/en/story/2025/11/1166433#:~:text=In%20a%20pivotal%20outcome%20at,move%20away%20from%20fossil%20fuels.

33 "Emissions Gap Report 2024, October 2024"

34 Marguerite Laville and Edouard Vilpoux, What the NZBA Leaves Behind Stocktake on Banks' Net Zero Interim Targets, October 2025, Paris, Sustainable Finance Observatory, 2025, https://sustainablefinanceobservatory.org/wp-content/uploads/2025/10/2025-09-Note-on-NZA-develoments-EN.pdf

Glasgow Financial Alliance for Net Zero (GFANZ), in October 2025, following several months of withdrawals from major US banks such as Goldman Sachs, JPMorgan Chase, Citigroup, Wells Fargo, Morgan Stanley; followed by European banks such as HSBC, Barclays, and UBS and finally Blackrock – driven largely by political and fiduciary pressures. Reflecting this shift, the GFANZ has revised its mandate from[35] a 'whole economy transition' in 2021 to 'transition finance opportunities and solutions' in 2025. Even the Sovereign Wealth Funds (SWFs), which are being deployed to underwrite climate investments with long-gestation periods, are beginning to shift priorities from purpose-driven or climate-centered investments back to profit-oriented strategies. While western capital appears to be retrenching, global sovereign investors allocated more funds to green assets than black assets in 2023; amounting to USD 26.1 billion[36], primarily driven by the Gulf Cooperation Council (GCC) SWFs.

"For the Global South, the coming years will depend on balancing industrial competitiveness, affordability, and equity within this contested climate architecture.

