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Investment Barriers to Sustainable Finance: How to Enable the Transition in G20 Economies

Théo Aphecette

Abstract

The transition to a low-carbon economy requires significant investments in green technologies and infrastructure. Despite growing demand for sustainable finance, investment barriers persist, hindering the flow of capital towards environmentally sustainable projects. Building on a literature review, and analysis of existing work in G20 countries, this brief identifies three key investment barriers: legislative, skills-related, and operational. The brief highlights for each barrier possible solutions to lift or at least reduce them and identify possible room for international cooperation. We identify where such solutions are being discussed in the framework of the G20 such as the G20 voluntary high-level Principles for Financial Institution and Corporate Transition to ensure globally consistent and comparable disclosure standards – addressing legislative barriers, or the G20 Technical Assistance Action Plan to create an ecosystem of capacity-building initiatives encompassing a series of advisory, operational, and technical programs – addressing skills-related barriers. The brief underlines that further efforts are still warranted to ensure effective implementation of the G20 recommendations/tools. The brief also goes beyond G20 existing initiatives and offers some additional solutions to further address the identified barriers such as agreeing on clear, science-based and interoperable taxonomies – to address legislative barriers, and develop market-based solutions, such as green bonds and other financial instruments, to incentivise investment in green projects – and address operational barriers.

JEL Classification: E61, G28, O24.

Keywords: sustainable finance, macroeconomic enabling factors, green transition, investment, green skills.

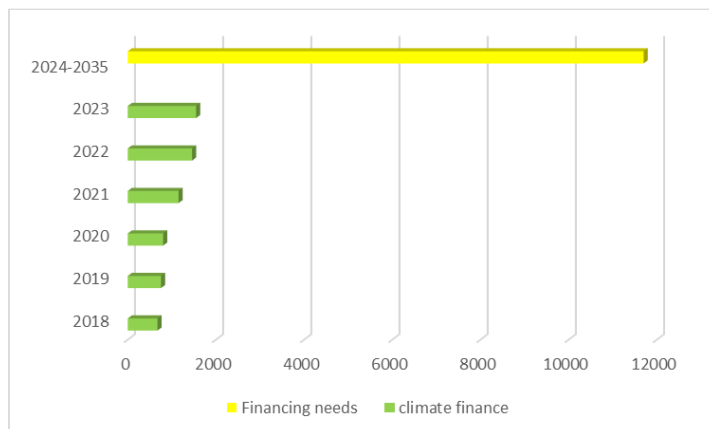
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INTRODUCTION

Before the Paris Agreement of 2015, the UN Environment Programme (UNEP) “Emissions Gap Report” projected that, based on policies then in force around the world, global average temperatures would be almost 5°C higher than in pre-industrial times by the end of the century. In its 2024 report that number was just over 3°C. While we note a decline in temperature, it is alarming to note that 2024 was also the first year to exceed 1.5°C above pre-industrial level¹. To deliver on the Paris Agreement temperature goal of holding the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels, countries need to drastically increase ambition, and invest massively in the transition. However, while climate finance² is on the rise, with some estimating that global climate flows were around 1.5 trillion USD in 2022³, they still fall short of required levels (see Graph 1). Close to an eightfold increase globally is required to reach the up to USD 11,7trillion⁴ needed each year by 2035 under the 1.5°C scenario.⁵ The situation is particularly acute in developing and emerging economies. While developed economies achieved their objective of providing 100 billion USD a year in 2022, it won't

Graph 1: Overview of Climate Finance (in bn USD)



Source: Calculations of the author based on Climate Policy Initiative and UNEP data.

be sufficient to bridge the financing gaps.

The United Nation Framework Convention on Climate Change (UNFCCC) estimated that costed needs in Nationally Determined Contributions in developing countries are estimated at between 455 to 584 billion per year.⁶ At the 29th Conference of the Parties, developed countries agreed on a new quantum of at least USD 300 billion per year by 2035⁷, a welcome increase that will prove determinant but not sufficient.

