TCD IMF TASK FORCE ON CLIMATE, DEVELOPMENT AND THE INTERNATIONAL MONETARY FUND

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Toward Development-Centered Climate Change Policy at the International Monetary Fund

Vulnerable Twenty Group

Intergovernmental Group of Twenty Four G-24

Centre for Social and Economic Progress CSEP

Financial Futures Center

United Nations ECLAC

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TASK FORCE ON CLIMATE, DEVELOPMENT
AND THE INTERNATIONAL MONETARY FUND

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Abbreviations

CSR	Comprehensive Surveillance Review
DSAs	Debt Sustainability Analyses
FSAPs	Financial Sector Assessment Programs
FSB	Financial Stability Board
G20	Group of Twenty
G24	Intergovernmental Group of Twenty-Four
IPCC	Intergovernmental Panel on Climate Change
IPSF	International Platform on Sustainable Finance
IMF	International Monetary Fund
MDBs	Multilateral Development Banks
NDC	Nationally Determined Contribution
NGFS	Network of Central Banks and Supervisors for Greening the Financial System
OECD	Organization for Economic Cooperation and Development
SIDS	Small Island Developing States
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department on Economic and Social Affairs
V20	Vulnerable Group of Twenty
WEO	World Economic Outlook

About the Task Force on Climate, Development and the International Monetary Fund

The Task Force on Climate, Development and the International Monetary Fund is a consortium of experts from around the world convened to support the Intergovernmental Group of Twenty-Four and the Vulnerable Group of Twenty Ministers of Finance. The Task Force engages in and utilizes rigorous, empirical research to advance IMF policies that align international financial stability and growth with global climate goals. Core to the Task Force's mission is advancing a development-centered approach to climate change at the IMF.

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1. Intergovernmental Group of Twenty-Four (G24)
2. Vulnerable Group of Twenty (V20) Ministers of Finance
3. African Economic Research Consortium
4. Boston University Global Development Policy Center
5. Centre for Social and Economic Progress
6. Financial Futures Center
7. National School of Development, Peking University
8. United Nations Economic Commission for Latin America and the Caribbean

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Executive Summary

Climate change and policy responses to address climate change pose significant risks to financial and fiscal stability, poverty and inequality, and the long-run growth prospects of the world economy. In the midst of a global pandemic, 2021 has already been marked by a slew of extreme weather events, wreaking havoc on countries and economies across the globe. While climate change presents unprecedented risk to life, and the world economy, as we know it, climate action presents an opportunity to build a 21st century productive growth and stability model that allows the international community to adapt to a changing climate while raising levels of prosperity across the world.

As the only multilateral, rules-based institution charged with promoting the stability of the international financial and monetary system in order to enable longer-run growth, the International Monetary Fund (IMF) has a central role to play in the transition to a low carbon and resilient global economy.

To that end, the Task Force on Climate, Development and the International Monetary Fund is a consortium of experts from around the world convened to support the Intergovernmental Group of Twenty-Four and the Vulnerable Group of Twenty Ministers of Finance. The Task Force engages in and utilizes rigorous, empirical research to advance IMF policies that align international financial stability and growth with global climate goals. Core to the Task Force's mission is advancing a development-centered approach to climate change at the IMF.

This initial strategy report will function as the founding guidelines of the Task Force. First, it provides the context of the issue, highlighting the urgent need for development-centered climate action. Second, it envisions three key elements that should form a development-centered approach to climate change at the IMF:

- Multilateral surveillance and global leadership
- Bilateral surveillance and capacity development
- A climate-aligned IMF finance toolkit

Finally, it outlines a set of five principles that should guide the evolution of IMF climate strategies for the next decade and beyond:

- Adopt the global role in addressing the macroeconomic implications of climate risk, climate action and asymmetries.
- Align short-term stability concerns with longer-term sustainable and resilient growth pathways.
- Tailor policy advice to member country circumstances.
- Empower national and stakeholder ownership of policy.
- Reconcile shared climate goals with equity and appropriate burden sharing.

Learn more about the Task Force on Climate, Development and the IMF at gdpcenter.org/TaskForce

Introduction

In August 2021, the sixth UN-convened Intergovernmental Panel on Climate Change (IPCC) report raised the alarm that global warming will accelerate at a pace unparalleled in human history over the coming decade, all but ensuring an increase beyond 1.5°C from pre-industrial levels. This news came during a summer marked by extreme weather events that were unprecedented in their frequency and severity, leaving economies and communities across the globe already reeling at just a 1.1°C increase.

Climate change and policy responses to address climate change pose significant risks to financial and fiscal stability, poverty and inequality, and the long-run growth prospects of the world economy. Climate action, however, presents an opportunity to build a 21st century productive growth and stability model that allows us to adapt to a changing climate while raising levels of prosperity across the world.

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In July of 2021, the IMF released 'IMF Strategy to Help Members Address Climate Change Related Policy Challenges: Priorities, Modes of Delivery, and Budget Implications,' a policy paper that begins to devise a strategy for how the institution will mainstream climate change into IMF operations (IMF, 2021). The Task Force applauds this step but seeks to push further. It is key for this strategy to identify (1) the global and national-level macroeconomic implications of climate risks, (2) the global and coordinated national policy frameworks needed and (3) the financing necessary for a globally just transition to a net-zero and resilient world economy by 2050.

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Recognizing that such a shift will require significant reform to the IMF's surveillance and advisory functions and finance toolkit, the Task Force will produce a series of research products while engaging in critical policy dialogue over the next 18 months to provide empirical, rigorous research that can inform this transition.

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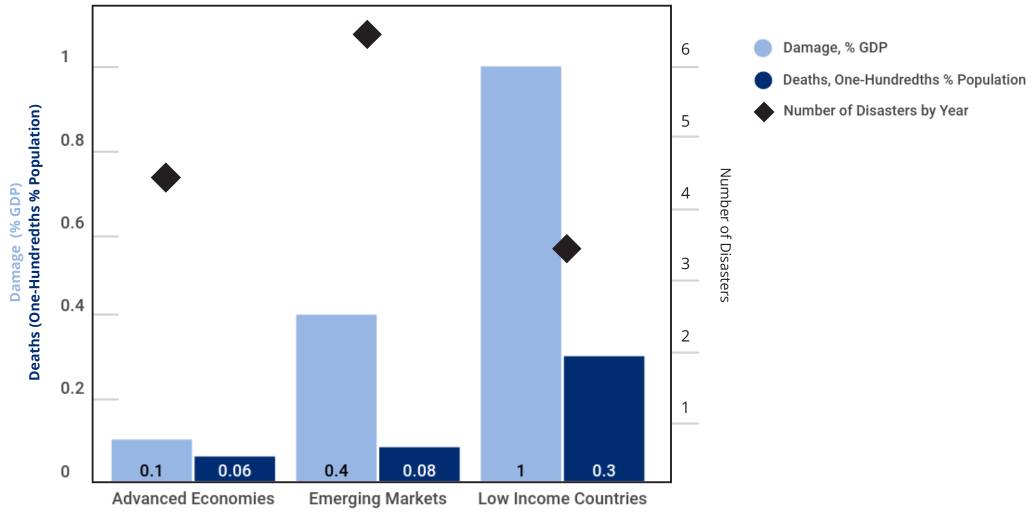
The Urgent Need for Development-Centered Climate Action