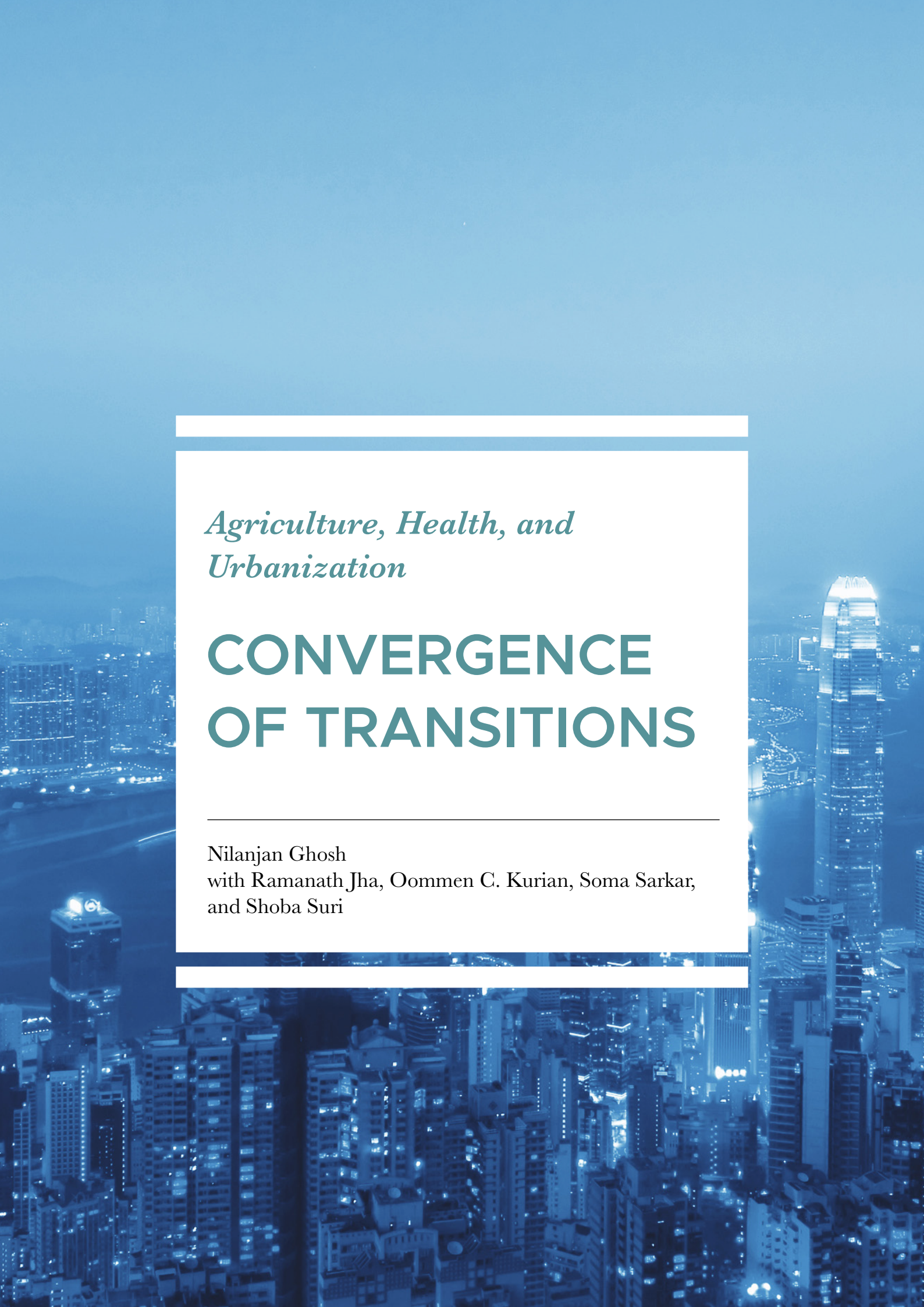
CONCLUSION

The 2026 megatrends are not necessarily novel but are a pronounced manifestation of patterns shaped by years of policy inaction and neglect across the global energy and climate landscape. Energy sovereignty, securitized supply chains, and digital-era power demand will be the buzzwords dominating the discourse. For the Global South, the coming years will depend on balancing industrial competitiveness, affordability, and equity within this contested climate architecture.

The energy transition and climate agenda is inevitable, but how countries navigate this delicate balance between decarbonization and development will shape its pace and progress.

35 Glasgow Financial Alliance for Net Zero, "Bringing Together the Financial Sector to Accelerate the Transition to a Net-Zero Economy," GFANZ, https://web.archive.org/web/20211013110623/https:/www.gfanzero.com/

36 Mannat Jaspal, "The UAE Climate Finance and ODA Nexus: An Evolving Strategy for the Global South Green Transition"



Agriculture, Health, and Urbanization

CONVERGENCE OF TRANSITIONS

Nilanjan Ghosh
with Ramanath Jha, Oommen C. Kurian, Soma Sarkar, and Shoba Suri

The pursuit of the Sustainable Development Goals by 2030 underscores the growing interlinkages of food, health, and urban systems that are increasingly recognized as a defining megatrend for 2026. These systems can be conceptualized as an intricately connected living infrastructure for life and livelihoods in an era of polycrisis.[1] For the Global South, the complexity is heightened by the interaction of climate change, rapid urbanization, evolving consumption patterns, and emerging health concerns that raise critical questions regarding the sustainability of the business-as-usual developmental pathways. A distinctive feature of the year 2026 is the convergence of several transitions: food systems are being reshaped by regenerative practices and digital technologies, health governance is undergoing reform within a post-pandemic framework, and cities are simultaneously sites of vulnerability and centers of innovation.

> **The interaction of climate change, rapid urbanization, evolving consumption patterns, and emerging health concerns raise critical questions regarding the sustainability of business-as-usual developmental pathways.**

1. TRANSITION FROM EXTRACTION TO REGENERATION

Agriculture in 2026 is expected to be reshaped by the ongoing shift from an extractive, yield-maximizing paradigm to a regenerative, resilience-focused approach that seeks to address the present-day challenges of climate change, soil health degradation, and rising input costs. This trend is reflected in the G20 Agriculture Ministers' Declarations of Brazil (2024)[2] and South Africa (2025)[3] which emphasize increasing food and nutrition security, climate resilience, and empowerment of smallholders. Impacts of climate change, characterized by rising temperatures, erratic precipitation, and extreme weather events, are now recognized as critical stressors affecting agricultural productivity, food prices, and rural livelihoods across tropical regions, particularly in Africa and South Asia, where smallholders dominate production. The situation has been exacerbated by decades of unsustainable soil and water management practices.[4]

> **Agriculture in 2026 is expected to be reshaped by the ongoing shift from an extractive, yield-maximizing paradigm to a regenerative, resilience-focused approach.**

Climate-smart and precision agriculture have emerged as response mechanisms to these stressors and are expected to occupy a more prominent role in 2026. Internet of Things (IoT) sensors, drones, and

1 Kate Whiting, "We're in a 'polycrisis' – a historian explains what that means," World Economic Forum, March 7, 2023, https://www.weforum.org/stories/2023/03/polycrisis-adam-tooze-historian-explains/.