Many among developing nations, notably led by India, coined the deal as “an optical illusion” not fit for purpose.

However, as the United Nations Climate chief defined it, those 300 billion USD are “an insurance policy”. Public finance will have to play a key catalytic role in leveraging the much more needed private finance.

Despite strong incentives provided by recent sustainable finance regulations, the recent years proved to be difficult for sustainable investment⁸. Notably, sustainable investment funds experienced reduced

¹ Copernicus (2025).

² Sustainable finance includes environmental, social, governance and economic aspects. Green finance includes climate finance but excludes social and economic aspects. Climate finance is a subset of environmental (green) finance.

³ Climate Policy Initiative. (2024).

⁴ United Nations Environment Programme (2024).

⁵ Strinati et al. (2024).

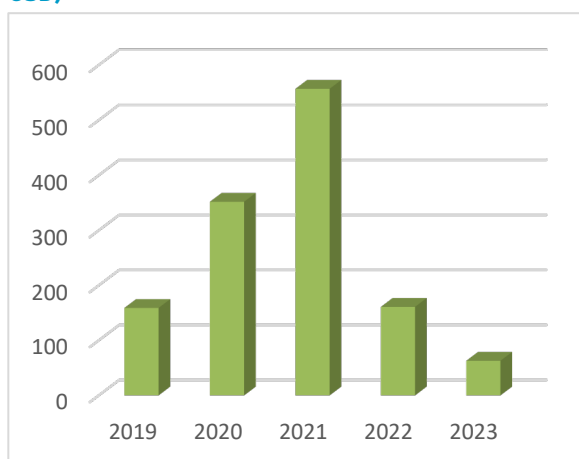
⁶ Conference of the Parties (2024).

⁷ Ibid.

⁸ In the brief, we use data from UNCTAD, while UNCTAD does not provide a single explicit definition of sustainable investment. However, based on the information available, UNCTAD's approach to sustainable investment can be characterised as investment that contributes to inclusive growth and sustainable development goals (SDGs). Key aspects of UNCTAD's approach to sustainable investment include: (i)

inflows in 2022 and 2023 reflecting wavering market sentiment (see Graph 2). This was further confirmed by the withdrawal of two of the largest US-based asset managers – JPMorgan Chase and State Street – from Climate Action 100+ (CA100+)⁹. Their withdrawal was notably due to pressure from politicians that made their participation unsustainable. CA100+ has also seen withdrawals from Europe. Such moves may well be exacerbated by increased reluctance from major emitters to engage further in climate negotiations. Trade tensions and geopolitical strife may indeed lead countries to hold back on their transition commitments. However, it is important to keep in mind that while the cost of decarbonisation may be overestimated¹⁰, it remains significant and pales in comparison to the cost of inaction that some estimated up to close to 15% of global GDP¹¹.

Graph 2: Net inflow to Sustainable Funds (in bn USD)



Source: UNCTAD – World Investment Report 2024.

The challenge is not only to attract more capital, where global capital and liquidity would appear enough to close the investment gaps but to also address the persistent barriers that impede investment in green projects¹². These barriers not only jeopardise the achievement of climate goals but also diminish the economy's productive capacity. In view of the increased occurrence of weather-related disasters with an increasingly macroeconomic and fiscal impact, it appears critical to understand and address these investment barriers in real time.

Investment barriers are often specific to an industry and can be influenced by the state of the economy. It's essential to distinguish between these barriers and market failures, which occur when a market

doesn't allocate resources efficiently, resulting in a loss of social welfare. While market failures are well-studied, investment barriers are not as well-defined in economic theory.

This brief aims at strengthening our understanding of investment barriers in the green transition building on a literature review, and work undertaken in the G20. We identified the most relevant investment barriers based on our literature review and based on existing work in the G20. The barriers discussed in this brief are the following: (i) legislative barriers, (ii) skills-related barriers and (iii) operational barriers. For each barrier, we aim to highlight possible solutions that could be implemented by G20 countries to lift or at least reduce them and identify possible room for international cooperation. We notably identify

Promoting investment in SDG-related sectors, (ii) Integrating sustainability across business operations (iii) Addressing both sustainability risks and opportunities, (iv) Adopting a long-term perspective, and (v) Aligning with international standards and best practices.