There is an urgent need for coordinated and ambitious global action to mitigate and adapt to climate change in a manner that is financially stable, aligned with growth and development goals and supportive of equity both within and across national borders. In the midst of the COVID-19 crisis, 2020 was one of the two hottest years in recorded history, while ten of the warmest years occurred in the 15 years previous (NOAA, 2020). Climate change is triggering rises in sea levels, increased incidence of natural disasters and great strain on the ecosystems that humanity depends on for our livelihoods. The price tag for extreme weather events is trending upwards of $6 trillion in this century thus far, and in 2021 alone, the cost has been estimated at $298 billion. In some cases, such as in Small Island Developing States (SIDS), these damages have been more than 100 percent of GDP for just one event (Climate, Weather, and Catastrophe Insight, 2021). Recent research by the World Bank estimates that more than 132 million people will be pushed into extreme poverty because of climate-related events by 2030 (Jafino et al., 2020). If the world's climate is not stabilized over the next decade, the social and economic costs of climate change will be more than three times larger than if we act now, and it could threaten the very ability of humanity to survive as we know it (Sanderson and O'Neill, 2020; Bhattacharya et al., 2021).

FIGURE 1: Frequency and Magnitude of Natural Disasters, 1980 - 2020



Source: Bhattacharya et al., 2021.

UNDERSTANDING THE RISKS

The climate risks that face IMF member states and the world at large fall into at least three categories: physical risk, national transition risk and cross-border 'spillover' transition risk. Physical risks arise from both immediate weather events as well as long-term changes in the climate. The former is characterized by increasing severity, volatility and frequency; the latter by slow-onset events that have major cumulative impact over time and disrupted ecosystems. Physical risks are financial risks because they impact the value of financial assets such as property, infrastructure and beyond. Banks, in turn, face higher credit and underwriting risks. Extreme weather events and changes in climate can also disrupt supply chains and business operations, and transboundary physical risks due to cross-border climate impacts may affect prices, alter terms of trade and more (Batten et al. 2016; Dikau and Volz 2019; Monasterolo 2020a; Volz and Ahmed 2020; Dunz et al. 2021).

Transition risks at the national level emanate from a country's own efforts at adaptation, resilience-building and transition policies to a low-carbon economy. Transition risks materialize when changes in regulation, taxation, technological innovations and other policies that consider social costs of emissions or shifts in consumer preferences and social norms alter the expected future cash flows from productive assets, which can turn carbon-intensive assets into stranded assets (Pointner and Ritzberger-Grünwald 2019; Caldecott 2018). In a widely cited paper, McGlade and Ekins (2015) estimate that by keeping global temperatures within the Paris Agreement target range, approximately one-third of the current oil reserves, half the gas reserves and almost 90 percent of the coal reserves will become stranded assets. There could also be an additional liability risk, which refers to the legal risks from parties adversely affected by climate change and climate change policy (Ackerman 2017; Battiston et al. 2017; Dikau and Volz 2019; Monasterolo 2020a). Battiston et al. (2017)'s climate stress test assessed the financial system's exposure to climate transition risk, finding that investors are highly exposed to climate policy relevant sectors, and losses can be amplified by financial interconnectedness.

The early work on climate risk and financial stability was national in nature, given its origins in the central banking community (NGFS 2020). As a global institution, the IMF is charged with monitoring cross-border spillovers as well. To that end, in addition to national-level transition risks, we advance the notion of 'spillover' transition risks, whereby transition policies of one country or region have macro-critical impacts on the financial and fiscal systems of another country or region (Gallagher et al. 2021; Monasterolo, Gourdes, and Gallagher 2021; Ramos & Gallagher 2021). The preamble of the Paris Agreement recognizes this, noting that not only may countries be impacted by climate change, but they may also be affected by the 'impacts of the measures taken in response.' Pursuant to the IMF's mission, the IMF has a leadership role to play in aiding in the design and surveillance of macroeconomic, fiscal and financial systems that enable carbon neutrality and climate resilient economies.

To illustrate, when the European Union puts in place a large carbon tax with a border adjustment mechanism, it could constitute a shock to economies of developing countries that are highly dependent on oil or gas as a source of exports (either in crude form or indirectly through tourism) such as Angola, Azerbaijan, Congo, Ecuador, Nigeria, Timor Leste and developing states in the Persian Gulf. The shock would lower exports and have an immediate impact on the balance of payments. Indeed, it was these types of unexpected shocks that triggered instability and led to many of the financial crises of the 1980s (Baumeister et al. 2016). Cross-border transition spillovers will not only trigger balance of payments shocks but can also cascade to the real economy, private finance and, of course, public finance—especially for fossil fuel dependent economies.

THE NEED FOR GREEN, JUST TRANSITIONS

If humanity can harness its will, efforts to stabilize the climate will not only preserve the planet but also present an opportunity to address many of the long-standing asymmetries in the world economy and unlock a 21st century growth path that could bring stable, inclusive and sustainable growth across the world. Such an effort will require an alignment of the fiscal, financial and productive systems with climate action, as well as a stepwise mobilization of public and private resources for investments in structural change, sustainable infrastructure and climate resilience. The Paris Agreement offers a clear vision of how the direction of financial flows will have to change. In its Article 2(1)(c), the Agreement calls on the international community to 'make financial flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.' Such a rapid transformation will inevitably create winners and losers. The goods and services in sectors that are fast becoming stranded assets during the transition are key sources of growth, employment, foreign exchange, fiscal revenue and livelihoods for many governments and people across the world—many of whom were not responsible for triggering climate change in the first place. Paramount to such a global effort then will be ensuring that the climate transition is a just one. Ensuring a just transition and enabling countries to take advantage of the growth opportunities will require substantial resources and investments.

Global policy coordination will be needed to mobilize trillions of dollars in a short period of time in order to trigger the structural transformation necessary to build a resilient, net-zero and just world economy. Emerging market and developing countries needed to mobilize at minimum an additional 2.2 percent of annual GDP through 2030 to finance a transition to resilient, low carbon economies in accordance with the Paris Agreement, but they were already falling behind even before the onset of the COVID-19 crisis (Bhattacharya et al., 2019; 2021).