2 G20 Agriculture Ministers. 2024. G20 Agriculture Ministers' Declaration, Chapada dos Guimarães, Brazil, 12–13 September 2024. G20-Brazil Sherpa Track. Available at: https://g7g20-documents.org/database/document/2024-g20-brazil-sherpa-track-agricultural-ministers-ministers-language-g20-agriculture-ministers-declaration

3 G20 Agriculture Ministers. 2025, G20 Agriculture Ministers' Meeting Outcome Document and Chair's Summary, Cape Town, Western Cape Province, South Africa, 18–19 September 2025, G20. Available at: https://g20.org/g20-media/g20-agriculture-ministers-meeting-outcome-document-and-chairs-summary-cape-town-western-cape-province-south-africa/

4 Abdikarim Abdullahi Farah et al., "The Multifaceted Impact of Climate Change on Agricultural Productivity: A Systematic Literature Review of SCOPUS-Indexed Studies (2015–2024)," Discover Sustainability 6 (1), 2025, https://link.springer.com/article/10.1007/s43621-025-01229-2.

> **The overarching megatrend is climate-resilient diversification, moving from crop monocultures towards polycultures of practices, technologies, and diets.**

AI-driven analytics are being deployed to optimize input use and adapt to microclimatic variation.[5] The global precision farming market is projected to exceed USD 21 billion by 2032, signalling the rapid diffusion of digital technologies into agriculture. This technological transformation, however, may widen disparities between capital-intensive and smallholder systems unless accompanied by inclusive access to finance and digital infrastructure.[6]

The rise of regenerative agriculture is associated with practices such as cover cropping, reduced tillage, and carbon-sequestering soil management.[7] Consumer demand for low-carbon food systems, corporate commitments to net-zero supply chains, and policy incentives are driving this shift.[8]

Dietary transitions constitute another prominent dimension. With urbanization and rising incomes, protein-rich and plant-based diets; ranging from lab-grown meat to insect-based proteins, are reshaping markets.[9] These trends, though initially driven by the Global North, are becoming prominent in middle-income economies, contributing to food systems diversification. The overarching megatrend is climate-resilient diversification, moving from crop monocultures towards polycultures of practices, technologies, and diets.[10]

2. EQUITY IN AN EMERGING GLOBAL HEALTH ORDER

In 2025, the WHO Pandemic Agreement (adopted at the 78th World Health Assembly) set out equity, access, and benefit-sharing as structural principles for pandemic preparedness. Though the treaty's annexes on financing and pathogen-sharing remain under negotiation, the evidence indicates that the post-COVID health order is being reframed through a Global South lens, prioritizing sovereignty, fairness, and distributed manufacturing.[11] This background signals four megatrends expected to stand out in health systems in 2026. Taken together, these health megatrends indicate a decisive shift from emergency-driven aid dependency to structural resilience rooted in digital transformation.

The first megatrend will be a marked shift towards regional and domestic Health Sovereignty away from external reliance on aid. A substantial 70 percent decline in Official Development Assistance in health to Africa between 2021 and 2025 has prompted African nations to move towards domestic resource mobiliza-

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5 The World Bank, "Climate-Smart Agriculture," World Bank, February 26, 2024, https://www.worldbank.org/en/topic/climate-smart-agriculture.

6 Mimansha Raj and M. Prahadeeswaran, "Revolutionizing Agriculture: A Review of Smart Farming Technologies for a Sustainable Future," Discov Appl Sci 7, 937, 2025. https://link.springer.com/article/10.1007/s42452-025-07561-6#citeas.

7 Alam Sher et al., "Importance of Regenerative Agriculture: Climate, Soil Health, Biodiversity and Its Socioecological Impact," Discover Sustainability 5 (1), 2024, https://doi.org/10.1007/s43621-024-00662-z.

8 "Regenerative Agriculture: The Path to Sustainable Production - Center for Carbon Research in Tropical Agriculture at the University of São Paulo (CCARBON/USP)," Ccarbon.usp.br, January 15, 2025, https://ccarbon.usp.br/regenerative-agriculture-the-path-to-sustainable-production/.

9 Florence Akinmeye et al., "What Factors Influence Consumer Attitudes towards Alternative Proteins?," Food and Humanity, 3 (100349–49), 2024, https://www.sciencedirect.com/science/article/pii/S2949824424001241?via%3Dihub.

10 Grand View Research, "Plant-Based Meat Market (2024-2030)," Www.grandviewresearch.com, 2023, https://www.grandviewresearch.com/industry-analysis/plant-based-meat-market

11 World Health Organization, "World Health Assembly Adopts Historic Pandemic Agreement to Make the World More Equitable and Safer from Future Pandemics," News release, 20 May 2025, https://www.who.int/news/item/20-05-2025-world-health-assembly-adopts-historic-pandemic-agreement-to-make-the-world-more-equitable-and-safer-from-future-pandemics

tion and self-reliance.[12] This structural shift will define how Global South nations finance public health over the next decade. The G20 South Africa 2025 health track[13] reinforced this narrative, emphasizing equitable access, local production, and regulatory harmonization across developing regions.