⁹ Climate Action 100+ is an investor-led initiative to ensure the world's largest corporate greenhouse gas emitters take appropriate action on climate change to mitigate financial risk and to maximise the long-term value of assets.

¹⁰ It may be overestimated due to modelling assumptions too optimistic regarding economic growth, population growth and related energy consumptions needs, and the difficulty to factor in technological advances, including the falling cost of many green technologies.

¹¹ Network for Greening the Financial System (2024).

¹² In this brief, we define green projects as endeavours having a significant contribution to climate mitigation goals with a focus on sustainable and clean energy initiatives to achieve net zero emission and to reduce their detrimental effects on human health to ensure environmental sustainability.

where such solutions are being discussed in the framework of the G20 and require effective implementation. This would ultimately contribute to the ongoing debate on how to foster green capital flows and provide a useful basis for discussion fostered by the G20 South African Presidency that would like to discuss structural economic obstacles to the green transition. It then identifies key areas of progress under the G20 work-programme.

LEGISLATIVE BARRIERS: WHERE POLICY MAKERS SHOULD FOCUS THEIR EFFORTS

Regulatory uncertainty can significantly deter investment in green sectors by creating an unpredictable environment for investors¹³. When policies are unstable, complex, uncertain or unpredictable¹⁴, the cost of borrowing and, by extension, for green projects can increase, reflecting the higher perceived risk. When regulations are subject to erratic changes, investors face difficulties in forecasting the potential returns and risks associated with their investments, making investors wary of potential defaults or financial difficulties. As a result, they may demand higher interest rates to compensate for the added risk, thereby increasing the overall cost of financing for green projects.

Furthermore unnecessarily complex zoning regulations¹⁵, lengthy regulatory processes, or disproportionate permission requirements may also hinder or deter investment in green technologies.¹⁶ The complexity, instability of a policy framework and/or regulatory environment can create uncertainty that can in turn lead to investment delays or withdrawals as investors may opt to wait for a more stable regulatory climate or redirect their capital to projects or jurisdictions with clearer regulatory frameworks. For example, a seven-month moratorium on approvals for all renewable energy projects was announced in August 2023 by the province of Alberta in Canada, leading to significant uncertainty and investment withdrawal. The moratorium was intended to allow for regulatory reviews and new rules but resulted in the cancellation of 33 projects that were already in queue and the withdrawal of an additional 20 projects seeking approval under pre-moratorium rules. The total impact includes a reported USD 33 billion loss in potential investments and represents about the same amount of power used annually by all Alberta homes.¹⁷

The relationship between policy stability and investment inflows is crucial in the context of green investment, particularly for green infrastructure projects and energy investments. For example, following the adoption of the EU Taxonomy¹⁸, there has been a notable increase in investments directed towards

¹³ [Noailly et al \(2022\)](#).

¹⁴ [Ibid](#)

¹⁵ Zoning refers to municipal or local laws or regulations that govern how real property can and cannot be used in certain geographic areas. It details whether specific geographic zones are acceptable for residential or commercial purposes. Zoning laws may also regulate lot size, placement, density, architectural style, and the height of structures. Zoning laws also describe the procedures for how to handle any zoning rule infractions (including any penalties). For example, zoning laws can limit commercial or industrial use of land to prevent oil, manufacturing, or other types of businesses from building in residential neighbourhoods.

¹⁶ [Li et al \(2023\)](#).

¹⁷ [Pembina Institute \(2024\)](#).

¹⁸ [Regulation \(EU\) 2020/852](#).

sustainable projects.¹⁹ There is also evidence²⁰ that integrating green considerations into the budget process can help mainstream an environmentally aware approach across all policy areas, and can contribute to ensure a stable and consistent policy framework.