The COVID-19 crisis presents an opportunity for countries to put economic and environmental resilience—in other words, climate transitions—at the heart of their recovery efforts. In the October 2020 *World Economic Outlook* (WEO), the IMF estimated that if countries put climate change at the core of recovery efforts, then the recovery will be significantly stronger than if countries reverted to simply restarting existing economic structures. As mentioned earlier, if nations phased out fossil fuel subsidies, ramped up renewable energy subsidies and invested in sustainable infrastructure and social adjustment for those workers and entrepreneurs in incumbent fossil industries, the global economy would grow by an additional 0.7 percent (IMF 2020). A more recent IMF paper also found that 'green' stimulus measures such as renewable energy and sustainable infrastructure have two to seven times the multiplier effect than 'brown' stimulus measures in coal, gas, oil and beyond (Batini et al., 2021). In a context where developing countries lack fiscal space in the wake of COVID-19, the IMF will have a crucial role to play in enabling such investment through its financing, advisory and surveillance roles.

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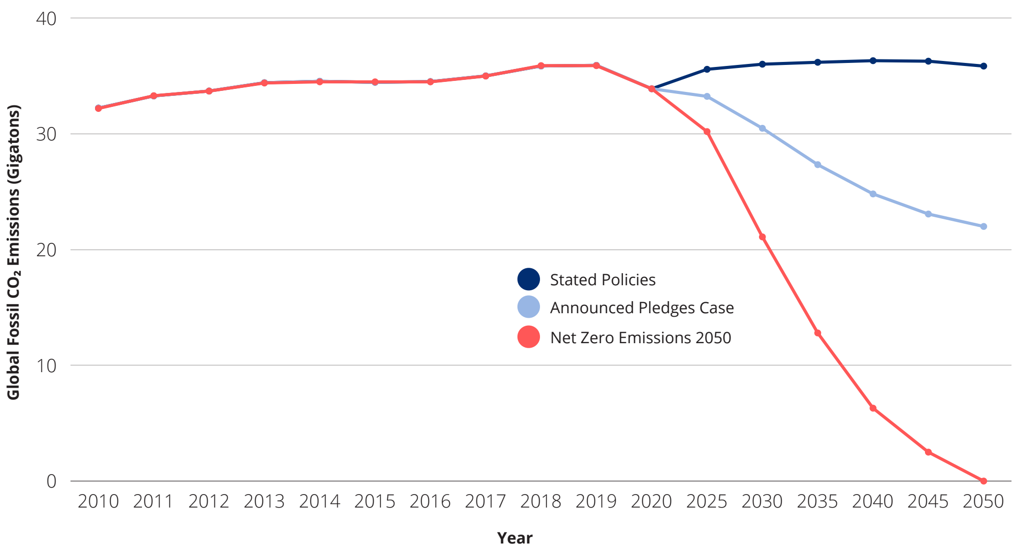
THE IMF'S CENTRAL ROLE IN THE GLOBAL EFFORT TO TACKLE CLIMATE CHANGE

Global cooperation is crucial to the effort of supporting a better post-pandemic recovery. In 2015, the world's nation states converged on the Sustainable Development Goals and the Paris Climate Agreement through the United Nations, and national and local communities have worked to align policy and practice to this consensus. Figure 2 shows that if the 2015 pledges are fulfilled, it will be a sign of progress but ultimately more ambition will be needed.

FIGURE 2: Current Pledges and Emissions Pathways



Source: International Energy Agency, 2021.

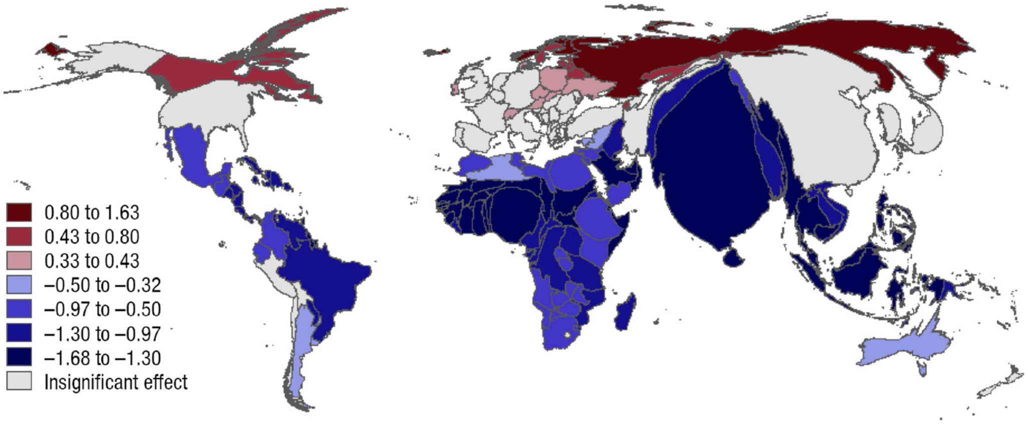
Since 2015, a broad set of actors, ranging from governments and international organizations to major corporations, civil society organizations and financial institutions, have converged around achieving global net-zero emissions by mid-century. Recently, finance ministers and central bankers created the Coalition of Finance Ministers for Climate Action and the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), respectively. Alongside the Financial Stability Board (FSB), these two entities are taking the lead on identifying climate risks in the world economy. The International Organization of Securities Commissions and other international financial institutions have focused on climate risk disclosure efforts. The International Platform on Sustainable Finance (IPSF), the United Nations Department on Economic and Social Affairs (UNDESA) and the G20 are working on taxonomies for investment standards. Of course, many more formal and informal actors are involved in climate action and in exchanging national-level best practices. Often, these initiatives are rooted at the national-level and strive to achieve greater harmonization internationally. What is missing is a global actor focused on the macroeconomic implications of climate risk and climate policy. As the only multilateral, rules-based institution charged with maintaining the stability of the international financial and monetary system, the IMF has a central role to play in ensuring that a rapid and just transition occurs in a manner that generates sustainable global growth that is fiscally sound and financially stable.