> **A substantial 70 per cent decline in Official Development Assistance in health to Africa between 2021 and 2025 has prompted African nations to move towards domestic resource mobilization and self-reliance. This structural shift will define how Global South nations finance public health over the next decade.**

The second megatrend will be the integration of climate and health. With the Belém Health Action Plan (COP30, 2025), health is now formally integrated into the UNFCCC process for the first time.[14] The plan's focus on climate-resilient health systems, community adaptation, and equity-based governance acknowledges that climate is now a public health driver as much as an environmental one. Heatwaves, vector-borne diseases, and food insecurity are interconnected threats that disproportionately affect tropical populations.

The third megatrend will be treating Digital Health as a Global Public Good. In line with the 2023 G20 New Delhi Declaration[15] , the WHO's Global Digital Health Strategy was extended through 2027, alongside the continuation of the Global Initiative on Digital Health.[16] This demonstrates a growing acceptance that digital infrastructure, in the form of interoperable data systems, telemedicine platforms, and AI-based diagnostics, constitutes a new dimension of public health infrastructure.[17] In the Global South, while digital health can help bridge the traditional institutional gaps, its success will depend on equitable digital access and governance frameworks.

The fourth megatrend will be increased global attention on non-communicable diseases and mental health. The 2025 UN High-Level Meeting set historic 2030 targets: 150 million fewer tobacco users, 150 million additional people with controlled hypertension, and 150 million more with access to mental health care.[18] However, the weakening of excise-tax measures and political divisions highlight the challenge of aligning global ambition with domestic policy action.

3. URBANIZATION: THE NEXT FRONTIER OF HUMAN ADAPTATION AND INNOVATION

By 2026, nearly 60 per cent of the world's population

12 Africa Centres for Disease Control and Prevention, "Africa's Health Financing in a New Era," News item, April 3, 2025, https://africacdc.org/news-item/africas-health-financing-in-a-new-era-april-2025/

13 Government of South Africa, Department of Health, "Health Hosts 4th G20 Health Working Group Meeting, 10 to 13 June," Media advisory, June 5, 2025, https://g20.org/g20-media/health-hosts-fourth-g20-health-working-group-meeting/

14 World Health Organization, "Health at COP30," https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/advocacy-partnerships/talks/health-at-cop30

15 G20, "G20 New Delhi Leaders' Declaration," September 9, 2023, https://www.mea.gov.in/Images/CPV/G20-New-Delhi-Leaders-Declaration.pdf

16 World Health Organization, "World Health Assembly Endorses Extension of the Global Digital Health Strategy to 2027," News release, May 23, 2025, https://www.who.int/news/item/23-05-2025-world-health-assembly-endorses-extension-of-the-global-digital-health-strategy-to-2027

17 World Health Organization, "Global Initiative on Digital Health (GIDH): Events," accessed October 2025, https://www.who.int/initiatives/gidh/events

18 World Health Organization, "World Leaders Show Strong Support for Political Declaration on Noncommunicable Diseases and Mental Health," News release, September 26, 2025, https://www.who.int/news/item/26-09-2025-world-leaders-show-strong-support-for-political-declaration-on-noncommunicable-diseases-and-mental-health

will live in cities, driven by urbanization in Africa and Asia. This is a demographic certainty and a sustainability challenge.

> **Cities remain at the forefront of climate impacts. The estimated financing needs for climate-resilient infrastructure substantially exceed existing allocations**

The following megatrends may unfold.

First, cities remain at the forefront of climate impacts. The estimated financing needs for climate-resilient infrastructure substantially exceed existing allocations USD 4.5–5.4 trillion annually compared to current financing levels of USD 831 billion[19]. The deficit disproportionately affects low-income cities, resulting in heightened flood risk, heat exposure, and chronic infrastructure gaps.[20]

Second, technological transformation involving AI-enabled mobility, IoT-based water and waste systems, integrated command centres, among other applications, will continue to spread unevenly. The digital divide will widen between well-resourced metropolitan regions and fiscally stressed emerging cities. In India, tier II and III cities may emerge as real-estate and industrial hubs,[21] but will continue to face limited planning capacity and persistent fiscal fragility.[22]

