

Macrofinancial Risks in Climate Vulnerable Developing Countries and the Role of the IMF

TOWARDS A JOINT V20-IMF ACTION AGENDA

October 2020



Centre for
Sustainable Finance
SOAS University of London



GLOBAL
CENTER ON
ADAPTATION



This paper was prepared for the V20 to support the development of a V20-IMF Joint Action Agenda on Transition Risks and Climate-related Financial and Fiscal Stability and supported through the Munich Climate Insurance Initiative project “Support for the InsuResilience Global Partnership (Climate Risk Insurance) – Phase IV” funded by the InsuResilience Secretariat (GIZ) on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). The views and opinions expressed in this paper are those of the authors and do not necessarily reflect the understanding of the InsuResilience Secretariat, or the policy and position of the BMZ.

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Acknowledgements

We gratefully acknowledge the very helpful support and insights we received from the following individuals: Maria Socorro Gochoco-Bautista, Carter Brandon, Melissa Brown, Renato Redentor Constantino, Toby Monsod, Alexandra Rosas, Viktoria Seifert, and Fleur Wouterse. We are also grateful to numerous officials at finance ministries and central banks of V20 countries and at the IMF for sharing their views and insights. The views expressed in this report are those of the authors and should not be attributed to any of the aforementioned or the organisations they are affiliated with.



Acronyms

CCF	<i>Convertible Concessional Finance</i>
CDRFI	<i>Climate and Disaster Risk Finance and Insurance</i>
CCL	<i>Contingent Credit Line</i>
CCRT	<i>Catastrophe Containment and Relief Trust</i>
CVF	<i>Climate Vulnerable Forum</i>
DC	<i>Development Committee</i>
DSSI	<i>Debt Service Suspension Initiative</i>
ECA	<i>Export Credit Agency</i>
ESG	<i>Environmental, Social and Governance</i>
GDP	<i>Gross Domestic Product</i>
G-20	<i>Group of Twenty Finance Ministers and Central Bank Governors</i>
G-24	<i>Intergovernmental Group of Twenty-Four on International Monetary Affairs</i>
HIPC	<i>Heavily Indebted Poor Countries</i>
IAIA	<i>International Association of Insurance Supervisors</i>
IMF	<i>International Monetary Fund</i>
IMFC	<i>International Monetary and Financial Committee</i>
IPP	<i>Independent Power Producers</i>
LIC	<i>Low Income Country</i>
MDRI	<i>Multilateral Debt Relief Initiative</i>
MSME	<i>Micro, Small, and Medium-sized enterprises</i>
NDC	<i>Nationally Determined Contribution</i>
ND-GAIN	<i>Notre Dame Global Adaptation Initiative</i>
NGFS	<i>Network for Greening the Financial System</i>
NPL	<i>Non-Performing Loan</i>
PRGT	<i>Poverty Reduction and Growth Trust</i>
RCF	<i>Rapid Credit Facility</i>



RFI	<i>Rapid Financing Instrument</i>
SDR	<i>Special Drawing Rights</i>
SIDS	<i>Small Island Development State</i>
SOE	<i>State-owned enterprises</i>
TCFD	<i>Task Force on Climate-related Financial Disclosures</i>
USD	<i>United States (of America) Dollars</i>
V20	<i>Vulnerable Group of Twenty Ministers of Finance of the Climate Vulnerable Forum</i>



Executive Summary

Climate vulnerable countries face considerable macrofinancial risks that threaten debt sustainability, worsen sovereign risk, and harm investment and development prospects. This paper reviews the macrofinancial implications and risks of climate change, in particular the impacts of climate vulnerability on sovereign risk and the cost of capital, with special consideration to challenges facing the V20, a group of 48 climate vulnerable countries that are home to 1.2 billion people. It also examines the International Monetary Fund (IMF)'s responsiveness to these challenges to date and recommends ten initial areas for a joint V20-IMF Action Agenda.

The IMF can play an important role in supporting climate vulnerable countries in mitigating and managing macrofinancial risks stemming from the physical and transition impacts of climate change, leveraging opportunities from climate policies to boost growth, investment and resilience. While the IMF's attention to climate issues has increased markedly, including through research produced by IMF staff, the Fund has been rather slow to address climate-related financial risks in its operational work, comprised of surveillance, technical assistance and training, and emergency lending and crisis support.

A non-representative survey among finance ministries and central banks of V20 countries indicates the desire for more support from the IMF in addressing climate risks and vulnerabilities. The views expressed by V20 members suggest that the IMF should integrate climate risk analysis in its surveillance activities, including Article IV consultations as well as Financial Sector Assessment Program assessments and Debt Sustainability Framework analysis conducted with the World Bank; scale up technical support; and explore options for developing its toolkit for climate emergency financing.

To address the needs of climate vulnerable economies and support them in building resilience through improved mitigation and management of climate-related macrofinancial risks and enhanced conditions for critical investments in adaptation and development, this paper suggests ten potential action areas for a joint V20-IMF Action Agenda:

i Mainstreaming systematic and transparent assessments of climate-related financial risks in all IMF operations

In order to better anchor and inform its policy work, the IMF can start integrating climate-related financial risks assessments across all of its operations, building on the increasing availability and sophistication of science-based climate financial risk metrics and methods such as climate stress-testing and climate-financial pricing models.

ii Consistent, systematic, and universal appraisal and treatment of physical climate risks and transition risks for all countries in Article IV consultations and Financial Sector Assessment Programs

To facilitate better management and mitigation of macrofinancial risks and enhance

the recognition of such risks in governments and the financial sector, the IMF can include a mandatory section on climate risks in its Article IV consultations with all member countries. The IMF could also introduce a mandatory section on climate-related financial risks to the Financial Sector Assessment Programs it conducts with the World Bank.

iii Advancing disclosure of climate-related financial risks and promoting sustainable finance and investment practices

To support the development of financial markets that facilitate climate-friendly private sector investment, the IMF can use its unique role in international finance to promote the disclosure of climate-related financial risks and the development of sustainable finance and investment practices.

iv Exploring synergies between fiscal and monetary policies

To support its membership, and particularly climate vulnerable countries, in building resilience while scaling up investments to achieve climate targets, the IMF could explore synergies between fiscal and monetary policies as well as macroprudential regulations to identify an optimal policy mix that would enhance finance for development oriented towards just transition outcomes while improving economic competitiveness and ensuring macrofinancial stability.

v Mainstreaming of climate risk analysis in public financial management and supporting the development of a climate disaster risk financing and insurance architecture

To support countries in climate-proofing public finances and strengthening their public debt management, the IMF can encourage and provide advice to finance ministries on how to analyse the potential impacts of climate change on the medium- to long-term quality and sustainability of public finances and mainstream climate risk analysis in public financial management. The IMF can also support the development of an international climate disaster risk financing and insurance architecture that addresses different layers of risks. It can also promote a discussion around adding natural disaster clauses to sovereign debt contracts and the use of instruments such as GDP-linked bonds.

vi Supporting climate vulnerable countries with debt sustainability problems

To address debt sustainability challenges, the IMF could explore options for the treatment of climate debt, i.e. public debt that has been incurred as a direct result of climate disasters or necessary adaptation measures. Moreover, the joint World Bank-IMF Debt Sustainability Framework for Low-Income Countries could be enhanced by a mandatory analysis of the impact of climate-related risks on debt sustainability. Such assessments could also be rolled out to climate vulnerable middle income countries.

vii Developing the IMF toolkit for climate emergency financing

To support vulnerable countries, the IMF could further develop the IMF's existing emergency financing facilities through raising access under the RCF/RFI, or converting these facilities into grants, particularly for PRGT-eligible countries. The IMF could also consider the establishment of an entirely new climate emergency facility.

viii Exploring options to use Special Drawing Rights (SDRs) to support climate vulnerable countries

To provide vulnerable countries with enhanced liquidity, the IMF could consider the possibility of allocating new SDRs or encourage advanced countries, whose historic carbon emissions are the main cause of anthropogenic climate change, to make their SDRs available to a new multilateral swap facility or donate their SDRs to a trust fund at the IMF. A further option would be to develop a mechanism where new SDRs are issued exclusively to climate vulnerable countries hit by climate disasters.

ix Supporting the design and implementation of carbon pricing mechanisms

To support V20 countries in re-directing investment towards climate resilient and low-emissions development while stimulating technological innovation and generating new revenue streams for governments, the IMF could support V20 countries in strengthening their fiscal framework and revenue outcomes through the design and implementation of appropriate carbon pricing mechanisms.

x Institutionalising collaboration between the Fund and the V20

To enhance vulnerable developing country voices and representation, and to provide a platform to articulate their views and interests, the IMF should recognise the V20 as an official stakeholder and hold regular consultations with the V20.

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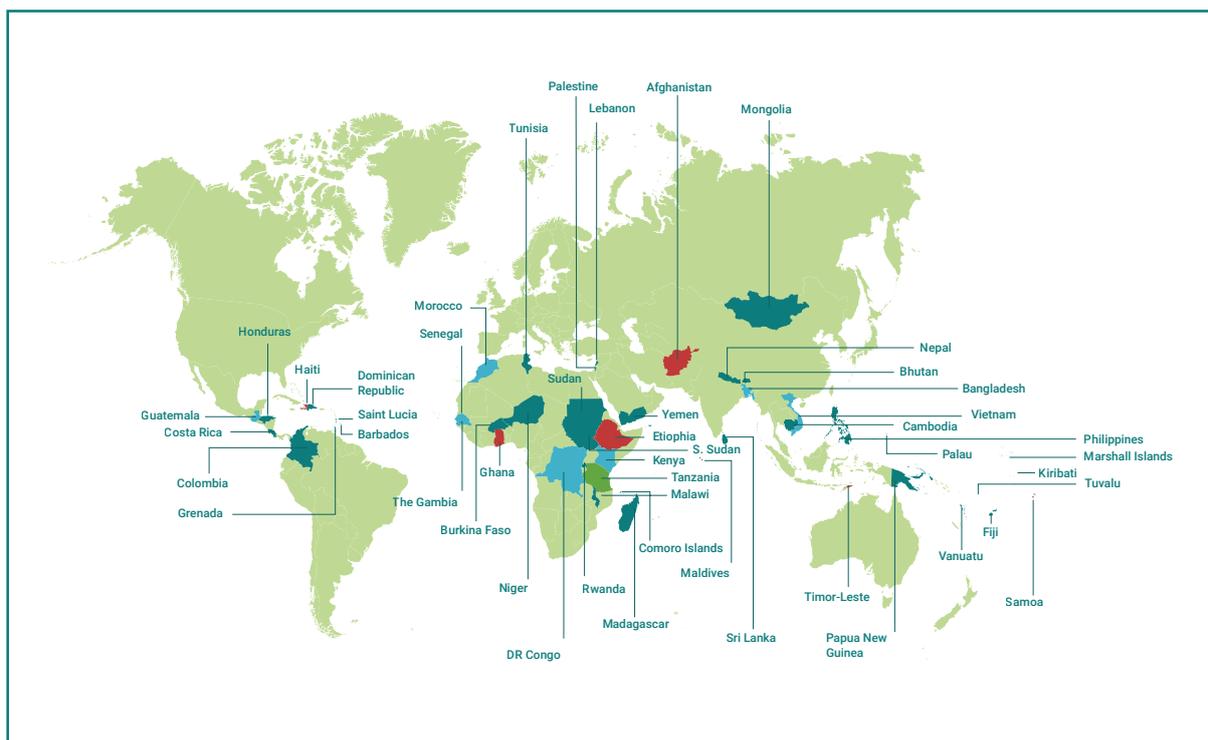
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1. Introduction