Elements of a Development-Centered Approach to Climate Change at the IMF

The IMF's climate strategy will need to rapidly evolve and be mainstreamed across the IMF toolkit. The IMF's draft climate strategy is an important first step; yet, pursuant to the IMF's stability and growth mission, the strategic goal of the IMF climate strategy should be to enable a globally just transition to a climate resilient, net-zero and inclusive world economy in a rapid but financially and fiscally stable manner. In doing so, it is crucial that the IMF recognizes that emerging market and developing countries face a unique set of circumstances with respect to the climate challenge. Such circumstances fall into at least three categories:

- **Inaction by the world's major greenhouse gas emitters will have disproportionately higher costs on developing countries.** As shown in Figure 3, temperature increases will reduce per capita income significantly more across the most populous areas of the developing world.
- **Many poorer and climate vulnerable countries need immediate focus on adaptation and resilience,** yet given the significant spending needs, limited resources and fiscal space, and increasing levels of debt distress such countries have a limited capacity to adapt to climate change.
- **Growth-enhancing green structural transformation will need to be the cornerstone of all mitigation, adaptation, and resilience strategies** (UNEP, 2018). A fundamental shift in

FIGURE 3: Effect of a 1°C Increase in Temperature on Real per Capita Output at the Country Level, with Countries Rescaled in Proportion to Their Population



Data source: IMF, 2017.

the structure of production and demand in a manner that is socially inclusive and climate resilient is the core to development-centered climate policy.

It is also paramount that the IMF recognize that the world's largest historical emitters, particularly in Europe and the United States, represented over 70 percent of the cumulative carbon emissions in the world economy between 1850 and 1990, and over 50 percent through the present day. Yet, the IMF has little leverage over Europe and the United States, as well as the other major emitters moving forward. The IMF has a moral and economic imperative that emerging market and developing countries do not asymmetrically bear the burden of climate action at the IMF. This is especially critical because the Fund has little sway over the macroeconomic policies of developed countries due to asymmetries in quotas and voting power that are inherent in the Fund's decision-making structure.

Recognizing these particular challenges for emerging market and developing countries, a development-centered IMF climate strategy should be grounded in the following three key elements.

1

Multilateral surveillance and global leadership: Identify and address the global and cross-border macroeconomic implications of climate risks. Advance the necessary global financing and policy frameworks through multilateral surveillance and global leadership.

The most important niche for the IMF to fill is in identifying and addressing the macroeconomic implications and policy or financing solutions necessary for a global just transition. The IMF can address this through reforming its multilateral surveillance functions and spillover reports, as well as in its role as a global leader in the G20 and other international forums. By paying special attention to the spillovers that may arise from climate change and climate change policy, the IMF should provide analytical insight to highlight spillover channels and impacts. This will motivate effective global policy coordination to help mobilize resources and create the proper incentives for the rapid and inclusive green structural transformation that is required of the global economy.

As the EU's carbon tax and border adjustment mechanism underscored earlier in this report, 'first mover' policies in the industrialized world need to be examined from a global perspective. The United Nations Conference on Trade and Development (UNCTAD) estimates that at even modest levels of a carbon border adjustment mechanism, the income of developed countries would rise by $2.5 billion while that of developing nations would fall by $5.9 billion (UNCTAD, 2021). Further granular analyses should form the core of the IMF multilateral surveillance toolkit so that nations can collectively anticipate, mitigate and adjust to such global spillovers in just manner.

High quality data will be critical to ensure that the IMF's surveillance efforts truly capture material risks. The IMF has already launched a 'Climate Change Dashboard' that brings together various climate-related indicators. However, there is a clear need for data gathering and expansion of utilization capabilities. Climate and economic data are required at sufficient levels of granularity to ensure that they are meaningful and can inform decision-making. While there has been a push for asset-specific data by asset managers in the financial realm, a similar effort is required to ensure that decision makers involved in public finance also have the tools and capabilities needed to address the risks posed by climate change. An enhanced data

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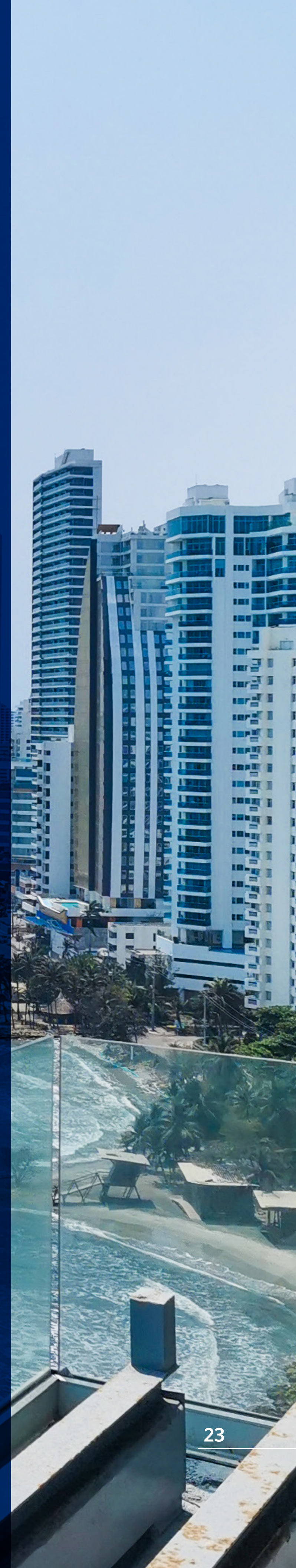


platform would help support the IMF's surveillance efforts and would be keeping in line with the IMF's mandate as a global institution charged with the responsibility for stability of the financial and monetary system.

Concomitantly, the IMF should integrate climate action in its role as a global leader on macroeconomic issues within the international system. As a convener and supporter of numerous international efforts, the IMF is uniquely positioned to identify and address the extent to which climate change and climate change policy may pose systemic risks to parts of the global economy, whether the policies—positive or negative—in one country have spillover transition impacts in other countries, as well as other critical insights. For example, the IMF has sought to build consensus on the need for a carbon price floor amongst major economies and should explore the implications of expanding the carbon price floor to include a larger range of economies.

In its role as a global leader, the IMF must also be stronger in urging advanced and other major economies to deliver on climate finance promises and foster a faster transition in developing economies. It is clear that the current levels of financing adaptation and resilience measures and climate transitions has not been enough. The IMF could help estimate the supply of public finance by developed countries to developing countries to address climate change.

In 2015, developed countries reaffirmed their standing commitment to help mobilize $100 billion per year for 2020 through 2024 to support climate action in developing countries. Although roughly $80 billion was mobilized in 2018, a sizeable gap still remains (OECD, 2020). The Organization for Economic Cooperation and Development (OECD) also estimates that only one-fifth of the total public climate finance mobilized was earmarked for adaptation (OECD, 2020). The low amount of finance mobilized for adaptation has been a consistent concern, particularly for SIDS. In an attempt to remedy the bias towards emission reductions, Article 9.4 of the Paris Agreement calls for balance between mitigation and adaptation finance. Given the slow pace of decarbonization over the past two decades, countries that are particularly vulnerable to the impacts of climate change are facing the development challenges of containing economic and non-economic losses and damages.