Third, urban mobility challenges are intensifying globally. Even as countries invest in green transit systems, the growth of private vehicles in emerging economies may offset these gains.[23] In response, transit-oriented development is expected to gain traction as a planning model that integrates housing, commercial, and transit infrastructure within compact, high-density nodes.[24] Simultaneously, cities are adopting circular water systems[25] (e.g., in Urban Local Bodies in Maharashtra, India) and Sponge City models (e.g., Guangzhou in China) to enhance climate resilience.[26]

Fourth, the most intense urban megatrend for 2026 will be the inequality–climate–health nexus. Urban heat island expansion,[27] slum vulnerabilities,[28] and exclusion from adaptive infrastructure are expected to generate new layers of socio-environmental risk. How cities in the Global South address these chal-

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19 United Nations Human Settlements Programme, World Cities Report 2024: Cities and Climate Action, Nairobi, UN-Habitat, 2024, https://unhabitat.org/sites/default/files/2024/11/wcr2024_-_full_report.pdf

20 World Cities Report 2024: Cities and Climate Action

21 Oxford Economics, Global Cities Index 2025, London, Oxford Economics, May 2025, https://www.oxfordeconomics.com/wp-content/uploads/2025/05/OEGCI2025.pdf

22 Nripendra P. Rana, Sunil Luthra, Sachin K. Mangla, Rubina Islam, Sian Roderick, and Yogesh K. Dwivedi, "Barriers to the Development of Smart Cities in Indian Context," Information Systems Frontiers 21, no. 3 (2019): 503–525, https://www.researchgate.net/publication/326706068_Barriers_to_the_Development_of_Smart_Cities_in_Indian_Context

23 Vinod Shah, "Urban Mobility – Challenges and Solutions," Urban Transport News, May 24, 2023, https://www.urbantransportnews.com/article/urban-mobility-challenges-and-solutions

24 CBRE Research, Billions in Transit: Assessing the Impact of Transit Oriented Development on Indian Cities, 2025, https://www.scai.in/wp-content/uploads/2025/09/Transit_Oriented_Development.pdf

25 Promoting circular economy: Maharashtra cabinet approves policy to process & reuse sewage and wastewater for 424 urban local bodies," Times of India, Mumbai, October 7, 2025,https://timesofindia.indiatimes.com/city/mumbai/promoting-circular-economy-maharashtra-cabinet-approves-policy-to-process-reuse-sewage-and-wastewater-for-424-urban-local-bodies/articleshow/124367357.cms

26 Stefan Rau, Sponge Cities: Integrating Green and Gray Infrastructure to Build Climate Change Resilience in the People's Republic of China, ADB Briefs No. 222, Asian Development Bank, November 2022, https://www.adb.org/sites/default/files/publication/838386/adb-brief-222-sponge-cities-prc.pdf

27 Yuan Yuan et al., "Surface urban heat island effects intensify more rapidly in lower income countries," npj Urban Sustainability 5, Article 11 (2025), https://www.nature.com/articles/s42949-025-00198-9

28 Camila Tavares P et.al, "A global (South) collective burden: A systematic review of the current state of climate-related hazards in informal settlements", International Journal of Disaster Risk Reduction, Volume 114 (2024), https://www.sciencedirect.com/science/article/pii/S2212420924007027.

lenges will depend on how they reimagine infrastructure, finance, and inclusion under climatic and demographic pressure.

> **The most intense urban megatrend for 2026 will be the inequality–climate–health nexus.**

OUTLOOK 2026: TOWARD AN EQUITABLE TRANSITION

The discussions above indicate that 2026 is expected to see the co-evolution of the three intricately linked systems, with increasing convergence of resilience, distributive justice, and innovation shaping the contours of the development trajectory of the Global South. The first transformative pattern is resilient regeneration, involving efforts to restore ecosystems, communities, and institutional trust, marking a paradigm shift from traditional extractive practices. The second transformation is characterized by a more assertive Global South, becoming increasingly visible in the global economic order through regional manufacturing, domestic financing, and south-south cooperation in health, food, and urban innovation. The third transformation is the recognition of technology as a global public good in all three interconnected domains, requiring new governance architectures that prioritize inclusion and human dignity.

CONCLUSION: SYSTEMS THINKING FOR COMPLEX FUTURES

The interconnected and uncertain trajectories of agriculture, health, and urbanization converge into complex challenges. Understanding them requires a systems-thinking approach, one that acknowledges feedback loops, cascading risks, and the interdependence of human, ecological, and economic systems.