Climate vulnerable countries are not only exposed to the physical effects of anthropogenic climate change. They also face transition risks stemming from the move away from fossil fuels to low-carbon sources of energy. Both transition and physical risks can generate considerable macrofinancial risks that can undermine debt sustainability and worsen sovereign risk. This has implications on the cost of capital of private and sovereign debt and the fiscal space governments have for crucial investments in climate adaptation and resilience and for sustainable development.

The Vulnerable Twenty (V20) Group of Ministers of Finance, representing 48 developing countries, was founded in 2015 by the Climate Vulnerable Forum. Its goal is to translate the political agenda for climate into real economy progress while mobilising international support for scaling up financial resources for climate action in V20 states. In November 2020, the first V20 Ministerial Dialogue with the International Monetary Fund (IMF) will explore the components of a “Joint Action Agenda”. The IMF has increasingly recognised the macro-criticality of climate change and started to strengthen its analytical capacity in this area. The objective of this paper is to inform the formulation of the Joint Action Agenda by identifying actions through which the Fund could better address the needs of climate vulnerable economies and support them in building resilience through better mitigation and management of climate-related macrofinancial risks and improving conditions for critical investments in adaptation and development.

Figure 1: World map with V20 countries



This paper suggests ten potential action areas for a joint V20-IMF Action Agenda: (i) mainstreaming systematic and transparent assessments of climate-related financial risks in all IMF operations; (ii) consistent, systematic, and universal appraisal and treatment of physical climate risks and transition risks for all countries in Article IV consultations and Financial Sector Assessment Programs; (iii) advancing disclosure of climate-related financial risks and promoting sustainable finance and investment practices; (iv) exploring synergies between fiscal and monetary policies; (v) mainstreaming of climate risk analysis in public financial management and supporting the development of a climate disaster risk financing and insurance architecture; (vi) supporting climate vulnerable countries with debt sustainability problems; (vii) developing the IMF toolkit for climate emergency financing; (viii) exploring options to use Special Drawing Rights to support climate vulnerable countries; (ix) supporting the design and implementation of carbon pricing mechanisms; and (x) institutionalising collaboration between the Fund and the V20.

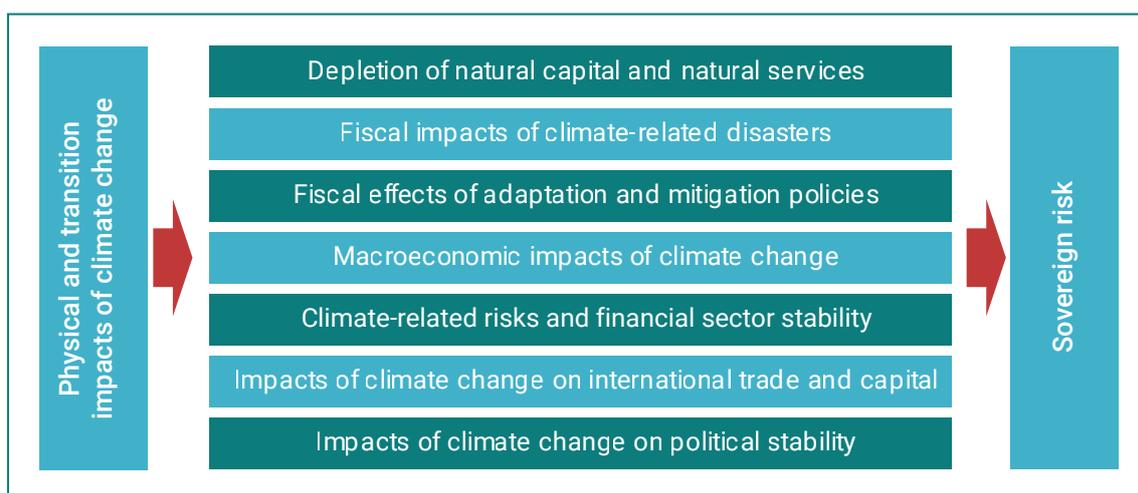
The paper is structured as follows: Section 2 reviews the macrofinancial implications and risks of climate change and highlights the implications of climate change for the cost of capital in climate vulnerable countries. Section 3 provides a brief overview of the macroeconomic conditions in and debt sustainability of V20 countries. Section 4 examines the IMF's current stance and the adequacy of policy frameworks relating to climate change. Section 5 presents insights from a survey of V20 finance ministries and central banks relating to the role of the IMF in addressing climate risks. Section 6 discusses options for a V20-IMF Action Agenda. Section 7 concludes.

2. The macrofinancial implications and risks of climate change

2.1 Impacts of climate change on sovereign risk¹

Climate change can affect an economy and public finances – and thus debt sustainability – in multiple ways. Volz et al. (2020) identify seven different transmission channels through which climate change can distress public finances and amplify sovereign risk (Figure 2). Besides the impacts of climate change on natural capital and natural services, which will not be discussed here,² these transmission channels are: (i) fiscal impacts of climate-related disasters; (ii) fiscal effects of adaptation and mitigation policies, (iii) macroeconomic impacts of climate change, (iv) climate-related risks and financial sector stability, (v) impacts of climate change on international trade and capital flows, and (vi) impacts of climate change on political stability.

Figure 2: Transmission channels of risk



Source: Volz et al. (2020).

(i) Fiscal impacts of climate-related disasters

Climate-related disasters such as cyclones, floods, wildfire, storms and drought can have significant direct impacts on public finances. Government finances and a country's debt sustainability are exposed to different fiscal risks related to natural disasters or climate change-related shocks. The IMF classifies fiscal risk into two categories: macroeconomic risks and specific fiscal risks, which may "arise from the realization of contingent liabilities or other uncertain events, such as a natural disaster, the bailout of a troubled public corporation or subnational government by the central government, or the collapse of a bank" (IMF 2018: 95). Explicit contingent liabilities

¹ This section draws on Volz et al. (2020).

² All economic activity, and hence a country's economic and fiscal sustainability, is ultimately dependent on natural assets and eco-services. Climate change is expected to have dramatic and adverse effects on natural capital, even with the achievement of the mitigation goals of the Paris Agreement. Climate change will exacerbate the existing degradation of the natural environment and further diminish natural capital. For a detailed discussion, see Volz et al. (2020).

include public guarantees and other legal or contractual liabilities. Implicit contingent liabilities are not established by law or contract but may arise because of public expectations or a necessity for the government to intervene, for example in the context of public bailouts or spending on natural disaster relief, recovery and reconstruction, including increased social transfer payments (IMF 2011, 2018, Hochrainer-Stigler et al. 2018, Schuler et al. 2019). Disaster crisis response measures can have significant impact on public spending. Bova et al. (2019)'s analysis of contingent liability realisations in a sample of 80 advanced and emerging economies for the period 1990-2014 shows that natural disasters (including geophysical events) are one of the most important sources of contingent liabilities, the realisation of which can be a substantial source of fiscal distress. Moreover, a disruption of economic activity by climate-related disasters may cause supply or demand shocks and adversely affect tax income and other public revenues, or cause changes to commodity prices that could affect revenue or increase public spending via fossil fuel or food subsidies. Table 1 provides an illustration of the disruption caused by a single climate disaster, Typhoon Haiyan, which hit the Philippines in 2013.

Table 1: Typhoon Haiyan (Yolanda) in the Philippines: Losses and government

Number of affected municipalities	591
Confirmed deaths	6300
Missing persons	1602
Injured persons	28,688
People affected	14.1 million
Displaced persons	4.1 million
Houses damaged	1.1 million
Livelihoods affected	5.9 million
Structures totally or partially damaged	1.14 million
Economic damage	USD 12.9 billion
Needed budget for recovery	USD 8.2 billion

Impacts to MSMEs	According to DTI, there were about 50,000 MSMEs that were affected by the Super Typhoon. Around 90% of the disaster impact was borne by the private sector, especially the private households and the SMEs.
Recovery time	Minimum 2 years
Government intervention	<p>The Philippines has various disaster risk financing windows: (1) the National DRRM Fund (NDRRMF) or the Calamity Fund in the General Appropriations Act (GAA); (2) the Local DRRM Fund (LDRRMF); (3) the Government Service Insurance System (GSIS); and (4) the People’s Survival Fund (PSF). The Philippines’ central bank implemented some policy decisions to facilitate credit flow in the wake of Typhoon Yolanda such as:</p> <ul style="list-style-type: none"> ● Extension of the depreciation period for writing off bad loans to ease banks’ cash position and improved credit flow. ● Allowed extension of the existing loans without classifying them as restructured loans and extending the period over the usual 30 days, both of which have reduced banks’ risk assets and increased their lending capacity.

Sources: Compiled based on information from Athaves (2018), NDRRMC (2013), PSA (2014), and The Manila Times (2014).