HOW TO ADDRESS LEGISLATIVE BARRIERS?

Stable, clear, consistent and predictable policies, including regulatory ones, can lower the cost of capital by reducing the risk premium that investors require. When investors are confident that regulations will remain consistent over time, they are more likely to commit funds to long-term projects, such as those in the renewable energy sector. Besides, empirical findings indicate that clean energy policies and climate change laws and regulation alone are not sufficient in driving the green transition. Evidence showed that strong and well-developed institutions play a key role in establishing and implementing regulatory frameworks for sustainable transition, developing clear and enforceable regulations, standards, and guidelines that govern sustainable development, emissions reductions, pollution control, and other environmental objectives.²¹

Setting enabling conditions is key to improve conditions for investment in sustainable technologies. Robust and stable public governance structures are essential²², providing stability to investors. Effective implementation of sustainable policy framework requires institutions that can enforce laws and regulations effectively²³. Corruption control, civil society participation and democracy are key enablers.²⁴ Enabling conditions can be further improved by:

- enhancing information to allow for a clear understanding of sustainability and resilience criteria in procurement procedures and auctions to help boost demand of renewables,
- simplifying permit-granting processes and reduce red tape where appropriate.

The G20 reform agenda for Multilateral Development Banks (MDBs) to make them “Bigger, Better and More efficient” calls on MDBs to enhance their support to countries removing potential policy and regulatory bottlenecks to private investment and fostering enabling conditions to catalyse more private sector engagement. As the G20 South African Presidency is planning to identify ways of accelerating sustainable economic growth through green transitions in the G20 Framework for Growth Working Group (FWG), further analytical work on (i) how to create better conditions and market access for sustainable projects, and (ii) on the appropriate macroeconomic framework conditions to attract climate finance is warranted. The FWG could work on macroeconomic conditions and relevant structural reforms to enable the green transition, where it could include discussions on:

- simplifying and ensuring compatibility of the regulatory framework for the manufacturing of clean tech, including on how to best develop regulatory sandboxes to help develop and test innovative net-zero technologies and create a level-playing field for innovation,

¹⁹ [European Commission \(2024\)](#).

²⁰ [Pojar \(2023\)](#).

²¹ [Omri et al \(2024\)](#).

²² [Ibid](#)

²³ [Ibid](#)

²⁴ [Gunningham \(2011\)](#).

- identifying red tape and accelerate permitting, including lowering administrative burden for developing net-zero manufacturing projects and providing simpler and faster permitting procedures, and
- facilitating access to markets notably by implementing sustainability and resilience criteria in procurement procedures and auctions to boost demand for renewables.

Besides as we are operating in a global world, coherence and compatibility across borders will help jurisdiction to bridge financing gaps by fostering cross-border investments. Interoperable sustainable standards, regulations and legislation of sustainable activities are also essential to develop a global sustainable financial system²⁵. A risk-based approach to regulatory frameworks that reflects climate risks, impacts and opportunities adequately will enable increased flows of private finance towards sustainable investments. This requires closing data gaps, implementing globally consistent and comparable disclosure standards, and agreeing on clear, science-based and interoperable taxonomies. In that regard, the G20 voluntary high-level Principles for Financial Institution and Corporate Transition Plans adopted under the Brazilian Presidency are a step in the right direction, but effective implementation of the G20 Roadmap on Sustainable Finance, particularly on disclosure requirements, is warranted to foster sustainable capital flow globally.

SKILLS RELATED BARRIERS: HUMAN CAPITAL AT THE CENTRE OF SUSTAINABLE CAPITAL FLOWS

The lack of green skills²⁶, including within the public sector, can hinder the development of sustainable projects²⁷. Public-sector promoters often operate under tight budgetary constraints, which can restrict their capacity to invest in the necessary expertise and resources for project development. This limitation can lead to a lack of bankable projects, which are projects that are sufficiently well-prepared to attract financing from private investors or financial institutions due to their demonstrated profitability and risk management.