Seen through this lens, the megatrends shaping the upcoming years are not linear predictions but unfolding networked transitions. In this intricate loop, climate change functions as the meta-driver, digital transformation serves as both catalyst and challenge, while finance and equity run across all these domains. Finally, demographic shifts and consumption patterns sustain the cycle. All these highlight the Global South's structural dilemma—mobilizing resources without entrenching dependency or asymmetry.

Going forward, stronger Global South cooperation, driven by the post-COP30 momentum and India's BRICS presidency in 2026, may enable the pooling of knowledge, finance, and technology to jointly advance resilient agriculture, equitable health systems, and sustainable urbanization, reshaping shared development pathways in 2026.

Education, Skills, Labor, and Immigration

TURNING RISKS INTO OPPORTUNITIES

Sunaina Kumar
with Soumya Bhowmick, Anasua Basu Ray Chaudhury, Arpan Tulsyan, and Manish Vaidya

Education, skills, labor, and immigration have historically functioned as critical drivers of economic growth, productivity, social development, and innovation. These domains are closely interlinked and their evolution and prospects should therefore be assessed in relation to one another.

Looking ahead to 2026, geopolitical fragmentation, economic uncertainty, climate crisis, and technological disruption, which have generated global instability, are expected to have long-term consequences for the future of these critical domains. Escalating crises and tectonic shifts threaten progress in human capital development worldwide. Advancements in technology, the advent of artificial intelligence (AI), the climate crisis, and the energy transition are reshaping labor markets, creating both redundancies and opportunities. Meanwhile, the rise of anti-immigration populism, stricter compliance frameworks, alongside a growing demand for highly-skilled migrants is collectively transforming international mobility patterns.

“Advancements in technology, the advent of artificial intelligence (AI), the climate crisis, and the energy transition are reshaping labor markets, creating both redundancies and opportunities. Meanwhile, the rise of anti-immigration populism, stricter compliance frameworks, alongside a growing demand for highly-skilled migrants is collectively transforming international mobility patterns.

The stakes are higher for the Global South, with its large youth populations and significant gaps in education, skills, and employment. Data from the World Economic Forum (2025) shows that rates of youth not in employment, education, or training (NEET) range between 25 to 27 per cent in low and middle-income economies compared to 10 to 17 per cent in high and upper-middle-income economies.[1] Countries of the Global South are source economies for outward migration and depend on labor mobility for remittances, skills flows, household welfare, and public finances.[2]

In the midst of rising uncertainty, Global South countries are pursuing their own pathways, seeking to transform risks into opportunities. For example, in education, countries are rapidly embracing AI to leapfrog traditional barriers in access, quality, and personalization.[3] Similarly, they are investing in green skills; from solar panel installation to conservation management, so that workforces can seize new opportunities in the green transition.[4] Countries such as India, Vietnam, and Bangladesh have begun converting demographic po-

1 World Economic Forum. 2025. The Future of Jobs Report 2025. Geneva: World Economic Forum. https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

2 Ratha, Dilip, Sonia Plaza, and Eung Ju Kim. 2024. “In 2024, Remittance Flows to Low- and Middle-Income Countries Are Expected to Reach $685 Billion, Larger than FDI and ODA Combined.” Blog, December 18, 2024. World Bank. https://blogs.worldbank.org/en/peoplemove/in-2024--remittance-flows-to-low--and-middle-income-countries-ar

3 Tulsyan, Arpan. 2025. “How AI Can Deliver Quality Learning at Scale.” ORF Expert Speak, September 23, 2025. https://www.orfonline.org/expert-speak/how-ai-can-deliver-quality-learning-at-scale

4 Boston Consulting Group. 2024. Powering Futures: The Green Skilling Opportunity. Boston Consulting Group. https://web-assets.bcg.com/b9/d3/32793bb54b1fba468efdcdea040a/powering-futures-the-green-skilling-opportunity-1.pdf

tential into productivity gains through export diversification and industrial upgrading.[5,6,7] They are harnessing multilateral forums to voice their concerns, like the G20 Labour and Employment Minster' Declaration 2025, under the South African presidency, which calls for stronger labor mobility partnerships between surplus and ageing economies to address demographic asymmetries.[8]

> **The Global South is turning to newer models of South–South collaboration and regional partnerships, which are increasingly recognized as strategic mechanisms to jointly address challenges.**

Faced with greater challenges, the Global South is turning to newer models of South–South collaboration and regional partnerships, which are increasingly recognized as strategic mechanisms to jointly address challenges. These models tend to be financially prudent, contextually relevant and culturally adapted, and crucially, they help diversify options rather than relying predominantly on Western approaches.