(ii) Fiscal effects of adaptation and mitigation policies

Adaptation and mitigation policies are indispensable for responding to the challenges posed by climate change. Moreover, economies need to invest in adaptation and resilience to address vulnerabilities from extreme weather events and slow onset events, which are expected to increase in number and intensity with impacts happening sooner than forecasted due to global warming. The Global Commission on the Economy and Climate (2016) estimates that globally until 2030 around USD 90 trillion will have to be spent on infrastructure, including energy, all of which needs to be sustainable and climate resilient. While parts of these investments have to be financed by the private sector, governments will have to play an important role in setting the right incentives through policies such as carbon prices/taxes, border adjustments and prudential frameworks for financial institutions, as well as market structures and system design to include variable renewable energy and pricing of grid and non-grid

services. Moreover, a considerable share of adaptation and mitigation measures will have to be directly financed by the public sector.

Public adaptation to climate change affects public budgets directly on the expenditure side (e.g. Bachner et al. 2019). Adaptation costs comprise all expenses associated with policies and measures aimed at easing environmental, social, and economic impacts of climate change, both preventive and remedial (Forni et al. 2019). The 2016 Adaptation Finance Gap Report estimates the costs of adaptation at between USD 140 billion and USD 300 billion per year by 2030, and between USD 280 billion and USD 500 billion per year by 2050, with potentially higher costs for worse emission pathways (Puig et al. 2016). However, Neufeldt et al. (2018) point to the existence of major information gaps and emphasise that particularly the omission of adaptation cost estimates for biodiversity and ecosystem services is likely to further increase the overall cost of adaptation. Despite the dividends generated by adaptation investment (Hallegatte et al. 2019, Tanner et al. 2015), including reduced future losses and positive economic benefits through reduced risks, adaptation finance in 2016 amounted to only USD 22 billion (Oliver et al. 2018).

Mitigation costs comprise all expenses associated with policies and efforts aimed at reducing or preventing greenhouse gas emissions to limit global warming (Forni et al. 2019). Climate change mitigation will require substantial investment in low-carbon sources of energy. The IPCC (2018) estimates that USD 1.6-3.8 trillion are annually needed for investment in energy systems alone to limit global warming to 1.5°C. While recent years have seen a rapid fall in the cost of low-carbon energy generation and storage that provide an opportunity to recalibrate towards cost-effective technology,³ there is a risk that the necessary investments overstretch public finances and that opaque and complex financing practices lead to higher debt burdens than expected.

(iii) Macroeconomic impacts of climate change

The physical and transition impacts of climate change can cause aggregate supply and demand shocks. Supply shocks affect an economy's production or productive capacity and, accordingly, actual or potential output. Climate change may impact aggregate supply in various ways (e.g. Coëure 2018, Batten et al. 2020). Extreme weather events can interrupt production and service delivery, damage the capital stock and infrastructure, or diminish output in the agriculture, forestry, and fishing industry. They can also disrupt transport routes and value chains and cause input shortages. Natural disasters may divert resources from innovation to reconstruction and replacement or cause shocks to local labour markets.

Supply shocks can also be caused by gradual global warming. Climate change is predicted to have significant impact on land use through sea level rise, desertification, land degradation, among others (IPCC 2019a), as well as on marine ecosystems (IPCC 2019b). All these can affect productive assets and capacity in agriculture, forestry,

³ According to the International Renewable Energy Agency (IRENA), the price of solar has fallen 82% since 2010 and 13% between 2018 and 2019, while the price of concentrated solar power has fallen by 47%, onshore wind by 39% and offshore wind by 29%. Both onshore and offshore wind prices have fallen by 9% between 2018 and 2019. The deflationary trend in renewable energy means that replacing the costliest 500 gigawatts of coal capacity with solar and wind would cut annual system costs by up to USD 23 billion per year and yield a stimulus worth USD 940 billion, or around 1% of global GDP (IRENA 2020).

fishing and other industries directly relying on ecosystems. Further, the need for investment in adaptation may divert resources away from productive investment or spending on new technologies, although adaptation investment could also spur innovation. Climate change could also have substantial effects on the number of hours worked due to extreme heat and on labour productivity (e.g. Burke et al. 2015, Day et al. 2019).⁴ For climate vulnerable countries, the economic cost of reduced productivity due to heat stress may be more than USD 2 trillion by 2030 (UNDP 2016). Furthermore, alterations in the physical environment could make living conditions in some regions unbearable and cause large-scale migration, which would affect labour supply.

Supply-side shocks can also be caused by transition impacts (McKibbin et al. 2017). The structural change of an economy away from high-carbon and towards low-carbon sectors can cause a stranding of assets and technology and render parts of the workforce unemployed if the sectors they were previously employed in cease and skills are not transferrable (Bos and Gupta 2019, Semieniuk et al. 2020). Moreover, climate policies may constrain the use of land or ecosystem services with impacts on an economy's output potential. Falling costs of renewable energy and storage interacting with climate policies could also lead to substantive changes in energy supply.

Climate change impacts can also cause demand-side shocks (Batten et al. 2020). Extreme weather events can reduce household income and wealth and therefore private consumption or affect international demand for goods and services. Furthermore, damages to corporate balance sheets can lead to a reduction of investment. However, after the initial stage of loss, natural disasters are typically followed by a period of recovery, in which the rebuilding of infrastructure and production sites and the replacement of stocks gives a temporary boost in investment and consumption (IMF 2016). A negative demand shock is more likely when a large share of losses is uninsured (Batten et al. 2016). Furthermore, slow-onset changes to global warming can lead to structural economic changes, which may impact on aggregate demand through effects on household income (e.g. income from farming or fishery), wealth effects (e.g., through changes in property prices), effects on corporate balance sheets, or effects on public finances. Global warming may also impact on investment through effects on household and corporate balance sheets.

(iv) Climate-related risks and financial sector stability

Extreme weather events and chronic physical risks such as worsening water stress or sea level rise can result in damage or loss of operating assets and reduce production output of borrowers. Such impacts can, in turn reduce borrowers' operating margins and cash flows and the value of collateral assets, leading to credit downgrades, a higher probability of default and a reduction in the secondary market value of loans held on bank balance sheets. In more severe situations, borrowers will not be able to meet their debt service obligations, resulting in a higher incidence of non-performing loans (NPLs) and a higher loss given default due to the reduced value of collateral assets.

⁴ The International Labour Organization estimated that heat stress (i.e. temperatures above 35 degrees Centigrade) may cause productivity loss equivalent to 80 million full-time jobs by 2030 (ILO 2019).

Climate risks related to policy, technology and market changes may also have a negative impact on borrowers' credit profile by stranding production assets and/or reducing demand for their products and services (Box 1). These impacts can reduce the profitability and cash flows of businesses as well as the value of assets held as collateral by banks. These could result in credit downgrades, higher incidence of NPLs as well as higher losses given default.

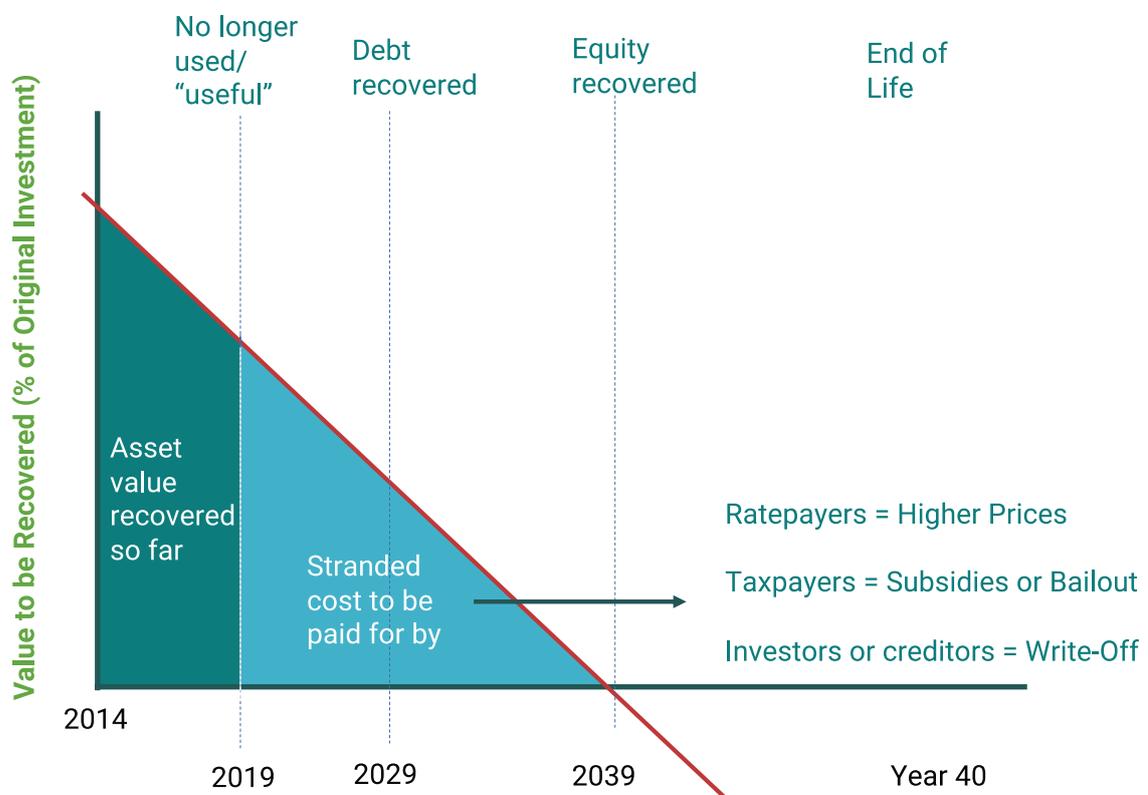
It is now widely recognised that climate change poses a material risk to financial stability. Financial instability can worsen sovereign risk. Governments may be forced to bail out the financial sector, which could weaken the sovereign balance sheet and trigger a negative feedback loop, which further weakens the credit profile of banks due to their exposure to sovereign debt (Farhi and Tirole 2018).

In several large V20 developing countries, public banks play a major role in the financial system. For example, in Ethiopia public banks account for about 60% of the country's banking system, while the share of public banks is 45% in Vietnam and 30% on Bangladesh (IMF, 2020g). Contingent liabilities from publicly owned banks could become a major problem for public finances if these banks suffer losses due to the materialisation of climate risks.

