Crafting Bespoke National Energy Transition Plans to Achieve Inclusive and Low-Carbon Development: G20 Needs a Big Data Drive

Shuva Raha, Fellow and Lead – International Cooperation, Council on Energy, Environment and Water (India)

Introduction and Policy Recommendation Overview

Brasil's Think20 Communiqué (T20 Brasil 2024) recommends that the G20 "provide **capacity building**, **technology transfer** and **adequate funding for national transition plans**, including measures to leverage climate adaptation and bioeconomy" (recommendation 4). It calls for "reskilling of workers for a low-carbon economy" and investing in "adaptive social protection" against environmental and climate risks, especially in developing economies, by **strengthening country platforms** and **consolidating sustainable projects**.

We must unpack, reflect upon, and plan from the directions of the recommendation to progress from good intentions to action at scale. This commentary will delve into one key area: **the need for timely, relevant, and credible data to inform decision-making, and in turn, enable meaningful actions** by **aggregating demand**, **pooling resources**, and **reducing risks**.

Recommendation 4 converges the outcomes of T20 Brasil Task Force 1 (TF01) on fighting inequalities, poverty, and hunger to accelerate progress toward multiple SDGs; Task Force 2 (TF02) on sustainable climate action and inclusive just energy transitions, and Task Force 5 (TF05) on inclusive digital transformation.

This convergence is key to aligning national transition targets and climate actions with the Sustainable Development Goals (SDGs), and then using affordable and modern public technologies to create awareness, impart skills, deliver resources, and measure results.

TF01 recommends stronger multilateral cooperation via the Global Alliance against Hunger and Poverty; a global data initiative to qualify and quantify systemic inequalities, including gender, race, and ethnic discriminations; addressing unequal access to

healthcare and food security; and improving social protection systems via progressive fiscal policies.

TF02 recommends institutional capacity building, technology transfer, and adequate funding, especially via Multilateral Development Banks (MDBs) and Multilateral Climate Funds, for just transition plans. It recommends integrating "indigenous peoples' and traditional communities' knowledge, participatory governance, and equitable benefit-sharing" in G20 instruments like the High-Level Principles on Bioeconomy, and Lifestyles for Sustainable Development. It promotes climate justice via fairer international taxation, repurposed subsidies, and inclusion of social and biodiversity objectives in taxonomies and metrics.

TF05 recommends investing in telecom infrastructure, energy supply, and research, alongside digital literacy initiatives and targeted subsidising of broadband and devices for low-income and remote populations. It recommends multistakeholder entities for data governance among G20 countries; a common non-binding set of principles for Digital Public Infrastructure (DPI) to ensure information integrity, data justice, interoperability, and openness; and a global AI accountability framework, especially for poverty, health, and climate related applications.

Recommendation 4 builds upon the G20 New Delhi Leaders' Declaration (G20 India 2023), which proposed a Green Development Pact with issues ranging from macroeconomic risks of climate change and transition pathways, to mainstreaming infotech tools for service delivery.

Notably, G20 India welcomed the African Union into the G20, and set up the Disaster Risk Reduction Working Group to improve the resilience of countries, in particular developing economies, LDCs and SIDS.

The G20 Bali Leaders' Declaration (G20 Indonesia 2022), held after the COVID-19 pandemic, commits to "public investments and structural reforms" to strengthen "multilateral trade and resilience of global supply chains to support long-term growth" and calls for access to affordable and modern energy and public technologies. It recognises the roles of nature-based solutions and ecosystem-based approaches, and responsible consumption and production, in climate mitigation and adaptation.

T20 Brasil's Recommendation 4 thus reflects the intention of the G20 troika of Indonesia, India, and Brasil, three influential economies, to move towards more informed discussions and actions on inclusive and low-carbon development. This continuity is important as the Presidency moves to South Africa in 2025.

Implementation pathways: Avenues and roadblocks

The Paris Agreement urges countries to create **long-term strategies (LTS)** to guide their transitions and climate action based on Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC) (UNFCCC n.d.). This is important, as G20 members differ vastly in population sizes, levels of economic development, per capita income and emissions, etc. As of October 2024, 74 Parties have submitted their LTS.

An August 2023 report by India's Council on Energy, Environment and Water (CEEW) and Germany's NewClimate Institute of the LTS of 17[1] G20 members (as of July 2023) noted **capacity building, technology, and finance as key enablers** (CEEW, NewClimate 2023).