1. DIGITAL TECHNOLOGY AND AI WILL EXPAND ACCESS TO EDUCATION

By 2033, the Global South is projected to account for 1.2 billion youths aged 15–24, yet only 480 million are projected to be enrolled in school, and about 420 million to secure employment, leaving nearly 300 million young people facing severely constrained opportunities.[9] Equipping them with quality education and relevant skills is crucial. Driven by the rapid expansion of internet access and smartphones, the rise of digital public infrastructure, and post-pandemic shifts in learning, countries across the Global South are utilizing technology to address education gaps.

Reports released in 2025 by UNESCO and Microsoft highlight sub-Saharan Africa, Latin America, and South Asia as key regions where AI-driven learning platforms are being expanded to address fundamental gaps in teacher capacity, instructional materials, and student engagement.[10,11] Joint declarations by forums such as BRICS and ASEAN identify teacher training and ethical use of AI as strategic goals.[12,13] Given the persistent digital divides across regions, ensuring that digital and AI solutions in education systems remain locally adapted and community-rooted will be crucial.

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5 World Bank. 2024. India Development Update: India's Trade Opportunities in a Changing Global Context. Washington, D.C.: World Bank. https://documents1.worldbank.org/curated/en/099513209032434771/pdf/IDU-13d06cd8-0fec-465e-a7e3-8a711ea131b8.pdf

6 Chaponnière, Jean-Raphaël, and Jean-Pierre Cling. 2009. "Vietnam's Export-Led Growth Model and Competition with China." Économie internationale 118 (2009): 101–130. https://www.cepii.fr/ie/rev118/chaponnierecling.pdf

7 World Bank. 2017. "Creating Jobs and Diversifying Exports in Bangladesh." World Bank Features, November 14, 2017. https://www.worldbank.org/en/news/feature/2017/11/14/creating-jobs-and-diversifying-exports-in-bangladesh

8 G20. 2025. G20 2025 Labour and Employment Ministerial Declaration. August 2025. https://g20.org/wp-content/uploads/2025/08/G20-2025-Labour-and-Employment-Ministerial-Declaration.pdf

9 World Bank. 2025. Making Labor Markets Work for the Youth: Supporting Effective Youths' Transitions into the Labor Market. Washington, D.C.: World Bank. https://documents1.worldbank.org/curated/en/099021125105022888/pdf/P506693-8b3df9d1-41d8-473e-945c-7d8119cbf29b.pdf

10 UNESCO. 2025. "Digital Learning Week." UNESCO. https://www.unesco.org/en/weeks/digital-learning

11 Microsoft. 2025. 2025 AI in Education: A Microsoft Special Report. Microsoft. https://cdn-dynmedia-1.microsoft.com/is/content/microsoftcorp/microsoft/bade/documents/products-and-services/en-us/education/2025-Microsoft-AI-in-Education-Report.pdf

12 BRICS. 2025. "BRICS Sign Joint Declaration on Artificial Intelligence in Education, Formalize Technical and Vocational Cooperation Alliance." June 10, 2025. https://brics.br/en/news/brics-sign-joint-declaration-on-artificial-intelligence-in-education-formalize-technical-and-vocational-cooperation-alliance

13 EUinASEAN. 2025. "Empowering ASEAN's Future Through Inclusive Higher Education." EUinASEAN, accessed December 3, 2025. https://euinasean.eu/empowering-aseans-future-through-inclusive-higher-education/

2. INDUSTRY 4.0 AND ADVANCED TECHNICAL SKILLS WILL DRIVE THE SKILLING AGENDA

The sharpest divide in labor markets of the future is likely to emerge between workers who can operate in Industry 4.0 environments such as AI, data, advanced manufacturing, and cyber-physical systems, and workers who lack these capabilities. The Future of Jobs Report 2025 projects a net increase of around 170 million jobs this decade, but with over one-fifth of current roles subject to disruption, and the fastest growth in technology and AI-intensive occupations.[14] The United Nations Industrial Development Organization (UNIDO) notes that high-wage manufacturing and services jobs are expected to increasingly require advanced digital and STEM capabilities, with skills bottlenecks likely to be more pronounced in developing countries.[15]

> **"The sharpest divide in labor markets of the future is likely to emerge between workers who can operate in Industry 4.0 environments such as AI, data, advanced manufacturing, and cyber-physical systems, and workers who lack these capabilities.**