Box 1: Stranded Asset Risk

Fossil fuel lock-in has left many developing countries with high subsidies and/or prices due to progressive non-performing fossil fuel asset risk. This stranded-asset risk can be triggered by a number of causes, including (1) fuel and/or technology becoming uneconomical or obsolete due to competition from cheaper alternatives, (2) grid design problems that result in dispatch problems for poorly located power plants, (3) excess capacity due to inaccurate demand forecasts or a surplus of reserve power, (4) higher than anticipated construction costs, (5) operational inefficiency of the power plant often due to substandard maintenance, and (6) long-term contracted-fuel supply exceeding demand.

While the energy transition is assumed to trigger higher costs, it is important to realise that non-performing fossil fuel stranded assets today are already being paid for by end users, taxpayers, investors, creditors, or some combination of all four. The solution to this starts with solid policies to encourage energy transition that can change the generation mix and permit the deflationary nature of renewable energy and storage



technologies to insulate the system from future non-performance and stranding. So, when badly designed power market policies increase the plant life of underperforming fossil fuel assets with guaranteed contracts, it will translate to further costs in the form of higher electricity prices paid for by end users, write-offs by investors, non-performing loans for creditors, and/or subsidies/bailouts from government, which is ultimately paid for by taxpayers.

Due to the way that the project economics of fossil fuel IPPs deteriorate in the face of new cost-competitive technologies, the more that countries delay modernisation of their power sector, the greater the cost of displacement. This means an increase in the likelihood of fossil fuel asset stranding rises, resulting in higher non-performing loans, write-offs, and subsidies/bailouts. While the transition makes economic and financial sense, the key is to buy down the cost and the speed of this transition.

Source: Ahmed (2020).

(v) Impacts of climate change on international trade and capital flows

Climate change can have substantial impacts on an economy's trade in goods and services and capital flows with the rest of the world, and therefore their balance of payment. Historically, balance of payments problems were often at the root of country risk and led to external debt crises (Bouchet et al. 2018).

There are several ways through which climate change could affect the patterns and the volume of international trade flows, with potentially significant impacts on countries' balance of payments positions and, ultimately, sovereign risk. Impacts can be grouped in three categories: disruptions to trade from climate-related extreme events and disasters; long-term effects of global warming on endowments and production; and transition impacts on international trade.

First, climate-related extreme weather events could cause physical damages and disruptions to production facilities and critical transport infrastructure, and make industrial supply, transport and distribution chains more vulnerable. Climate change could lead to permanent changes to trade-production networks and transport routes and change country's access to and opportunities in international trade, with particularly detrimental effects for developing economies (WTO and UNEP 2009). Empirically, evidence suggests that natural disasters diminish exports, while the effects on imports are ambiguous (e.g. Gassebner et al. 2010).

Second, the physical effects of gradual global warming could affect domestic agricultural and manufacturing output in various ways through changes in endowments and production, with potential impacts on an economy's export capacity and import needs. Climate change could also have significant impact on international tourism, which often relies on natural assets and pleasant and safe climatic environments, and which for many developing countries constitutes an important services export in the balance of payments.

Third, climate policies adopted by trading partners, technological change and changes to consumption patterns could have significant impact on imports or exports. If major economies adopted forceful measures to curb carbon emissions, including a decarbonisation of their energy and transport systems, this would have significant repercussions on global demand for fossil fuels and their prices (e.g. Huxham et al. 2019). Countries that are currently dependent on fossil fuel imports may be able to substitute these with domestic renewable energy while fossil fuel exporters would stand to lose a source of revenue.

Gains and losses from physical and transition impacts of climate change on international trade volumes and patterns will be distributed unevenly across countries. Economies that are strongly dependent on carbon-intensive exports and little diversified export sectors are particularly at risk, as are climate vulnerable economies in geographies with relatively high average temperature. Commodity-dependent developing countries may be particularly at risk. UNCTAD Secretary-General Mukhisa Kituyi describes climate change as an "existential threat to commodity-dependent developing countries" (UN News 2019).⁵

⁵ According to UNCTAD (2019), all of the ten most climate vulnerable countries in 2017 were commodity-dependent developing countries, while only three of the 40 most climate vulnerable countries were not reliant on commodity exports.

(vi) Impacts of climate change on political stability

Economic and social effects of climate change may also accentuate social tensions within a society and fuel political instability (Islam and Winkel 2017). Moreover, climate shocks can trigger migration movements which could also lead to political tensions or even inter- or intrastate conflicts (Froese and Schilling 2019). Political instability can undermine the ability or willingness of a government to repay its debt. For instance, Clark (1997) emphasises the potential impact of political events on the probability of sovereign default. Countries that are politically unstable and more polarised often have higher default rates and are as a result charged a higher default risk premium in international credit markets (Cuadra and Saprizza 2008).

2.2 Climate change and the cost of capital

The first study to systematically analyse the impact of climate change on the cost of sovereign capital is Kling et al. (2018), the results of which feed into Buhr et al. (2018). Using annual data for a sample of 46 countries – including 25 V20 countries – over the period 1996 to 2016, their results indicate that climate vulnerable countries have to pay a risk premium on their sovereign debt because of their climate vulnerability. In particular, they estimate that vulnerability to climate change has already raised the cost of debt by 117 basis points on average for the sample of 25 V20 countries, translating to more than USD 40 billion in interest payments on government debt alone for 40 member countries of the V20. Incorporating higher sovereign borrowing rates into the cost of private external debt, the figure reaches USD 62 billion across both the public and private sectors.

In a related study, Kling et al. (2020) use firm-level data of 15,265 firms in 71 countries over the period 1999 to 2017 and find that climate vulnerability increases cost of debt directly and indirectly through its impact on restricting access to finance. Controlling for various firm-specific and macroeconomic factors, their results suggest that the direct effect of climate vulnerability on the average increase in cost of debt from 1991 to 2017 has been 0.63%, while the indirect effect through climate vulnerability's impact on financial leverage has contributed an additional 0.05% increase in the cost of financing.

Cevik and Tovar Jalles (2020) replicate the analysis by Kling et al. (2018), using the same measures for climate change vulnerability and resilience for 98 advanced and developing countries over the period 1995 to 2017. Like Kling et al., they find that the vulnerability and resilience to climate change have a significant impact on the cost government borrowing, after controlling for conventional determinants of sovereign risk. They also confirm that the magnitude and statistical significance of these effects are much greater in developing countries with weaker capacity to adapt to and mitigate the consequences of climate change.

Building on Kling et al. (2018), Beirne et al. (2020a) examine the relationship between the cost of sovereign borrowing and climate risk with quarterly data for 40 advanced and developing economies for the period 2002 to 2018, using more refined measures for climate vulnerability and resilience. Their results show that both vulnerability and resilience to climate risk are important factors driving the cost of sovereign borrowing

at the global level, supporting the original findings of Kling et al. (2018). With 275 basis points, the premium on sovereign bond yields from rising climate risk vulnerability is highest for a sub-sample of the “high risk group”, which comprises 10 countries, compared to an increase of 113 basis points for other developing and emerging market economies. The effect of vulnerability on bond yields for advanced economies is not statistically significant.

Beirne et al. (2020b) empirically tests the link between climate risks and sovereign risk in Southeast Asia, one of the world’s most heavily affected regions in terms of climate change. They conduct analysis both country-specific and panel estimations with monthly data for the period 2002 to 2018 for six Southeast Asian countries. Both the country-specific and the panel results show that greater climate vulnerability appears to have a sizable positive effect on sovereign bond yields, while greater resilience to climate change has an offsetting effect, although on a smaller magnitude. The effects tend to be the largest for countries that are more climate vulnerable.

Table 2 shows the comparatively high cost of capital of selected V20 member countries. There is a risk that the already high cost of capital currently impeding development in the majority of climate vulnerable economies will rise further due to the worsening impacts of climate change on their economies over the next decades.

Table 2: The V20’s comparatively High Cost of Capital Economic Environment

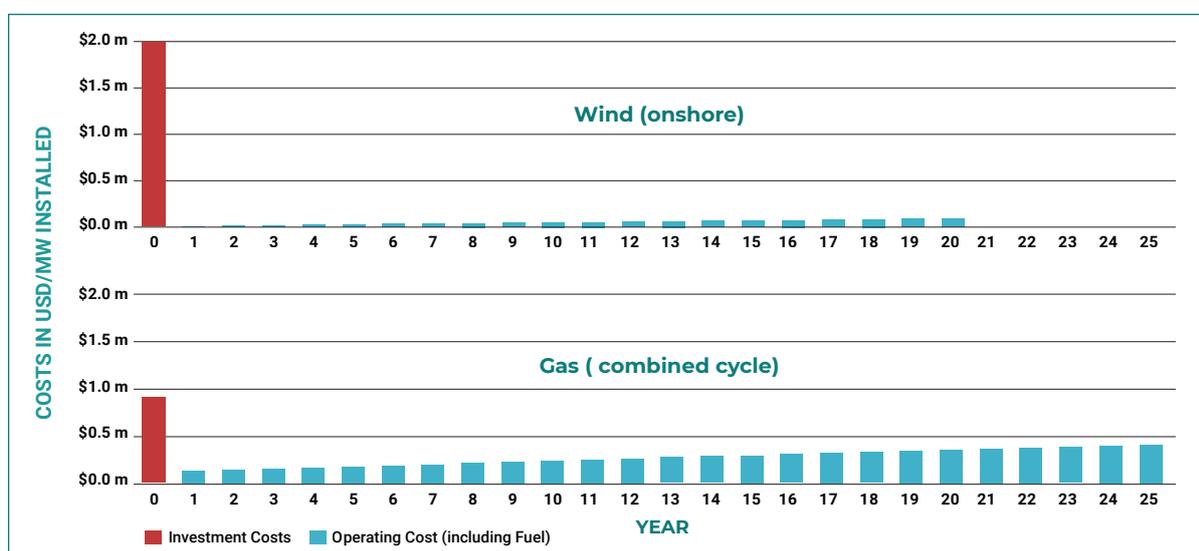
Average real interest rates, 2015-17		V20 real interest rate spikes, 2015-17	
V20	9.2%	Madagascar	48%
G20	5.7%	The Gambia	23%
G7	1.83%	Malawi	22%

Source: International Monetary Fund, International Financial Statistics and World Bank (GDP deflator)⁶

The cost of capital has far-reaching implications for the viability of investments and development prospects of countries. The financing of adaptation infrastructure projects, such as climate-resilient roads or coastal defences, requires a high proportion of capital in their first phase. Likewise, renewable energy projects, which have comparatively low operating cost since energy fuel is derived from naturally available sources, require high upfront investments, which makes financing much more sensitive to the cost of capital. In contrast, for fossil fuel energy projects operational costs are more significant than the capital investment needed to commence project operations (Figure 3). Fossil fuel projects like gas and coal are therefore relatively insensitive to the cost of capital compared to renewable energy projects, such as hydro, wind, solar, geothermal. For example, the investment cost required upfront is 80% of total cost of electricity generation from wind energy while the upfront investment cost for gas is only 15%.