While this resonates with T20 Brasil's Recommendation 4, and 16 of the 17 LTS include net-zero/similar ambitions, the study also revealed data and targeting gaps, such as:

- Only 11 LTS state the need for capacity building; most lack details of capacity needs

- R&D in key technologies is a priority for 15 LTS

- While all 17 LTS include energy efficiency and bioenergy and 16 LTS cover renewables, only some have specific targets

- Only 9 LTS mention phasing out fossil fuel subsidies; none specify the fuels or timelines

---

[1] Brazil, Saudi Arabia, and Türkiye have not yet submitted their LTS (UNFCCC n.d.).

- Only 6 LTS quantify estimates of climate finance needed for transition; most lack clarity on how to mobilise it

- Only 8 LTS mention adaptation finance; none quantify targets

- Only 5 LTS mention that G20 member's existing commitments or intention to provide international climate finance

- Most members have significant variances between own commitments like their LTS, Nationally Determined Contributions (NDCs), and national targets

Going beyond the G20, CEEW's analysis of the nebulous "developing countries" using UNCTAD's indicators like population, GDP, Foreign Direct Investment, Current Account Balance, Consumer Price Index, trade in merchandise and services, and maritime transport (UNCTAD 2023), underscores the dissimilarities in their geographies, resources, political constructs, industrialisation, human development, and trade and multilateral strategies.

Further, correlating macroeconomic data with sector-specific data, such as from **agriculture**, **industries**, **power**, **transport**, and **built infrastructure**, adds to the diversity of transition pathways, even for neighbouring countries.

For instance, layering UNCTAD's indicators with energy-related ones, **country size and natural capital** like land, fuels, and minerals determine economic activities and energy trends; **economic capacity** such as average income and purchase of foreign goods (prosperity) influences primary energy consumption and multi-dimensional development; economic share of **manufacturing value added** impacts production-linked energy use and emissions; and **global integration** through trade and investment in business, infrastructure, and other assets, impacts economic stability and growth.

Another issue is **technology transfer, co-development, and IP sharing of sustainable energy and innovative technologies**. G20 members own ~91 per cent of environmental technology (solar, wind, hydro, geothermal, fuel-cell, and waste management) patents granted under the Patent Cooperation Treaty between 2000 and 2021. However, ~85 per cent of these are held by China, Japan, USA, the Republic of Korea, and Germany, and thus far, little has come of the G20's efforts (Gupta 2023).

Moreover, legitimising indigenous knowledge capital through structured **data collection, documentation, and registration of indigenous peoples' and traditional communities' knowledge, practices, and innovations**, much of which has been inherited over centuries and does not have modern IP rights, will accelerate national transition plans through locally relevant and culturally accepted solutions.

Data granularity should be enhanced through **high resolution climate risks mapping**. For example, CEEW's Climate Risk Atlas for India maps droughts, floods, and cyclones at a 25 sq-km radius, using multi-agency data collected over 50 years (Mohanty 2021). Zooming in to sub-districts helps focus investments to build resilient infrastructure, target early warning and disaster management systems, and customise skilling of officials and communities.

Development and climate finance flows, especially to EMDEs, hinges heavily on credit ratings. The UN DESA identifies "potential bias in ratings against EMDEs, pro-cyclicality[2] of ratings, governance issues and conflicts of interest, and incorporation of

---

[2] Credit rating agencies might become more conservative during crises to protect their own reputation; e.g., CRAs, after failing to predict the 1997 East Asian crisis, aggravated

climate risks" as challenges to EMDEs earning favourable credit ratings (Griffith-Jones 2021). UN DESA's recommendations include separating quantitative and judgement-based evaluations, and establishing public credit rating agencies. Such improvements, in turn, hinge upon the type, amount, and quality of data furnished by the EMDEs.

Each indicator or data point is individually important, but becomes critical when interlinked with others as part of complex challenges.

---

it by downgrading the impacted countries' ratings more than needed, which then increased their costs of borrowing (Ferri, Lui and Stiglitz, 1999).

Conclusion: Building the G20 data drive

Research data and the global clamour about the lack of meaningful progress on the SDGs, energy transition, and climate action, lead to three key learnings:

One, solving global challenges first warrants the acknowledgement that one size does not fit all. We must return to the basics of how countries behave independently as well as in regional or strategic groupings.

Two, collecting, analysing, and using timely, relevant, and credible data is the basis for countries designing and implementing national transition pathways that are customised to their unique circumstances, imperatives, ambitions, capabilities, and responsibilities.

Three, digitalisation and AI-based tools are needed to make processing and disseminating big data cheap and efficient.

The G20, without a permanent Secretariat, has struggled to maintain a structured inventory of data, documents, decisions, and actions across presidencies. However, efforts to overcome this challenge are yielding results.