Furthermore, the $100 billion figure was a politically-determined one, rather than scientific. As noted earlier, research by the World Bank, OECD and the New Climate Economy all estimate that at least 2 percent of GDP in additional financing is needed on an annual basis moving forward (for a review of this work see Bhattacharya et al., 2019).

As countries implement deeper cuts in their greenhouse gas emissions, the macroeconomic consequences of carbon markets will need attention. With many corporations pledging to achieve net-zero emissions, the role of the voluntary carbon market is poised to grow, but there is very little understanding of how capital flows through these markets will impact global and national growth and stability. The IMF can play a leadership role in deepening these analyses at the country-specific and global level, as well as designing instruments ranging from new forms of liquidity support to debt relief for climate action. In order to do so, the IMF will need to work hand-in-hand with the World Bank and other development finance institutions, international organizations, member states and myriad other stakeholders.

Again, the IMF's climate strategy must recognize how its policy traction substantially varies across countries. The Fund's climate strategy may disproportionately impact countries with IMF programs. To increase its policy traction amongst major economies, the IMF can forge a

As accelerated decarbonization needs to take place this decade to keep the Paris Agreement temperature goals within reach, there is a clear need for the IMF to mainstream climate change into its surveillance functions.

common understanding on coordinated carbon prices, border adjustments, and the identification and management of cross-border spillovers. The IMF's analytic input into processes like the Major Economies Forum will also be vital.

2

Bilateral surveillance and capacity development: Identify and address the macroeconomic implications of climate risks, necessary financing, and policy frameworks through bilateral surveillance and member-state capacity development.

IMF bilateral surveillance functions will need to chart progress toward global carbon neutrality and climate resilience by ensuring that individual member states, and the collective, are rapidly mobilizing policy frameworks and resources that maintain fiscal, macroeconomic and financial stability. In addition to financial and fiscal policy, the IMF will need to examine how country growth strategies and fiscal frameworks can be aligned with country pledges to reduce greenhouse gas emissions and build climate resilience. Estimating the financing needs to achieve nationally determined contribution (NDC) targets will be vital. The IMF will also need to help countries identify the implications of the global consensus on the need to achieve global net-zero emissions by mid-century.

The IMF reviewed its surveillance functions during the Comprehensive Surveillance Review (CSR), and climate change cuts through the four priority areas identified: confronting risks and uncertainties, preempting and mitigating adverse spillovers, fostering economic sustainability, and unified policy advice. As accelerated decarbonization needs to take place this decade to keep the Paris Agreement temperature goals within reach, there is a clear need for the IMF to mainstream climate change into its surveillance functions. For the IMF bilateral surveillance functions, all three of the climate risks discussed earlier—physical risk, national transition risk and cross-border transition risk—need to be incorporated in the major surveillance activities of the IMF, notably the bilateral Article IV reports and the Financial Sector Assessment Programs (FSAPs). It will also be paramount to incorporate physical and transition risks and the need for a stepwise increase in resource mobilization into Debt Sustainability Analysis (DSAs) as well as Fiscal Space Assessment Frameworks for lower and middle-income and market access countries. As noted under the first element, high quality, country-specific data will be crucial to gain an accurate understanding of risks to support the IMF's surveillance activities.

Surveillance and advice should take into account the unique circumstances of many emerging market and developing countries that are particularly vulnerable to climate change and climate change policy. SIDS, for example, can be highly vulnerable to physical climate risks. Single fossil-fuel based commodity exporters and countries with energy systems that rely on fossil fuels will be highly vulnerable to transition risks. SIDS in the Caribbean are highly dependent on tourism for foreign exchange, growth and employment. In addition, climate vulnerable countries, such as SIDS, pay a higher cost of capital for climate vulnerabilities, which creates problems for fiscal space and debt sustainability (Kling et al. 2021). In this regard, Battiston & Monasterolo (2020) developed the 'climate spread,' a climate sovereign risk metric that incorporates countries' exposure to climate physical and transition risks in their credit worthiness and financial stability profile. Hence, unanticipated increases in the incidence of natural hazards, such as hurricanes, translate into acute supply shocks through the destruction of infrastructure that supports tourism such as hotels, roadways and air transportation. Such destruction of the capital stock can have negative and cascading impacts on countries' growth, employment and balance of payments. Furthermore, the level of production and profitability decreases in impacted firms, negatively impacting the financial system and, of course, through losses in tax revenues, bond spreads and more. In 2017, global economic damages from extreme weather events amounted to $320 billion, with a country such as Dominica losing 226 percent of GDP (Persaud, 2021).

In many countries, transition risks can be the most macro-critical in their potential impacts on the real economy and livelihoods, financial systems and public finance of a country. While exposure to all types of fossil fuels is becoming increasingly risky, a number of central banks see transition risks related to coal extraction and coal-fired power plant closings, given the consensus that coal should be the first energy source that we transition away from, as the most macro-critical form of climate risk given the depth of such exposure (Mercure et al. 2018; Vermuelen et al. 2019; Allen et al. 2020; Campiglio et al. 2018). The Bank of England estimates that a rapid carbon transition could result in equity write-downs from 40 to 65 percent in coal extraction and generation respectively (Bullard, 2020). A just transition also needs to be addressed in the context of alternative livelihoods for communities highly dependent on climate-sensitive sectors. Likewise, climate impacts may also lead to stranded infrastructure assets which have significant financial and fiscal implications for climate vulnerable nations (Thomas et al. 2020).

The IMF can play an important role in helping member states understand how well-aligned their public expenditures are with their climate change goals and commitments. IMF advice can be useful for countries to design policy frameworks that mainstream climate change into national budget planning, playing a facilitative role in helping build capacity on green budgeting and exchanging lessons learned.

Similarly, engaging in capacity development would allow the IMF to meaningfully incorporate climate change into its work. The IMF's proposed expansion of climate change staff is a welcome step forward, though the staffing must reflect the diversity of its membership. The nascent and multidisciplinary nature of climate change and climate change policy requires robust and regular training of staff on various aspects of structural transformation and development. The staff expansion dually serves as an opportunity for the IMF to help develop capacity with its member states. IMF staff could train trainers to help build capacity around the world.

3

Climate-aligned IMF finance toolkit: Align the IMF finance toolkit with climate action and longer-run sustainable growth and development.

The IMF has a crucial frontline role to play in responding to climate shocks, especially where those shocks impact balance of payments, fiscal stability and growth trajectories. Existing IMF lending programs will need to be adjusted to align with climate and development goals. Indeed, given the macro-critical nature of climate change and climate change policy, new lending products may need to be devised for countries that are particularly vulnerable to physical risk, transition risk and the consequences of large emitters. The IMF must be equipped to provide financing to build climate resilience before extreme events occur or the long-term, cumulative impacts of climate change worsen. The IMF's role is all the more important because of the inadequacies of the existing financing architecture, both in terms of scale and nature of financing, to help countries manage shocks induced by climate impacts.