⁶ Average real interest rates represent the lending interest rate adjusted for inflation as measured by the GDP deflator. Available data only used for averages with some country gaps in the data set.

Figure 3: Climate projects' relative capital intensity: power generation comparison of wind and gas energy projects

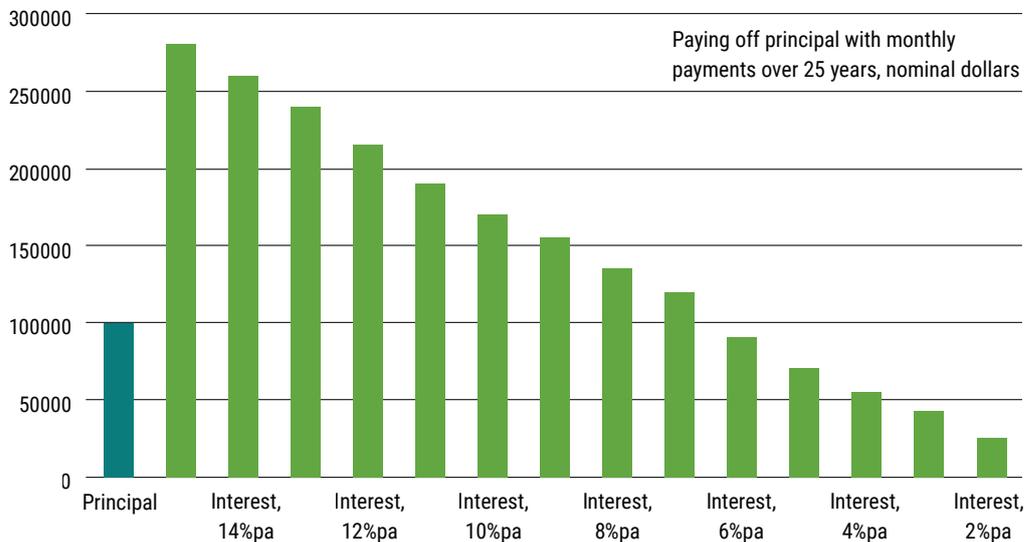


Source: Waissbein et al. (2013).

For adaptation infrastructure projects, a relative cost increment applies to already large up-front business-as-usual capital investments (such as in buildings, roads, bridges, coastal defences) that require an additional outlay to ensure those investments withstand current and future climate impacts, such as sea-level rise or changes in extreme weather. Amortisation of up-front capital investments is extremely sensitive to the cost of capital. According to UNDP, the total of capital expenditure plus cost of finance would be reduced by 50% for an effective interest rate of 6% versus 12% (Glemarec. 2011, Figure 4).

This means that when considering the effect of interest rates on the profitability of a climate-resilient or renewable energy infrastructure project, the most significant determining factor is not the cost of the technology or of achieving resilience, but the cost of capital (Ward, 2010).

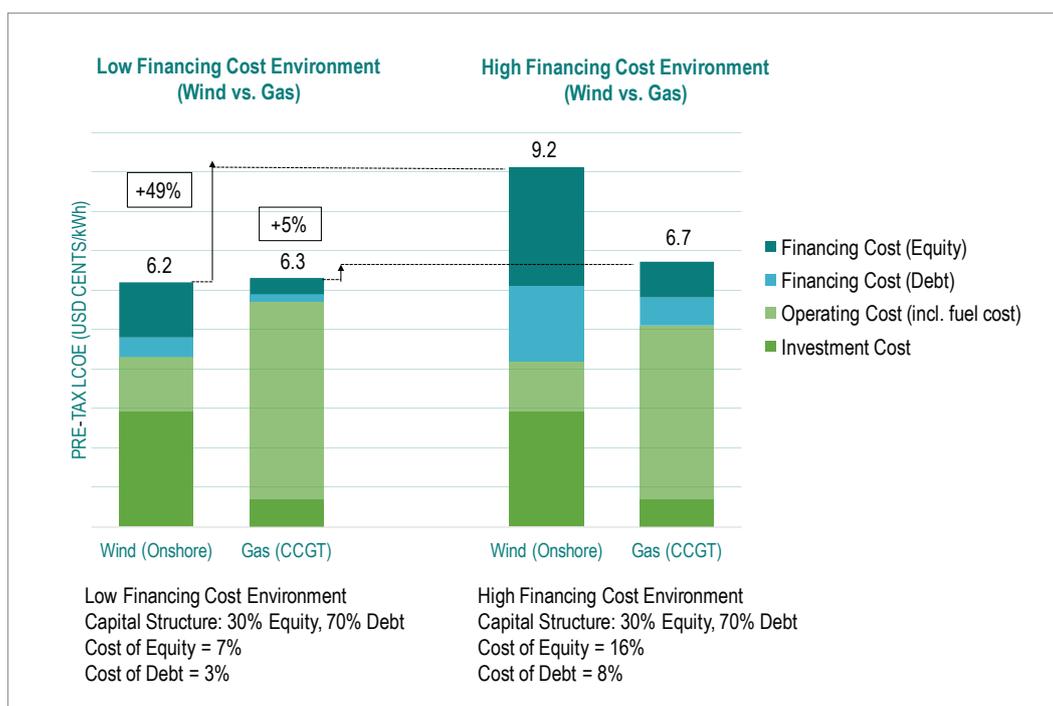
Figure 4: Effect of the Interest Rate on Profitability of the Green Investment



Source: Glemarec (2011).

Figure 5 illustrates how a high cost of capital financing environment can decrease the viability of a climate infrastructure project versus a conventional alternative.

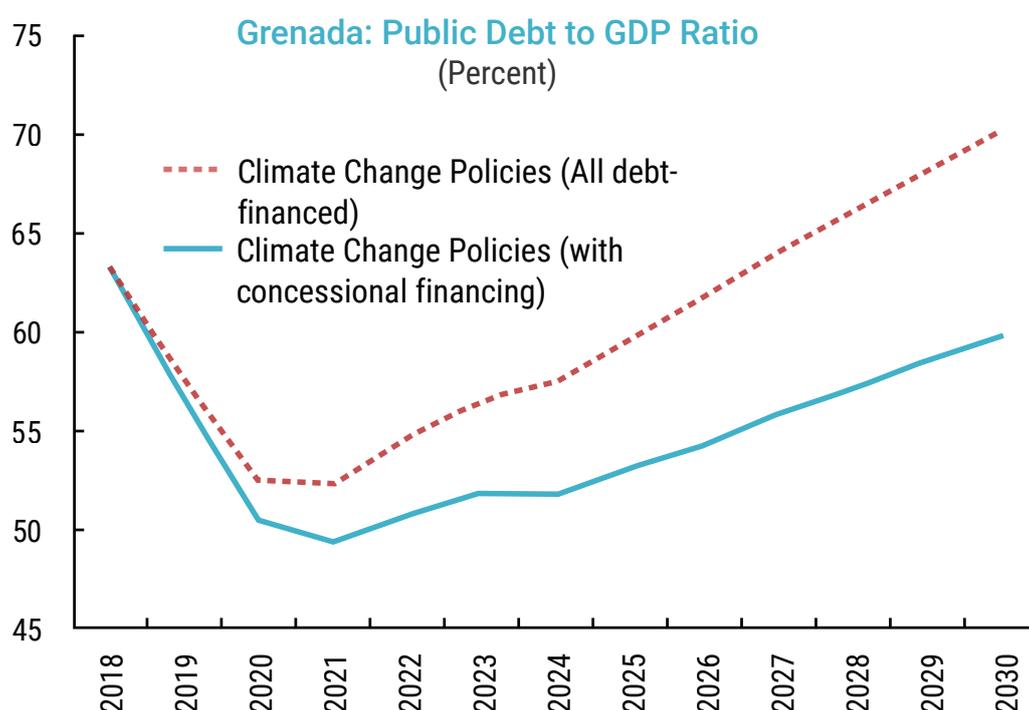
Figure 5: Impact of Financing Costs in Renewable Energy and Fossil Generation



Source: UNDP (2017).

Figure 6 illustrates the case of Grenada, which needs to make large-scale infrastructure investments to reduce its vulnerability to climate change. Given the cost of capital and the upfront cost, Grenada will require USD 15 million in grants financing annually until 2030 in order to stay within a debt to GDP ratio of 60%. If Grenada is unable to reduce the cost of capital or access grants, public debt is projected to rise to 70% by 2030 (IMF, 2019e).

Figure 6: Public Debt to GDP Ratio in Grenada



Source: IMF (2019e).

3. Brief overview of macroeconomic conditions, debt sustainability and climate vulnerability of V20 countries

Table 3 provides an overview of selected macroeconomic and climate vulnerability indicators for V20 countries. According to the World Bank’s country classification, the V20 membership comprises low-income economies, lower- and upper-middle income economies, as well as two high-income economies (cf. Column 3).

More than half of the V20 countries face debt sustainability challenges, as indicated in columns 4, 5, 6, 7 and 8. Currently, 12 V20 countries are considered by the IMF to be at high risk of defaulting on their public debt, while three V20 countries are already in debt distress. Another 12 V20 countries face moderate risk of debt default. Debt sustainability can be expected to worsen as the effects of the COVID-19 crisis affects economic output and public finances. Over the last decade, the creditor base of V20

countries has shifted toward commercial lenders and non-Paris club members. This has not only reduced the transparency of public debt; it is also complicating the negotiation of debt relief in case countries face solvency problems.