An example is the Global Infrastructure Hub (GI Hub). Set up in 2014 by the G20 to "accelerate knowledge sharing and spur partnerships between governments, the private sector, development banks… to implement the G20's infrastructure agenda," the Hub is today a "central source of data and practical guidance." In 2024, it became a part of the World Bank's Infrastructure Practice Group, with funding from Saudi Arabia (GI Hub 2024), thus gaining global credibility and financial stability to build capacity to research and convene.

GI Hub's model should inspire similar multi-stakeholder G20 initiatives. These

include 2017 Germany's G20 Resource Efficiency Dialogue (RED) (MoFA Japan 2017), set up to "exchange knowledge… to improve resource efficiency along the entire life-cycle of natural resources, products and infrastructure;" 2022 Indonesia's G20 Research Forum (ERIA 2022), intended to "undertake studies, organise brainstorming sessions, collaborate with governments and chairs of G20;" and 2024 Brasil's Task Force for Global Mobilization against Climate Change (G20 Brasil 2024), which aims to "promote a high-level dialogue among governments, financial institutions, and international organizations to enhance global macroeconomic and financial alignment."

The 2022-2025 G20 Presidencies of Indonesia, India, Brasil, and South Africa offer a golden opportunity to change the status quo on sustainable development and climate action, especially via South-South cooperation. The inclusion of the AU in the G20 opens new vistas.

Proactive and determined cooperation between these Presidencies have showcased their unique challenges and problem-solving capabilities, improved knowledge and expertise sharing, and promoted the inclusion of indigenous and marginalised communities.

T20 Brasil's commitment to translate recommendations into implementation augurs well for the Think20 process. Targeted institutional collaboration to improve data for development would unlock new ideas and avenues to accelerate national energy transitions. It is, indeed, time to rethink our world.

References

CEEW, NewClimate. 2023. *Assessment of the G20 Members' Long-Term Strategies: Commonalities, Gaps and Areas for Cooperation.* Cologne, Berlin: NewClimate Institute. doi:https://www.ceew.in/publications/assessment-of-g20-members-long-term-strategies.

ERIA. 2022. "T20 Indonesia Summit 2022: Special Session - Launch of 'G20 Research Forum': Towards Multi-Dimensional Perspectives on G20 Development Agenda." https://www.eria.org/news-and-views/t20-indonesia-summit-2022-special-session---launch-of-g20-research-forum-towards-multi-dimensional-perspectives-on-g20-development-agenda/.

G20 Brasil. 2024. "Task Force for the Global Mobilization against Climate Change." https://www.g20.org/en/tracks/sherpa-track/climate-change.

G20 India. 2023. "G20 New Delhi Leaders' Declaration." *MEA India.* https://www.mea.gov.in/Images/CPV/G20-New-Delhi-Leaders-Declaration.pdf.

G20 Indonesia. 2022. "G20 Bali Leaders' Declaration." *G20 India.* https://www.g20.in/en/docs/2022/G20%20Bali%20Leaders%27%20Declaration,%2015-16%20November%202022.pdf.

GI Hub. 2024. "The Global Infrastructure Hub (GI Hub) to join the World Bank." *https://www.gihub.org/.* https://www.gihub.org/news/the-global-infrastructure-hub-gi-hub-to-join-the-world-bank/.

Griffith-Jones, Stephany and Moritz Kraemer. 2021. *Credit rating agencies and developing economies.* UN DESA. https://www.un.org/en/file/147841/download?token=bejCgRC4.

Gupta, Tulika, Shuva Raha, and Hemant Mallya. 2023. *T20 Policy Brief: The G20 Imperative for Global IP Reform To Facilitate Clean Energy Transitions.* G20 India Presidency: T20. https://www.ceew.in/publications/g20-imperative-for-clean-energy-intellectual-property-rights-and-tech-reforms.

MoFA Japan. 2017. "G20 Resource Efficiency Dialogue." https://www.mofa.go.jp/files/000272297.pdf.

Mohanty, Abinash and Shreya Wadhawan. 2021. *Mapping India's Climate Vulnerability: A District-Level Assessment.* New Delhi: Council on Energy, Environment and Water. https://www.ceew.in/publications/mapping-climate-change-vulnerability-index-of-india-a-district-level-assessment.

T20 Brasil. 2024. "T20 Brasil 2024 Communiqué." *https://t20brasil.org/.* https://t20brasil.org/en/communique.

UNCTAD. 2023. *UNCTAD Handbook of Statistics 2023.* United Nstions. https://unctad.org/system/files/official-document/tdstat48_en.pdf.

UNFCCC. n.d. *Long-term strategies portal.* https://unfccc.int/process/the-paris-agreement/long-term-strategies.