POLICY SOLUTION

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PATH DIVERSITY AND CO-CREATION: A G5 EPISTEMIC CAUCUS FOR CONNECTED TRANSITIONS



Hidetoshi Nishimura, Musashino Institute for Global Affairs (MIGA), Musashino University
Fusanori Iwasaki, Musachino University

ADVISORY COUNCIL

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Hidetoshi Nishimura, *Director and Specially Appointed Professor, Musashino Institute for Global Affairs (MIGA), Musashino University*

Fusanori Iwasaki, *Visiting Professor, Musashino University / Principal Project Researcher, MIGA*

1. Diagnosis of the Global Policy Challenge

1.1 Interdependence Across Policy Domains

In today's globalized economy, policy domains that were once treated separately have become mutually dependent. For example, the diffusion of artificial intelligence (AI) requires electricity to power computing infrastructure, mineral resources to manufacture equipment, and the investment and human capital to sustain both. The energy transition cannot be achieved simply by replacing one technology with another. In particular, battery storage depends on a stable supply of minerals and the industrial capacity, infrastructure, and finance needed to turn those minerals into products. Likewise, critical minerals policy does not end at extraction. It spans the entire value chain, from processing and adding value to incorporating minerals into products and recovering them as secondary resources at the end of their lifecycle. Across all these domains, financing is necessary to make projects a reality.

Therefore, the question today is not only how to govern each domain individually, but also how to manage the linkages among them. In our view, contemporary industrial policy must address how to best realize combinations of these linkages across national borders. This brief focuses on four representative domains: AI, energy, critical minerals, and finance.

1.2 Two Risks

The first risk is "institutional fragmentation." Policies optimized within a single domain can shift burdens onto other domains and create new constraints. One example is the collision between the rapid expansion of AI infrastructure and the limits of electricity supply. Likewise, if mineral policy focuses solely on securing supply, resource-rich countries retain little industrial value.

The second risk is "inappropriate convergence." Beyond the traditional divide between advanced and developing economies, the countries now referred to as the Global South differ greatly from one another in their resource endowments, industrial structures, and stages of development. Pursuing the same goal does not mean following the same path.

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1.3 The Principle: Path Diversity

To address the second risk, this brief draws on the principle of Path Diversity (MIGA, 2024). Path Diversity rests on three ideas. First, countries can share common goals. Second, how each country approaches those goals—which technologies it uses, how it sequences its policies, and which institutions and financing it relies on—may legitimately differ. Third, those differences need not be an obstacle to cooperation; they can be a source of complementarity.

The principle rejects two positions at once. One is uniformity, which imposes a single transition model on all countries. The other is relativism, which holds that cooperation is impossible because every country is different.

Herein lies an opportunity for industrial policy: to build mechanisms that turn countries' differing capabilities into common knowledge, and then into concrete cooperation and investment. The question is whether we can create a light-touch mechanism for intellectual collaboration that connects different domains and national pathways without imposing a single development model.

2. Assessment of Status Quo Institutional Responses

Existing international institutions have already done a great deal to address these challenges. For instance, the G20, which comprises advanced and major emerging economies, has held extensive discussions and made numerous recommendations on the four domains and related issues.

Of particular importance is the experience from 2022 to 2025, when four Global South countries—Indonesia, India, Brazil, and South Africa—successively held the G20 presidency. Each of these countries, operating under different development conditions, built policy experience in relevant domains during its presidency.

Under South Africa's 2025 presidency, for instance, critical minerals were discussed not only in terms of extraction and supply security but also in terms of processing, value addition, and industrialization in producing countries. The G20 Critical Minerals Framework, adopted during South Africa's presidency, addresses the entire critical minerals value chain through six pillars. One pillar promotes sustainable processing, infrastructure development, and economic diversification in producing countries and establishes processing hubs that support domestic processing and regional value chain integration (G20, 2025).

In light of these achievements, the remaining challenge becomes clearer. The problem is not a lack of international initiatives within each domain. Rather, the institutional fragmentation described in Section 1 manifests itself in the international architecture as two gaps.

The first is a horizontal gap. Domain-specific expertise is dispersed across different international organizations, ministries, working groups, and expert communities. As a result, mechanisms that systematically examine cross-domain effects and that translate cross-domain insights into demonstration projects and investment remain underdeveloped.