Traditionally, the IMF's flagship lending programs have incorporated conditionalities, requiring countries to engage in contractionary monetary and fiscal policies that often resulted in a decrease in public investments as well as worsening social and environmental outcomes (Kentikelenis et al., 2016). In such efforts, however, the IMF would occasionally ask that countries reduce or eliminate fossil fuel subsidies. While such policies may be optimal in the intermediate term, the IMF and host countries often did not couple the elimination of fossil fuel with financial support and alternative means of energy access for those most affected from the subsidies (Joos, 2018; Monahan 2019). Recent fossil fuel subsidy reductions associated with IMF programs in Haiti and Ecuador squeezed the poor to such a point of desperation that massive riots occurred in the capital cities of each country. In Ecuador, rioting was so heightened that the capital city had to be temporarily moved to another location (Monahan, 2019). As the IMF modeling in the WEO 2020 indicates, the most optimal response to crises are investments in transitions that also provide ample social protections to those most affected (IMF, 2020a).

The IMF will have to align its lending programs toward climate resilient and carbon neutral economies and facilitate a transition away from carbon-intensive growth. The IMF may need to develop new financing windows, such as, but not limited to, the proposed Resilience and Sustainability Trust, through which balance of payments and fiscal support for climate efforts can also be channelled and complement financing from bilaterals and Multilateral Development Banks (MDBs). Low-cost or grant financing will be important, and special attention should be paid to financing and protecting those most adversely affected by adaptation and low-carbon transitions. Scaled-up action to avert, minimize and address impacts and loss and damage requires finance and dedicated financing mechanisms and allocations.

Five Principles to Guide IMF Climate Action

Through surveillance, advice and the lending toolkit, the IMF can integrate climate objectives with the achievement of the sustainable development goals, and at the same time, strengthen collaboration with other international organizations on approaches to increase productivity, diversify economies and foster job-creating inclusive growth. Reforming advice and programming would support its member states as they strive to identify and finance climate resilient development pathways post-pandemic.

While the aggregate benefits of a global transition may be positive, there will be numerous winners and losers in such a transition. For example, many fossil fuel commodity exporters rely on those exports as core sources of foreign exchange, the center of banking systems and for the bulk of government revenue. Behind every stranded asset due to climate change or climate policy will be stranded entrepreneurs, stranded contracts, stranded workers and stranded communities. For some countries that rely on a handful of fossil fuel-based commodities or whose industrialization depends on fossil energy and electricity, transition risks will jeopardize the engine of growth and foreign exchange for the entire economy and development trajectory.

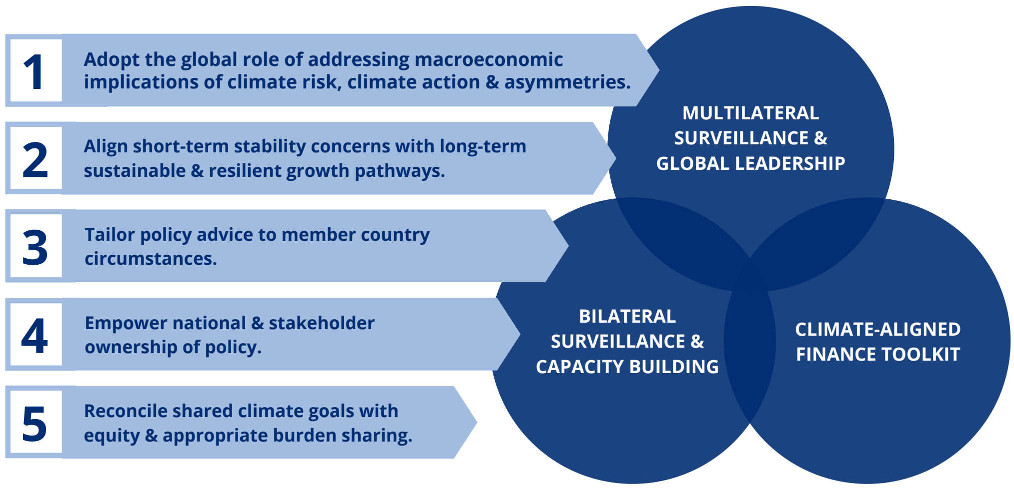
It is imperative that the IMF recognize this broader context, especially for emerging market and developing countries, and help member states identify the full magnitude of climate risks and mobilize the resources necessary to pursue a stable, sustainable and socio-economically optimal transition. The IMF will need to work in collaboration with countries to diversify their economies and financial systems away from fossil fuel exports and from those types of economic activity most vulnerable to risks associated with climate change. In addition to 'stress testing' fiscal and financial systems and helping countries design better systems as warranted, this will also entail reform of the IMF's lending toolkit (Krogstrup & Oman 2019).

Conscious of this broader context, the IMF has an important role to play in global policy coordination particularly when it comes to identifying and addressing cross-border spillovers that are arise when countries implement their national policies to tackle climate change. As the only rules-based, multilateral organization mandated to address global macroeconomic stability and growth, the IMF is uniquely positioned to help identify and address cross-border spillovers and vulnerabilities. Acting by themselves, national central banks and finance ministries do not have the global view or the capabilities to help foster a globally coordinated green transition that harnesses global opportunities while minimizing risks of macroeconomic disruption.

> *Behind every stranded asset due to climate change or climate policy will be stranded entrepreneurs, stranded contracts, stranded workers and stranded communities.*

The IMF can also play a major complementary role with other institutions to bolster the global response to climate change. One of the major strengths of the IMF is its in-house analytic capacity. The IMF's input will be vital for adjacent processes such at the Major Economies Forum and the UN Framework Convention on Climate Change as countries enhance and calibrate their climate responses. Analytic input will enable the Fund to have policy traction with major economies where there are no active IMF programs. Similarly, IMF advice and lending will also need to utilize the experience of MDBs the multilateral development banks in implementing climate change programs. The IMF will also need to identify how its work can have the most impact by working in together with these multilateral development banks, as well as identifying where the IMF's work and influence can be most impactful.

FIGURE 4: Five Guiding Principles and Three Essential Elements for Development-Centered Policy at the International Monetary Fund



Source: Compiled by the Task Force on Climate, Development and the International Monetary Fund.

As the IMF builds the three essential elements identified above in this report to support action on climate change, the Fund should be guided by five principles to ensure that its climate policies are development-centered and just (Figure 4):

1. **Adopt the global role in addressing the macroeconomic implications of climate risk, climate action and asymmetries.** The IMF is a global institution with the ability to survey and aggregate not only the national-level macro-critical risks and opportunities, but also how those risks and opportunities are manifest at the global level. The IMF is also central to identifying the positive and negative spillovers that arise as a result of climate change and climate change policy. It has the mandate to play a global leadership role on addressing the macro-critical aspects of climate change. The IMF's surveillance and advisory functions should be universal and evenhanded.