In response, the Global South is increasingly utilizing Global Capability Centres (GCCs) and similar hubs to build Industry 4.0 talent pools. India currently hosts more than half of the world's GCC, driven by cost advantages and a strong talent base. In 2025, the World Bank's analysis on AI readiness underscores how advanced digital skills are becoming concentrated in a few emerging hubs.[16] Echoing this, the 2024 ASEAN–India Joint Statement on Advancing Digital Transformation recognises "the significant role of digital public infrastructure (DPI) in catalysing digital transformation and promoting inclusivity, efficiency, and innovation in public service delivery."[17] Similarly, the African Union's Digital Transformation Strategy for Africa (2020–2030) identifies digital skills and human capacity as one of its core pillars.[18]

> **"The Global South is increasingly utilizing Global Capability Centres (GCCs) and similar hubs to build Industry 4.0 talent pools.**

3. PLATFORM WORK WILL POWER LABOR MARKETS BUT WILL NEED RESPONSIVE REGULATION

A majority of young workers in the Global South remain employed in informal, insecure jobs. These concerns are reflected in the UN Population Fund's

14 World Economic Forum. 2025. "The Jobs of the Future — and the Skills You Need to Get Them." World Economic Forum Stories, January 8, 2025. https://www.weforum.org/stories/2025/01/future-of-jobs-report-2025-jobs-of-the-future-and-the-skills-you-need-to-get-them/

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18 World Bank. 2025. Digital Progress and Trends Report 2025: Strengthening AI Foundations. Washington, D.C.: World Bank. https://www.worldbank.org/en/publication/dptr2025-ai-foundations

> **Platform work and the digital economy function as critical drivers of employment and income growth across the Global South, a trend expected to intensify in 2026.**

2025 Demographic Outlook and the African Union's Labour Migration Strategy (2024–2030), which highlight youth employment and mobility governance.[19,20] Platform work and the digital economy function as critical drivers of employment and income growth across the Global South, a trend expected to intensify in 2026. India currently has 7.7–8 million gig workers, projected to reach 23–24 million by 2030.[21] In Southeast Asia, digital labor platforms have expanded rapidly, boosting household consumption.[22]

Global frameworks such as the ILO–OECD Global Policy Framework on Decent Work in the Digital Economy (2025)[23] and the BRICS Declaration on Platform Labour (2024)[24] underscore fair wages, portable social protection, algorithmic transparency, and collective bargaining as essential safeguards. India has introduced new labor codes that provide legal regulation and social security to platform workers.

4. SOUTH-SOUTH MIGRATION WILL CONTINUE TO EXPAND, DRIVEN BY PRESSURES OF CLIMATE AND CONFLICT

Countries in the Global South account for at least 40 percent of all international migrants.[25] However, migration analysis remains constrained by the scarcity of quality data. Persistent conflict, climate stress, and economic fragility remain key drivers pushing people to migrate or seek refuge across borders.[26] Intra-regional South-South migration has surpassed North-bound flows, especially in Africa, with 15 mil-

> **Intra-regional South-South migration has surpassed North-bound flows, especially in Africa, with 15 million Africans residing in other African countries.**

19 United Nations Population Fund (UNFPA). 2025. The Real Fertility Crisis: The Pursuit of Reproductive Agency in a Changing World — 2025 State of World Population (SWP) Report. New York: UNFPA. https://www.unfpa.org/swp2025

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lion Africans residing in other African countries.[27] Frameworks like the ECOWAS (Economic Community of West African States) play an important role in continental mobility by enabling free movement protocols.[28] The ASEAN, through declarations and programs promotes safe labor migration.[29,30]

Like the North, countries of the Global South have tightened border controls and compliance rules, while promoting localization policies. Climate change represents another significant driver of migration and is expected to displace nearly 143 million people in the region by 2050.[31] Regional initiatives like the ASEAN Declaration on the Protection of Migrant Workers, Abu Dhabi Dialogue, and Colombo Process promote cooperation on migration, though they remain largely consultative and weakly enforced.[32,33,34]

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CONCLUSION

Looking ahead to 2026, several trends are becoming more evident. In education, digital technology and AI are expected to widen access and personalize learning. In skilling, the advance of Industry 4.0 is expected to increase demand for advanced technical capabilities. In labor markets, platform work is projected to expand further, creating new jobs while underscoring the need for stronger protections for workers. In immigration, South–South mobility is expected to rise further as climate stresses, economic fragility, and conflict intensify. These trends carry both opportunity and risk. By reorienting national priorities to these shifts and aligning these priorities with deeper regional cooperation, the Global South may build shared frameworks that reflect its diverse realities and aspirations.

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