As discussed, debt sustainability is further threatened because of climate vulnerability. Table 3 shows indicators for Vulnerability and Readiness from the Notre Dame Global Adaptation Initiative (ND-GAIN) (Chen et al. 2015). The ND-GAIN Vulnerability indicator measures a country's exposure, sensitivity and ability to adapt to the negative impact of climate change. ND-GAIN measures the overall vulnerability by considering vulnerability in six life-supporting sectors – food, water, health, ecosystem service, human habitat and infrastructure. The ND-GAIN Readiness indicator measures a country's overall readiness by considering three components – economic readiness, governance readiness and social readiness. Both indicators are in the 0-1 range. For Vulnerability, lower scores are better, while for Readiness, higher scores are better. There is some variation in terms of Vulnerability and Readiness scores among the V20 group, but overall, all V20 members are exposed to considerable vulnerability to climate change, whereas the capacities to respond are limited. Figures 7 and 8 illustrate that there is a high concentration of public and private debt risk with countries being more vulnerable to the effects of climate change.

Table 3: Selected macroeconomic and climate vulnerability indicators for V20 countries

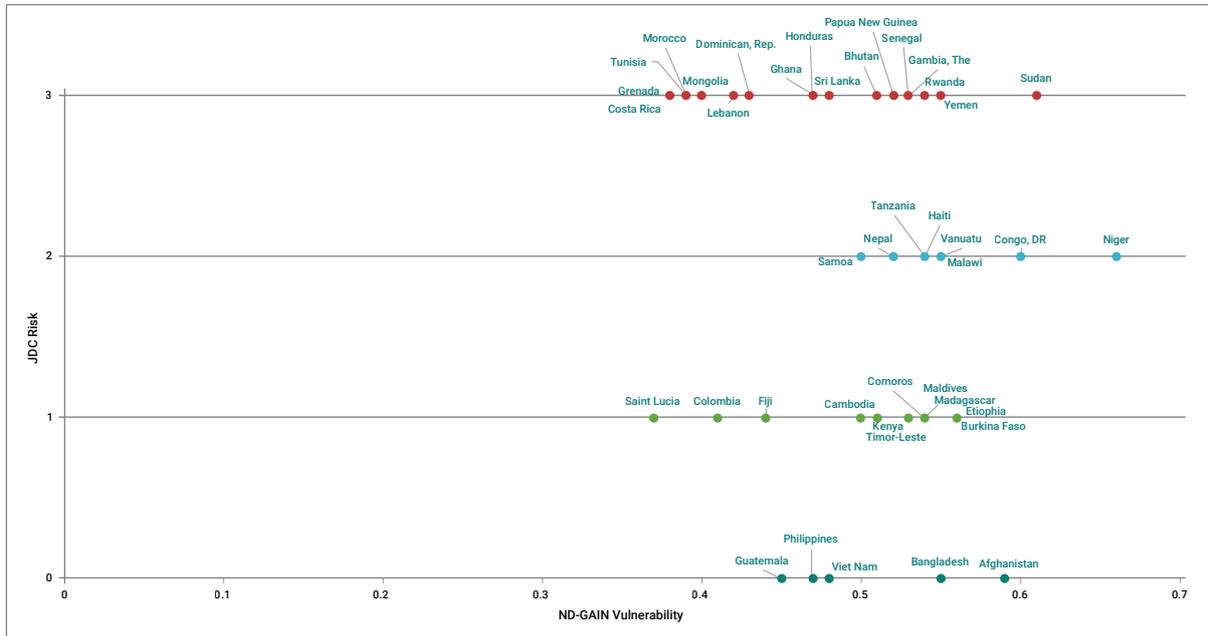
Country	GDP per capita (current prices/ PPP USD 2019)	World Bank country classification (2020)	JDC Risk (2020)	IMF Risk (2020)	Government external debt payments (2020), in percent	Net creditor / debtor (2019), in percent	Private external debt (2019), in percent	Current account balance as percent of GDP (2019)	ND-GAIN Vulnerability (2018)	ND-GAIN Readiness (2018)
Afghanistan	502	Low income	No risk identified	High	2.3	36	20.8	2.0	0.59	0.22
Bangladesh	1,856	Lower-middle income	No risk identified	Low	11.9	-12	4.2	-2.0	0.55	0.27
Barbados	18,148	High income	N/A	N/A	N/A	N/A	N/A	-3.9	0.39	0.51
Bhutan	3,243*	Lower-middle income	In debt crisis	Moderate	49.0	-91	137.2	-12.5	0.51	0.46
Burkina Faso	775	Low income	Risk of private debt crisis	Moderate	5.7	-47	116.5	-5.7	0.56	0.28
Cambodia	1,643	Lower-middle income	Risk of private debt crisis	Low	6.9	-83	184.8	-12.5	0.50	0.29
Colombia	6,432	Upper-middle income	Risk of private debt crisis	N/A	7.8	-48	26.2	-4.2	0.41	0.38
Comoros	1,394	Lower-middle income	Risk of public debt crisis	Moderate	8.4	1	N/A	-8.0	0.54	0.28
Congo, DR	545	Low income	Risk of public & private debt crisis	Moderate	11.1	-40	56.5	-3.4	0.60	0.21
Costa Rica	12,238	Upper-middle income	In debt crisis	N/A	18.7	-53	33.6	-2.4	0.38	0.47
Dominican Rep.	8,282	Upper-middle income	In debt crisis	N/A	16.9	-62	84.7	-1.3	0.43	0.37
Ethiopia	858	Low income	Risk of public debt crisis	High	14.2	-26	3.0	-6.0	0.56	0.30
Fiji	6,220	Upper-middle income	Risk of private debt crisis	N/A	19.0	-84	116.0	-7.3	0.44	0.44
Gambia, The	751	Low income	In debt crisis	High	21.4	-28	N/A	-9.4	0.53	0.32
Ghana	2,202	Lower-middle income	In debt crisis	High	50.2	-40	53.0	-3.6	0.47	0.35
Grenada	10,966	Upper-middle income	In debt crisis	In debt distress	19.0	-113	186.0	-11.3	0.38	0.54
Guatemala	4,620	Upper-middle income	No risk identified	N/A	13.9	-15	49.0	0.6	0.45	0.32
Haiti	755	Low income	Risk of public & private debt crisis	High	14.1	-17	54.0	-3.3	0.54	0.23
Honduras	2,575	Lower-middle income	In debt crisis	Low	15.7	-67	108.0	-4.2	0.47	0.28
Kenya	1,817	Lower-middle income	Risk of public debt crisis	High	14.5	-24	1.2	-4.7	0.53	0.28
Kiribati	1,655	Lower-middle income	No risk identified	High	2.4	543	N/A	13.2	N/A	0.45
Lebanon	7,784	Upper-middle income	In debt crisis	N/A	40.3	-66	69.2	-26.4	0.42	0.30
Madagascar	522	Low income	Risk of private debt crisis	Moderate	8.2	-58	100.4	-1.6	0.56	0.27
Malawi	412	Low income	Risk of public & private debt crisis	Moderate	6.6	-40	55.8	-14.3	0.55	0.26

Country	GDP per capita (current prices/ PPP USD 2019)	World Bank country classification (2020)	JDC Risk (2020)	IMF Risk (2020)	Government external debt payments (2020), in percent	Net creditor / debtor (2019), in percent	Private external debt (2019), in percent	Current account balance as percent of GDP (2019)	ND-GAIN Vulnerability (2018)	ND-GAIN Readiness (2018)
Maldives	10,791	Upper-middle income	Risk of public debt crisis	High	13.7	-28	1.7	-20.4	0.54	0.42
Marshall Islands	3,788*	Upper-middle income	N/A	High	9.6	-45	N/A	4.1	N/A	0.38
Mongolia	4,295	Lower-middle income	In debt crisis	N/A	19.4	-262	315.3	-14.4	0.40	0.44
Morocco	3,204	Lower-middle income	In debt crisis	N/A	15.8	-67	31.9	-4.5	0.39	0.43
Nepal	1,071	Lower-middle income	Risk of public & private debt crisis	Low	3.2	9	23.1	-8.3	0.52	0.34
Niger	555	Low income	Risk of public & private debt crisis	Moderate	15.1	-98	121.8	-20.0	0.66	0.31
Palau	15,859*	High income	N/A	N/A	N/A	N/A	N/A	-25.4	N/A	0.44
Papua New Guinea	2,845	Lower-middle income	In debt crisis	High	22.3	-66	58.1	23.0	0.52	0.28
Philippines	3,485	Lower-middle income	No risk identified	N/A	6.6	-10	13.5	-2.0	0.47	0.34
Rwanda	802	Low income	In debt crisis	Moderate	19.2	-49	69.5	-9.2	0.54	0.40
Saint Lucia	11,611	Upper-middle income	Risk of private debt crisis	Moderate	5.9	-45	140.6	2.5	0.37	0.45
Samoa	4,316	Upper-middle income	Risk of public & private debt crisis	High	14.5	-33	55.2	-0.6	0.50	0.44
Senegal	1,447	Lower-middle income	In debt crisis	Moderate	20.4	-48	84.0	-8.5	0.53	0.35
South Sudan	1,120**	Low income	In debt crisis	In debt distress	18.9	N/A	N/A	2.3	N/A	N/A
Sri Lanka	3,853	Lower-middle income	In debt crisis	N/A	37.5	-58	24.3	-2.6	0.48	0.40
Sudan	442	Low income	In debt crisis	In debt distress	19.6	-276	289.6	-7.4	0.61	0.26
Tanzania	1,122	Lower-middle income	Risk of public & private debt crisis	Low	13.1	-48	60.1	-4.1	0.54	0.29
Timor- Leste	1,294	Lower-middle income	Risk of private debt crisis	Low	1.0	636	23.8	1.1	0.51	0.39
Tunisia	3,318	Lower-middle income	In debt crisis	N/A	21.5	-147	47.5	-10.4	0.39	0.43
Tuvalu	4,059	Upper-middle income	No risk identified	High	6.1	N/A	N/A	29.9	N/A	0.57
Vanatu	3,058	Lower-middle income	Risk of public & private debt crisis	Moderate	8.2	-32	136.7	6.1	0.55	0.36
Viet Nam	2,715	Lower-middle income	No risk identified	N/A	8.5	-20	13.3	2.2	0.48	0.42
Yemen	968*	Low income	In debt crisis	Moderate	26.4	N/A	N/A	-4.0	0.55	0.24

Source: Compiled with data from the World Bank's World Development Indicators; Jubilee Debt Campaign (JDC)'s Debt Data Portal (<https://data.jubileedebt.org.uk>); and Notre Dame Global Adaptation Initiative (ND-GAIN) (Chen et al. 2015).