2. **Align short-term stability concerns with longer-term sustainable and resilient growth pathways.** Article 1 (ii) of the IMF's Articles of Agreement states that 'To facilitate the expansion and balanced growth of international trade, and to contribute thereby to the promotion and maintenance of high levels of employment and real income and to the development of the productive resources of all members as primary objectives of economic policy (IMF, 2020b).' However, over time, the operations of the IMF have increasingly focused on short-term fixes for macro-critical problems that have sometimes been

misaligned with longer-run development (Kentikelenis et al., 2019; Stubbs et al., 2021). As countries submit enhanced climate pledges and formulate their longer-term strategies to achieve net-zero emissions, the IMF must position itself to respond to these fundamental shifts through emergency financing, facilitating the mobilization of new investment and providing policy advice that can help countries pursue low carbon growth trajectories in a manner that best reflects national priorities.

3. **Tailor policy advice to member country circumstances**. The nature of climate change and the wide variety of structural differences among the economies of IMF members requires that the IMF avoid a 'one size fits all approach' to climate change and instead recognize varying circumstances among different countries. Fossil fuel producers and exporters, vulnerable SIDS and large emitters of greenhouse gases face different challenges. The spillover and national impacts of climate change and climate change policy, as well as the resource mobilization needs and targets of subsequent investments, will vary widely and require a wide battery of instruments and approaches.

4. **Empower national and stakeholder ownership of policy.** The IMF should partner with its member states and relevant stakeholders toward achieving climate transitions and work to avoid 'green conditionality.' The Paris Agreement places national actions (nationally determined contributions) at the heart of its approach in tackling climate change (Paris Agreement Article 4.2). Article 9.4 calls for scaled up climate finance 'taking into account country-driven strategies, and the priorities and needs of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change.' The IMF's strategy will need to reflect the centrality of national governments and stakeholders in devising responses that best reflect priorities and circumstances.

5. **Reconcile shared climate goals with equity and appropriate burden sharing.** Importantly, the principles of equity and fair burden sharing should form the centerpiece of climate action at the IMF. The principle of equity and common but differentiated responsibilities and respective capabilities, in light of national circumstances is a cornerstone principle under the UN Framework Convention on Climate Change. Developed countries are expected to 'take the lead' while developing countries are expected to move towards economy-wide emission reduction policies (Paris Agreement Article 4.4). More generally, the Paris Agreement also calls on developed countries to show leadership in mobilizing climate finance to enable climate action in the developing world (Paris Agreement Article 9.4). The IMF's role in facilitating global policy coordination will need to reflect the special responsibility that developed countries have in supporting developing economies decarbonize and build climate resilience.

Conclusion

As the only rules-based, multilateral organization mandated to address global macroeconomic stability and growth, the IMF is uniquely positioned to usher in and execute a critical part of the large-scale climate change policy for green, just transitions across the world. The IMF can help identify and address cross-border spillovers and vulnerabilities in a way that, acting by themselves, national central banks and finance ministries do not have the global view or capabilities to do. Rather, this is a moment to foster a globally coordinated green transition, harnessing opportunities while minimizing risks of macroeconomic disruption.

The Task Force on Climate, Development and the IMF looks forward to working with IMF member governments, management and staff, and the multitude of stakeholders working to align the financial system with climate and development goals. We will engage in a constructive dialogue through technical reports, policy dialogue and global communications to advance a development-centered approach to climate policy at the IMF.

Green, just transitions are critical, but no worker, entrepreneur or community should be left behind in the process. The IMF has an opportunity to help advance a more resilient and more equitable future.

Learn more about the Task Force on Climate, Development and the IMF at gdpcenter.org/TaskForce

References

Ackerman, F. 2017. "Worst-Case Economics: Extreme Events in Climate and Finance." London: Anthem Press.

Adrian, T., Morsink, J.& Schumacher, L. 2020. "Assessing Climate-Change Risk by Stress Testing for Financial Resilience." Washington.

Allen, T., Dees, S., Boissinot, J., Mateo, C.G.C., Valerie, C., Laurent, C., De Gaye, A., Devulder, A., Diot, S., Lisack, N., Pegoraro, F., Rabate, M., Svartzman, R., & Vernet, L. 2020. "Climate-Related Scenarios for Financial Stability Assessment: An Application to France." Bank of France, Working Paper Series 774.

Batini, N., Serio, M., Fragetta, M., Melini, G., & Waldron, A. 2021. "Building Back Better: How Big Are Green Spending Multipliers?" Washington: International Monetary Fund.

Batten, S., Sowerbutts R., & Tanaka, M. 2016. "Let's Talk About the Weather: The Impact of Climate Change on Central Banks." Bank of England Staff Working Paper No. 603.

Battiston, S. & Monasterolo, I., 2020. "The Climate Spread of corporate and sovereign bonds". Working paper, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3376218

Battiston, S., Mandel, A., Monasterolo, I., Schütze, F., Visentin, G. 2017. "A climate stress-test of the financial system." *Nature Climate Change* 7:283–288.

Baumeister, C., & Lutz, K. 2016. "Forty Years of Oil Price Fluctuations: Why the Price of Oil May Still Surprise Us." *Journal of Economic Perspectives*, 30 (1): 139-60.

Bhattacharya, A., Gallagher, K.P., Muñoz Cabré, M., Jeong, M., & Ma, X. 2019. "Aligning G20 Infrastructure Investment with Climate Goals and the 2030 Agenda." Foundations 20 Platform, a report to the G20. https://www.foundations-20.org/wp-content/uploads/2019/06/F20-report-to-the-G20-2019_Infrastrucutre-Investment.pdf.

Bhattacharya, A., Ivanyna, M., Oman, W., & Stern, N. 2021. "Climate Action to Unlock the Inclusive Growth Story of the 21st Century." IMF Working Paper WP/21/147.

Bullard, N. 2020, "Climate change puts insurers to the test." Bloomberg, June 29. Available at: https://bloom.bg/38lj1qJ

Caldecott, B. 2018. “Stranded Assets and the Environment: Risk, Resilience and Opportunity.” London: Routledge.

Campiglio, E., Dafermos, Y., Monnin, P., Ryan-Collins, J., Schotten, G., & Tanaka, M. 2018. “Climate change challenges for central banks and financial regulators.” *Nature Climate Change* 8:462–468.