A key bottleneck to further scaling up sustainable finance²⁸ is the lack of capacity for policy design, implementation and accountability mechanisms, and development and assessment of financial products and bankable projects, in both developed and developing countries.²⁹ Sustainable Finance can be more

²⁵ Li et al (2023).

²⁶ The European Centre for the Development of Vocational Training (CEDEFOP) defines green skills as “the knowledge, abilities, values and attitudes needed to live in, develop and support a society which reduces the impact of human activity on the environment.

²⁷ Ibid

²⁸ Sustainable finance refers to the process of taking environmental, social and governance (ESG) considerations into account when making investment decisions in the financial sector, leading to more long-term investments in sustainable economic activities and projects. Environmental considerations might include climate change mitigation and adaptation, as well as the environment more broadly, for instance the preservation of biodiversity, pollution prevention and the circular economy. Social considerations could refer to issues of inequality, inclusiveness, labour relations, investment in people and their skills and communities, as well as human rights issues. The governance of public and private institutions – including management structures, employee relations and executive remuneration – plays a fundamental role in ensuring the inclusion of social and environmental considerations in the decision-making process.

²⁹G20 SFWG report (2023).

technical than traditional finance and requires a significant amount of expertise and understanding to evaluate the technological viability, monetary feasibility, and ecological impact of sustainable funding, especially for large-scale initiatives. For example, adaptation investments require understanding and processing high-resolution topographical data, probabilistic scenarios on future temperature, sea level and other climatic indicators. Besides, financial institutions themselves may lack the technical expertise necessary to evaluate and finance sustainable projects.³⁰ The G20 noted that one of the challenges for the rapid deployment of sustainable technologies is a lack of shared understanding among investors of the full potential of technological improvements across the whole landscape of climate change mitigation and adaptation.³¹ This lack of expertise can result in misallocation of funds, a reluctance to fund sustainable projects or requesting a higher required rate of equity return, especially in Emerging and Developing Countries.³²

HOW TO ADDRESS SKILLS RELATED BARRIERS?

Capacity-building initiatives can play a crucial role in overcoming these skills-related barriers. By investing in training and knowledge-sharing, public-sector entities can enhance their ability to prepare projects that meet the criteria for bankability. The G20 Sustainable Finance Working Group (SFWG) already developed a Technical Assistance Action Plan and several recommendations for capacity building have been included in prior SFWG reports. MDBs, with their expertise on the ground and extensive local network can play a key role in such capacity-building. The G20 also called on MDBs to scale-up project preparation support, especially at the design stage, by collaborating with the private sector to identify and develop bankable projects.

Improved project preparation includes thorough feasibility studies, risk assessments, environmental impact analyses, and solid business plans. These elements are essential for attracting private sustainable investments, as they provide investors with the confidence that a project is well-conceived, viable, and aligns with sustainability goals. The impact of improved project preparation can be significant. It can lead to a higher success rate in securing funding, as well as a more efficient and effective project implementation. Moreover, well-prepared projects can contribute to a positive feedback loop by demonstrating the viability of sustainable investments, thereby attracting further interest in and capital to the sector.

OPERATIONAL CAPABILITY OF FINANCIAL INSTITUTIONS: THE NEED TO FOSTER THE ATTRACTIVENESS OF SUSTAINABLE PROJECTS

Operational barriers in sustainable finance, particularly those related to capital constraints, low return on investment (ROI), and high investment costs, present a complex challenge. Such barrier can restrict the flow of capital to environmentally sustainable projects³³.

³⁰ Falcone and Sica (2019).