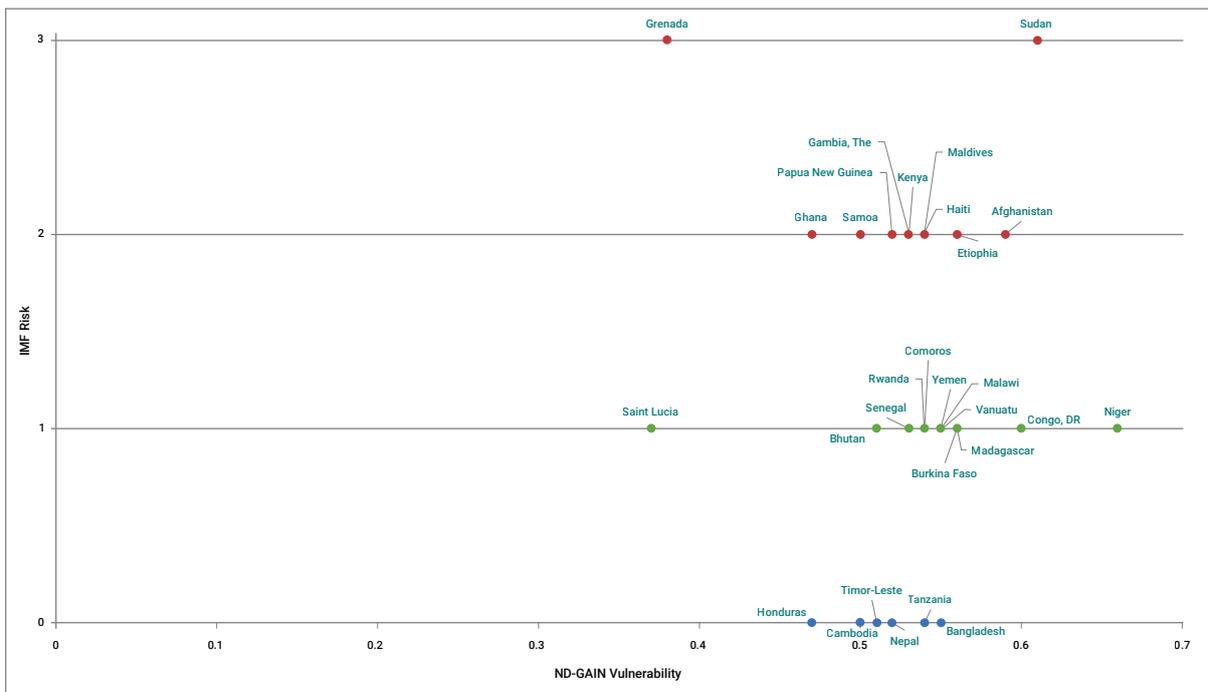
Note: N/A stands for not available. Palestine is not included in this table because of lack of data. *GDP/capita data for Bhutan, Marshall Islands, Palau, and Yemen is for 2018; **GDP/capita data for South Sudan is for 2015. The JDC risk classification is based on metrics of public and private debt.

Figure 7: JDC Risk vs ND-GAIN Vulnerability



Note: JDC risk data, as shown in Table 3, was translated as follows: 0 (no risk identified), 1 (risk of private debt crisis or risk of public debt crisis), 2 (risk of public & private debt crisis) and 3 (in debt crisis). Those without information are not included.

Figure 8: IMF Risk vs ND-GAIN Vulnerability



Note: IMF risk data, as shown in Table 3, was translated as follows: 0 (low), 1 (moderate), 2 (high) and 3 (in debt crisis). Those without information are not included.

4. The IMF's current policy frameworks and analytical tools relating to climate change

The IMF recognised climate change as an emerging structural issue in 2015 (Bretton Woods Project 2019). In November 2015, Christine Lagarde, the IMF's Managing Director at the time, acknowledged that "[t]he Fund has a role to play in helping its members address those challenges of climate change for which fiscal and macroeconomic policies are an important component of the appropriate policy response" (Lagarde 2015: 1). Lagarde asserted that, while the Fund is "is not an environmental organization [...] climate change poses significant risks for macroeconomic performance and several of the appropriate policy responses lie within the Fund's expertise" (ibid.). Lagarde identified six roles that the Fund should play: (i) analytical work; (ii) technical assistance, surveillance and training; (iii) promoting dialogue, (iv) integrating natural disaster risks and preparedness strategies in macroeconomic forecasts and debt sustainability analyses; (v) helping countries incorporate adaptation strategies in medium-term budget frameworks; and (vi) working closely with other institutions to encourage consistent climate-related disclosures, prudential requirements, and stress testing for the financial sector (Table 4).⁷

Table 4: The IMF's role in addressing climate change according to Christine Lagarde, 2015

Analytical work underpins the Fund's contributions

The IMF draws on the specialist analysis of others contributing within their mandates (e.g., the Intergovernmental Panel on Climate Change, the International Energy Agency, the World Bank) and focuses on the practical design and administration of fiscal instruments for climate policy and broader energy policy. For example, Fund staff work has quantified, for over 160 countries, the environmental, fiscal, and economic benefits of energy pricing reform, including the removal of subsidies. This information helps policymakers craft the specifics of legislation to meet environmental and fiscal objectives and enlightens stakeholders on the case for reform. An overarching issue, which staff intends to analyse, is the growth impact of transitioning to a less carbon-intensive economy.

⁷ Lagarde's piece draws from an IMF Staff Discussion Note by Farid et al. (2016).

Technical assistance, surveillance and training

The Fund is well positioned to provide technical assistance and training, given its global membership and expertise in fuel tax design, tax administration, and energy price reform. Climate and energy policy developments are sometimes discussed in Article IV consultations, and this seems likely to become increasingly common. Next steps on further integration in surveillance will be informed by assessing experience with selected pilot countries.

Promoting dialogue

The Fund collaborates with other international organizations (e.g., World Bank, Organisation for Economic Co-operation and Development, and United Nations Environment Programme) to promote policy dialogue among finance ministries, emphasizing the benefits of carbon pricing as one component of an effective tax structure.

Integrating natural disaster risks and preparedness strategies in macroeconomic forecasts and debt sustainability analyses

Low-income and small developing states are especially vulnerable to increasing risks of extreme weather events. Staff, collaborating with other international institutions, will work with countries to develop comprehensive risk management frameworks to assess risks and determine the right mix of building domestic buffers versus risk transfer through insurance or financial market instruments, while tailoring investment and growth policies to building resilience.

Help countries incorporate adaptation strategies in medium-term budget frameworks

More analysis of the macroeconomic implications of adaptation policies is needed. Where macro-critical, the fiscal costs of adaptation, and the effective use of climate-related financial flows, will need to be integrated in sustainable medium-term fiscal frameworks.

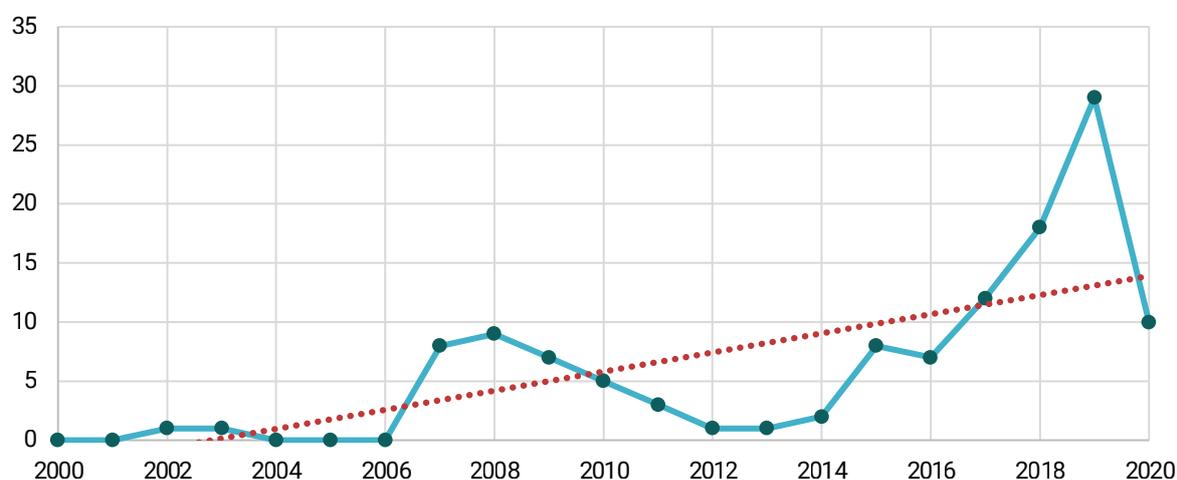
Work closely with other institutions to encourage consistent climate-related disclosures, prudential requirements, and stress testing for the financial sector

Staff work, in close coordination with other institutions, such as the World Bank, Financial Stability Board and International Association of Insurance Supervisors (IAIS) will: i) enhance understanding of the transmission mechanisms from climate risks to financial stability, ii) contribute to the design of appropriate disclosure rules for climate risk exposure, iii) provide technical assistance to promote safe and sound development of markets and instruments to help manage climate-related risks, iv) contribute to the development of best practices for stress-testing for climate risks, and v) support ongoing work on globally consistent prudential requirements for the insurance sector, including on a Global Insurance Capital Standard being developed by IAIS to allow for catastrophe risk in capital requirements.

Source: Lagarde (2015).

Although the IMF was rather slow to follow up on this agenda set out by Lagarde, there has been a steady increase in the number of publications and events with substantial reference to climate change since 2016 (Volz 2020a, Figure 9). The most notable outputs include a chapter on weather shocks on economic activity in low-income countries in the 2017 World Economic Outlook report (IMF 2017), volumes on 'Resilience and Growth in the Small States of the Pacific' (Khor et al. 2016) and 'Unleashing Growth and Strengthening Resilience in the Caribbean' (Alleyne et al. 2017), and a policy paper on 'Small States' Resilience to Natural Disasters and Climate Change – Role for the IMF' (IMF 2016). Still, only relatively few people at the IMF regarded climate change as a "macro-critical" factor, i.e., crucial to the achievement of macroeconomic and financial stability, which is at the core of the Fund's mandate.