The second is a temporal gap. The G20 presidency rotates every year. The troika of the previous, current, and incoming presidencies is intended to help ensure continuity (Council on Foreign Relations, 2025), yet insights and policy ideas generated under one presidency tend to lose momentum at each handover, even when the underlying challenges persist.

For the G20, this makes it especially important to consider how to carry forward the insights of the four consecutive Global South presidencies that have just concluded. Under the 2026 U.S. presidency, a consortium of U.S. think tanks is running an informal T20 process (Brookings Institution, 2026) with the theme “Harnessing Knowledge and Ensuring Continuity for Better Policymaking in Uncertain Times” (Global Governance Innovation Network, 2026).

3. Policy Solution: Global Five Epistemic Caucus (G5EC)

Based on this assessment, this brief proposes establishing a Global Five Epistemic Caucus (G5EC), comprising the following five countries: Indonesia, India, Brazil, South Africa, and Japan. The G5EC is designed to address the two gaps identified in Section 2. It would serve as a forum that connects knowledge across domains and carries that knowledge forward as presidencies change.

The G5EC is a knowledge-sharing platform that links the Global South and Japan. Many of the social and economic challenges facing the Global South cannot be solved within a single country. Through the G5EC, academic institutions and leading think tanks in participating countries will collaborate and exchange knowledge and experience, connecting them to actual policymaking. The G5EC aims to help the Global South play a significant role in international rule-making and in promoting business partnerships, including among start-ups. It also aims to enable countries to share and refine their national growth strategies.

The rationale for selecting these five countries lies in their differences. Although Indonesia, India, Brazil, and South Africa have all held the G20 presidency, they differ greatly in terms of resources, energy circumstances, industrial capacity, market size, and development pathways. Japan can offer complementary experience in manufacturing, technology, infrastructure, resource efficiency, and finance.

The G5EC’s guiding philosophy is “Path Diversity and No One Left Behind,” combining the Path Diversity principle outlined in Section 1 with the commitment to leave no one behind (United Nations General Assembly, 2015).

However, a principle alone does not generate cooperation. Path Diversity recognizes different national pathways and aims to make them complementary. Yet, it lacks a venue in which to

be tested. Conversely, a collaborative venue without guiding principles will do no more than set national differences side by side. The G5EC brings the two together. Path Diversity guides the G5EC's deliberations, and G5EC practice tests and refines Path Diversity. This brief refers to this process as "co-creation," in which principle and practice reinforce each other as participating countries jointly generate knowledge and solutions.

The G5EC offers a platform whose deliberations begin not within individual domains, but rather at their intersection.

Consider the expansion of AI as an example. As AI computing infrastructure grows, it demands vast amounts of electricity. How and where that electricity is generated is a question of the energy transition. Power generation, energy storage, and semiconductors all depend on mineral resources. Where those minerals are mined and processed determines how much value remains in resource-rich countries. The stages of this chain that attract investment shape what each country gains. Decisions in one domain set the conditions for the next. The linkages also run in the opposite direction: advanced digital technologies can be used to make energy and resource use more efficient.

The five countries do not occupy the same positions within this chain. Due to differences in resources, energy circumstances, industrial capacity, and market size, each country has strengths at different stages. From the perspective of Path Diversity, the question is not which model is superior. Rather, the question is where along this chain countries' respective strengths can be connected in pursuit of a shared goal: securing stable and affordable energy, decarbonizing, fostering industry and employment, and retaining more value in resource-rich countries.

One possible answer is an architecture that distributes computing resources, energy sources, research hubs, and industrial bases according to regional conditions rather than concentrating them in a single location. The G5EC could examine such an architecture as a subject of joint experimentation tailored to each country's circumstances. The results would provide evidence of whether Path Diversity works in practice.

4. Conclusion

The domains examined in this brief—AI, energy, critical minerals, and finance—can no longer be addressed in isolation. Domain-specific policies shift burdens onto one another, while policies that require every country to follow the same path forfeit the opportunity to build on national differences.

This brief proposes combining Path Diversity, which recognizes that countries can achieve common goals through different approaches, with the G5EC, a knowledge-sharing platform connecting the Global South and Japan. A principle can only be put into practice when it has a venue, and a venue can only turn differences into cooperation when it has a principle. The G5EC will connect knowledge across domains and carry the experience of the last four Global South G20 presidencies into the next policy cycle. In an era of interconnected

domains, international cooperation requires turning national differences into complementarities without imposing a single model.

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