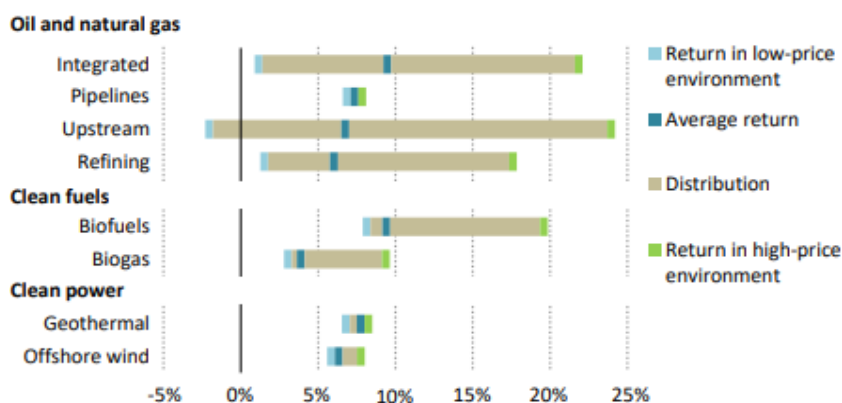
³¹ G20 SFWG report (2023).

³² Cost of Capital for Renewable Energy Investments in Developing Economies, Climate Policy Initiative, 2023.

³³ Khan et al (2023).

Capital constraints refer to the limited financial resources that institutions are willing or able to allocate to sustainable projects. Financial institutions often perceive sustainable financing as high-risk as many sustainable technologies are still in their early stages, and it takes time to see returns on investment³⁴.

Graph 3: Return on capital employed for selected oil, gas and clean energy business



Source: IEA - World Energy Outlook Special report (2023) - The Oil and Gas Industry in Net Zero Transitions.

Financial institutions are therefore cautious about the risk of holding a significant portion of assets in sustainable finance. The Required Return Rate for sustainable projects is therefore generally higher than for fossil fuel projects, ranging from 10% to 20% compared to 6% to 10% for fossil fuel projects.³⁵ This disparity is driven by the associated risks and uncertainties in the sustainable sector, including higher initial costs, technological adoption risks, and market acceptance uncertainty³⁶. In contrast, fossil fuel projects benefit from established industries, with more predictable cash flows.

Low ROI and high investment costs are interrelated barriers that stem from the inherent characteristics of many sustainable projects. Such projects can be unpredictable, and technological advancements can be risky, making them seem less profitable, particularly in the short term. High upfront capital costs for renewable energy initiatives and energy-efficient infrastructure can strain project finance and limit the availability of sustainable finance options³⁷. These factors can deter financial institutions, which must balance the desire to support sustainable initiatives with the need to generate a profit and manage risks effectively. It is important to note that according to the International Energy Agency (IEA), oil and gas projects have historically produced higher but less stable returns (6–9% between 2010–2022 on average but can be up to 25% for upstream pure players³⁸) Clean energy projects have, on the other hand, delivered more consistent returns (averaging 6% during the same period)³⁹ (see Graph 3). While some clean energy technologies exhibit a similar volatility and sensitivity to fuel prices, renewables projects with fixed offtakers tend to have lower volatility in returns than oil and gas projects and they also generally have a lower risk profile.⁴⁰ It is essential that investors better understand the possible return profile of clean energy technologies. Investment opportunities in clean energy can indeed yield average

³⁴ Kharb et al. (2024).

³⁵ International Energy Agency (2023).

³⁶ Market acceptance uncertainty refers to the uncertainty or risk that a new product, service, or technology (in this case, sustainable technologies) may not be widely accepted or adopted by the market.

³⁷ Li, et al 2023.

³⁸ A "pure player" in the fossil fuel industry refers to a company that focuses primarily, or exclusively, on the exploration, production, and marketing of oil and/or natural gas, without significant diversification into other energy sources or industries.

³⁹ International Energy Agency (2023).

⁴⁰ Ibid.

returns that are similar to those in the oil and gas industry, and, for clean power, they are much less volatile.

The effect of these operational barriers on access to finance is multifaceted. On the one hand, they can lead to a scarcity of funding for sustainable projects, as financial institutions prioritise investments with clearer, more immediate returns. On the other hand, they can discourage the development of new sustainable projects due to the perceived difficulty in obtaining financing. This creates a vicious cycle where the lack of bankable sustainable projects in the short- to medium-term further reinforces the hesitancy of financial institutions to engage in sustainable finance.