Climate, Weather, and Catastrophe Insight. 2021. “Annual Report 2020.” http://thoughtleadership.aon.com/Documents/20210125-if-annual-cat-report.pdf

Dikau, S., & Volz, U. 2019. “Central Banking, Climate Change, and Green Finance.” *Handbook of Green Finance*, J. D. Sachs, W. T. Woo, N. Yoshino, & Taghizadeh-Hesary, F. (eds.), Singapore: Springer.

Dunz, N., Mazzocchetti, A., Monasterolo, I., & Raberto, M. 2021. “The macroeconomic and financial impact of compounding COVID-19 and climate physical risk.” Working paper presented at the World Bank research seminar 2020.

Gallagher, K., Ramos, L., Stephenson, C., & Monasterolo, I. 2021. “Climate Risk and IMF Surveillance Policy: A Baseline Analysis. Boston: Global Development Policy Center Working Paper.

IMF, 2017. “Chapter 3: The Effects of Weather Shocks on Economic Activity: How Can Low-Income Countries Cope?,“ World Economic Outlook, 2017, Washington: International Monetary Fund.

IMF. 2020. World Economic Outlook, October. Washington: International Monetary Fund.

IMF. 2020. “IMF Articles of Agreement.” Washington, International Monetary Fund, https://www.imf.org/external/pubs/ft/aa/index.htm

IMF, 2021, IMF Strategy to Help Members Address Climate-Related Policy Challenges: Priorities, Modes of Delivery, and Policy Implications, Washington, International Monetary Fund.

Jafino, B.A., Walsh, B., Rozenberg, J., & Hallegatte, S. 2020. “Revised Estimates of the Impact of Climate Change on Extreme Poverty by 2030.” Policy Research Working Paper No. 9417. World Bank, Washington, DC.

Joos, V. 2018. “Haiti’s deadly riots fueled by anger over decades of austerity and foreign interference.” The Conversation, https://theconversation.com/haitis-deadly-riots-fueled-by-anger-over-decades-of-austerity-and-foreign-interference-100209

Kentikelenis, A., T. Stubbs, & King, L. 2016. “IMF Conditionality and Development Policy Space,1985-2014.” *Review of International Political Economy* 23(4): 543–582.

Kling, G., Volz, U., Murinde V. & Ayas S. 2021. “The Impact of Climate Vulnerability on Firms’ Cost of Capital and Access to Finance.” *World Development* 137, 105131.

Krogstrup, S. & Oman, W. 2019, “Macroeconomic and Financial Policies for Climate Change Mitigation: A Review of the Literature.” IMF Working Paper. Washington, DC:

McGlade, C. & Ekins, P. 2015. “The geographical distribution of fossil fuels unused when limiting global warming to 2°C. *Nature* 517 (187-190).

Mercure, J. F., Pollitt, H., Viñuales, J. E., Edwards, N. R., Holden, P. B., Chewpreecha, U., & Knobloch, F. (2018). Macroeconomic impact of stranded fossil fuel assets. *Nature Climate Change 8*(7): 588-593.

Monahan, K. 2019. "Ecuador's fuel protests show the risks of removing fossil fuel subsidies too fast." The Conversation. October 31, 2019: https://theconversation.com/ecuadors-fuel-protests-show-the-risks-of-removing-fossil-fuel-subsidies-too-fast-125690

Monasterolo, I. 2020a. "Climate change and the financial system." *Annual Review of Resource Economics* 12, 1-22.

Monasterolo, I. 2020b, "Embedding Finance in the Macroeconomics of Climate Change: Research Challenges and Opportunities Ahead." CESIfo Forum, 4/2020, p.25-33.

Monasterolo, I., Gourdes, R, & Gallagher, K. 2021. "Modeling the Impacts of Climate Change Induced Transition Spillovers in Developing Countries: a Macro-financial Approach." mimeo. Boston: Global Development Policy Center Working Paper.

Network for Greening the Financial System (NGFS). 2020. "Guide to climate scenario analysis for central banks and supervisors." Central Banks and Supervisors Network for Greening the Financial System, Paris. https://bit.ly/3cXhBUP

NOAA. 2020. *State of the Climate: Global Climate Report for Annual 2019.* National Oceanic and Atmospheric Administration National Centers for Environmental Information. https://www.ncdc.noaa.gov/sotc/global/201913.

OECD. 2020. "Climate Finance Provided and Mobilized by Developed Countries in 2013-2018." https://doi.org/10.1787/f0773d55-en

Persuad, A. 2021. "Debt, natural disasters, and special drawing rights: A modest proposal." VOX EU, CEPR. https://voxeu.org/article/debt-natural-disasters-and-special-drawing-rights.

Pointner, W. & D. Ritzberger-Grünwald. 2019. "Climate change as a risk to financial stability." Financial Stability Report, Osterreichische Nationalbank (Austrian Central Bank), 38.

Ramos, Luma, & Gallagher, K.P. 2021. "Monitoring IMF Surveillance in the COVID-19 Era." Boston University, GDP Center Working Paper 043.

Sanderson, B.M., & O'Neill, B.C. 2020. "Assessing the costs of historical inaction on climate change." Scientific Reports 10 (9173). https://doi.org/10.1038/s41598-020-66275-4.

Stubbs, T., Kring, W., Laskaridis, C., Kentikelenis, A. & Gallagher, K. P. 2021. "Whatever it takes? The global financial safety net, Covid-19, and developing countries." *World Development* 137: 105-171.

Thomas, A. Baptiste, A. Martyr-Koller, R. Pringle, P. & Rhiney, K. 2020. "Climate Change and Small Island Developing States." *Annual Review of Environment and Resources* 45 (1-27).

UNCTAD. 2021. "A European Carbon Border Adjustment Mechanism: Implications for Developing Countries." Geneva, UNCTAD.

UNFCCC. 2015. "Paris Agreement." https://unfccc.int/sites/default/files/english_paris_agreement.pdf

United Nations Environment Programme. 2018. "Special Report: Global Warming of 1.5 C." Nairobi, UNEP.

Vermeulen, R., Schets, E., Lohuis, M., Kölbl, B., Jansen, D.-J., & Heeringa, W. 2019. "The Heat Is on: A Framework for Measuring Financial Stress Under Disruptive Energy Transition Scenarios." De Nederlandsche Bank Working Paper No. 625. http://dx.doi.org/10.2139/ssrn.3346466

Volz, U. 2020. "Climate-proofing the Global Financial Safety Net." mimeo, London: SOAS University of London.

Volz, U. & Ahmed, S. 2020. "Macrofinancial Risks in Climate Vulnerable Developing Countries and the Role of the IMF – Towards a Joint V20-IMF Action Agenda". London, Rotterdam, and Bonn: SOAS Centre for Sustainable Finance, Global Center on Adaptation, and Munich Climate Insurance Initiative.