HOW TO ADDRESS OPERATIONAL RELATED BARRIERS?

In 2023, the G20 SFWG issued a series of recommendations for policy measures and financial instruments for catalysing the rapid development and deployment of sustainable and low-carbon technologies. It included implementing policy and regulatory frameworks that incentivises corporate investments in R&D for climate innovation, facilitates business set-up, and incentivises support for climate technology start-ups, including those focused on early-stage climate technologies.

To further address these barriers, it is also essential to consider market-based solutions. Market-based solutions could include the development of green bonds and other financial instruments that offer a more attractive risk-return profile for sustainable investments. Under the G20 MDB roadmap, Multilateral Development Banks (MDBs) must increase their capacity to lend in local currency in Emerging and Developing countries and eventually help them to develop their own local financial markets. While most MDBs offer loans in local currency, the amounts are often relatively small and concentrated in countries with more developed financial markets. The G20 Task Force on Global Mobilisation against Climate Change encouraged MDBs, vertical climate and environment funds, and international financial institutions (IFIs) to consider, where possible FX hedging, and other innovative financial solutions that can expand the quality and quantity of local currency financing options, attract private and domestic investment, and increase the financial viability of projects. Approaches to mitigate currency exchange rate risks were also discussed in the G20 Infrastructure Working Group.

Enhancing the transparency and standardisation of sustainable projects through clear definitions and robust reporting standards can also make sustainable investments more appealing. The G20 Roadmap for better, bigger and more effective MDBs developed under the Brazilian Presidency and endorsed by Leaders in Rio in November 2024, calls on MDBs Multilateral Development Banks to continue working on the Global Emerging Markets Risk Database (GEMs) and release data on default and recovery rates. Making more data from the GEMs database publicly available will help achieve this aim by enabling private sector investors to make better informed risk assessments in emerging markets where obtaining reliable statistics can be challenging. By providing robust statistics that help to quantify investment risks versus expected returns, investment firms and banks may be willing to increase their allocations to developing markets, and to advocate for the asset class to their end clients⁴¹. Good progress has been made by the IMF Annual meetings in October 2024, with two new GEMs publications providing credit performance of lending to private and public counterparts for over three decades.

⁴¹ Global Emerging Markets Risk Database (2024).

CONCLUSION

As the demand for sustainable finance grows in response to more weather- and climate-related events and a need to better address climate change, this brief highlights the necessity to go beyond discussing climate finance and confront and dismantle the investment barriers that threaten to derail progress towards the net-zero emissions target by 2050. Many of the key barriers identified in the brief are being addressed in the G20 framework already or have, at least, been identified with relevant recommendations on how to address them issued. However, further efforts are still warranted to ensure effective implementation of the G20 recommendations, which are mostly voluntary in nature. Legislative barriers are shown to significantly undermine investor confidence due to regulatory instability, unpredictability, and complexity. Interoperable, transparent, and risk-sensitive regulatory frameworks, promoted through the G20 SFWG work, are needed to foster a more stable investment climate. The call for interoperable standards and taxonomies is a vital step towards enhancing the flow of private finance into sustainable investments. The G20 should therefore ensure the effective implementation of its Sustainable Finance Roadmap and engage in discussion on (i) how to create better conditions and market access for sustainable projects, and on (ii) the appropriate macroeconomic framework conditions to attract climate finance. Skills-related barriers underscore the critical shortage of technical expertise required to develop, assess, and finance sustainable projects. It is key to empower public-sector promoters and financial institutions. Multilateral Development Banks, and International Financial Institutions and Vertical Climate Environmental Funds can play a key role in facilitating capacity building via their focal points network. Finally, operational barriers, such as low ROI and high costs, pose significant challenges to the financial viability of sustainable projects. Market-based solutions can incentivise and de-risk sustainable investments. The development of green bonds and other financing mechanisms that offer competitive risk-return profiles could help entice capital towards environmentally sustainable projects.

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