Figure 9: Number of publications and events with substantial reference to climate change



Source: Volz (2020a).

Note: Publications which show at least ten references to ‘climate change’, ‘climatic’, ‘climate risk’ and/or ‘climate-related’ or provide at least one whole paragraph, box or section on the topic are categorised as having “substantial reference” to climate change.

The IMF’s attention to climate change increased markedly in 2019. That year, IMF staff produced a growing number of working papers and reports addressing important dimensions of climate change, including the fiscal challenges of and responses to climate change (IMF 2019a, 2019b) and sustainable finance and environmental, social and governance reporting (IMF 2019c). The IMF also published a review of macroeconomic and financial policies for mitigating climate change (Krogstrup and Oman 2019). On top of this, the IMF became an observer of the Central Banks and Financial Supervisors Network for Greening the Financial System (NGFS), a group of 72 (as of 18 September 2020) central banks and supervisory authorities (and 13 observers) committed to better understand and manage the financial risks and opportunities stemming from climate change.⁸

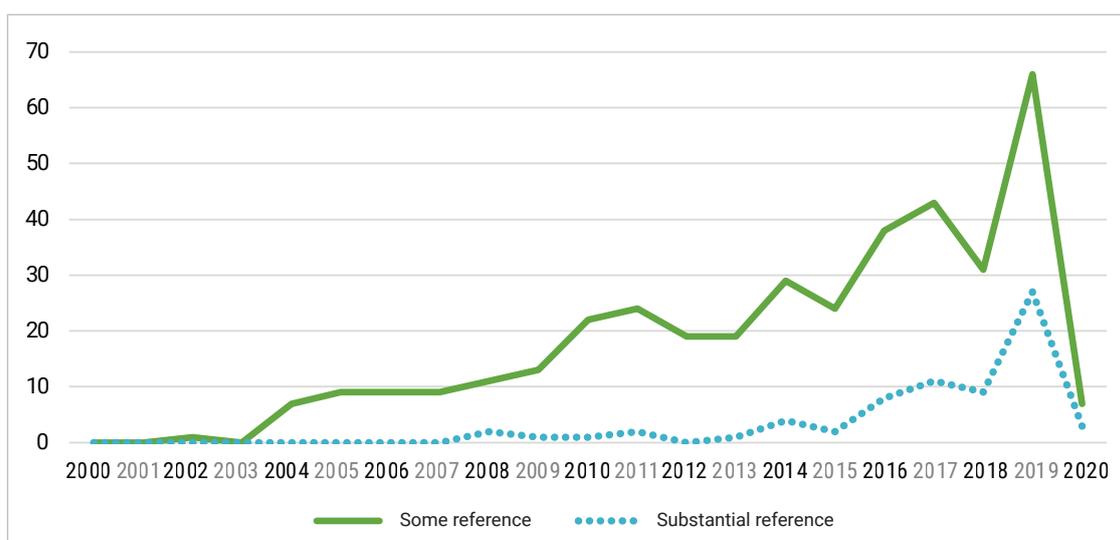
Upon taking up her role in October 2019, the new Managing Director Kristalina Georgieva made clear that she considers climate change a key responsibility for the IMF. At the 2019 Annual Meetings of the IMF and the World Bank Group in October, Georgieva acknowledged the centrality of climate risks for the Fund’s work: “The criticality of addressing climate change for financial stability, for making sure that we can have sustainable growth, is so very clear and proven today, that no institution, no individual can step from the responsibility to act. For the IMF, we always look at risks. And this is now a category of risk that absolutely has to be front and centre in our work” (IMF 2019d).

In its operational work – comprising surveillance, technical assistance and training, and

⁸ Numbers as of 18 September 2020.

emergency lending and crisis support – the IMF has been rather slow to address climate-related financial risks (Volz 2020a). In its surveillance and monitoring operations, which are carried out at the global, regional and country levels, the IMF seeks to identify potential risks to macroeconomic and financial stability and puts forward policy adjustments that should support economic growth, promote financial and economic stability, and prevent the build-up of financial risks. At the country level, surveillance centres around the annual Article IV consultations. As can be seen in Figure 10 the IMF has only recently started to address climate change in some of its Article IV consultations with its member countries. Since the early 2010s, when climate change was still virtually absent from Article IV consultations, a small number of Article IV reports per year included substantial references to climate change. A large increase was recorded in 2019. However, in the vast majority of Article IV consultations, climate change and climate-related macroeconomic and fiscal risks still play no role.

Figure 10: Number of Article IV reports with reference to climate change, January 2000 – June 2020



Source: Volz (2020a).

Note: Included are all the published staff reports of Article IV consultations that took place between January 2000 and June 2020 that include the words ‘climate change’, ‘climatic’, ‘climate-related’ or ‘climate risk’. Article IV reports which show at least ten references to ‘climate change’, ‘climatic’, ‘climate risk’ and/or ‘climate-related’ or provide at least one whole paragraph, box or section on the topic are categorised as making “substantial reference” to climate change. All others are categorised as making “some reference” to climate change. The year refers to the year in which the consultation was held, not the year of first publication as a staff report.

At the country level, the IMF conducts two surveillance activities jointly with the World Bank: Financial Sector Assessment Programs, and Debt Sustainability Analyses for low-income countries. To date, climate change has played no or little role in the Financial Sector Assessment Programs, and where it does, it is covered in the parts

produced by the World Bank. Likewise, the joint World Bank-IMF Debt Sustainability Analyses for low-income countries, which are structured examinations of developing country debt based on the Debt Sustainability Framework, do not systematically address climate risk analysis for the time being. The latest Debt Sustainability Analysis that was carried out for Somalia as part of the Enhanced Heavily Indebted Poor Countries Initiative in 2020, however, did include a simulation of a climate shock scenario (IMF 2020c).

At the regional level, the IMF has organised a number of regional dialogues for Pacific islands and the Caribbean.⁹ Among the flagship publications for regional surveillance, the Regional Economic Outlooks (REO), to date only the 2020 REO for Sub-Saharan Africa had a special chapter dedicated to 'Adapting to Climate Change in Sub-Saharan Africa' (IMF 2020a).

The IMF's global surveillance has to date not systematically addressed climate-related macrofinancial risks in a major report or integrated this issue in its regular monitoring exercises. The IMF published the already-mentioned chapter on the impact of weather shocks on economic activity in low-income countries in the 2017 World Economic Outlook report (IMF 2017), a chapter on sustainable finance in the 2019 Global Financial Stability Report (IMF 2019c) and an analysis of mitigating climate change in the 2019 Fiscal Monitor, which focused on carbon pricing.

With respect to technical assistance, the IMF – together with the World Bank – has thus far conducted so-called Climate Change Policy Assessments for six countries: the Seychelles (June 2017), St. Lucia (June 2018), Belize (November 2018), Grenada (July 2019), the Federated States of Micronesia (September 2019), and Tonga (June 2020). Climate Change Policy Assessments provide “an overarching assessment of countries' climate strategies—as articulated in their Nationally Determined Contributions (NDCs) and other government documents” and “are intended to help countries build coherent macro-frameworks for responding to climate change, which could improve prospects for attracting external finance and put future revisions to NDCs on a sound footing” (IMF 2020b).

Regarding the IMF's third main area of work, supporting member countries facing balance of payments difficulties and providing temporary financing, the IMF has a Rapid Credit Facility (RCF) and a Rapid Financing Instrument (RFI) which can be each used in catastrophe situations including climate disasters. The RCF “provides rapid concessional financial assistance with limited conditionality to low-income countries (LICs) facing an urgent balance of payments need” (IMF 2020d). The RCF's concessional financial support is provided exclusively to LICs through the Poverty Reduction and Growth Trust (PRGT). Member countries that are not PRGT-eligible can access the RFI.¹⁰ However, while both the RCF and RFI provide quick access to finance, they are both quota-based and provide only small emergency support. The IMF has not yet had a meaningful discussion about adjusting these facilities or create a new facility

9 These included a High-Level Dialogue on 'Enhancing Macroeconomic Resilience to Natural Disasters in the Pacific Islands' in 2015, a workshop and High-Level Pacific Islands Dialogue on 'Building Resilience to Natural Disasters and Climate Change' in 2017, and a High-Level Conference on 'Building Resilience to Disasters and Climate Change in the Caribbean' in 2018.

10 The RFI replaced the Emergency Natural Disaster Assistance and Emergency Post-Conflict Assistance facilities.

that would be tailored to support members in responding to shocks related to climate change.

The IMF toolkit also comprises the Catastrophe Containment and Relief Trust (CCRT), which enables the Fund “to provide grants for debt relief for the poorest and most vulnerable countries hit by catastrophic natural disasters or public health disasters” (IMF 2020e). However, for the time being only 33 countries are eligible for support from the CCRT (IMF 2020f).¹¹ For the majority of member countries, including climate vulnerable developing countries, the IMF has no specific frameworks or instruments to deal with climate-related debt.

Overall, despite growing research evidence and financial supervisors’ awareness of the materiality of climate-related financial risks (NGFS 2019), climate risk considerations have thus far been largely excluded from the IMF’s policies. The IMF’s own publications have established that “climate change is potentially macro-critical” (IMF 2019a), but also reveal that staff may still consider climate change to not be macro-critical in some countries. The macro-criticality standard as used by the IMF towards questions of engagement on macro-structural issues needs to be discussed, especially in the context of the IMF’s dealing with climate vulnerable countries.

In the case of climate-related surveillance, the Fund has indicated it will focus on two principal types of climate risks: physical risks posed by the increasing severity of climate impacts, and transition risks posed by a change in the value of fossil-fuel assets. However, the Fund has also indicated that surveillance on climate issues will not be mandatory in Article IV consultations, raising the prospect of climate risk being evaluated from some countries, but not others. It is understood that a staff guidance note on operationalising climate issues at country level, in particular in surveillance, is in development.

5. Results from interviews and a survey among the V20

To explore the views and preferences of V20 countries regarding the IMF’s role, a written survey was sent to all ministries of finance and central banks of V20 countries (as well as a few selected other climate vulnerable countries) in August 2020. The complete questionnaire is presented in Annex 1. The surveys were sent to the official V20 contact person at the respective institution. As of 23 September 2020, 12 completed surveys were returned by 6 ministries of finance and 6 central banks from 10 countries, including 2 non-V20 countries.

To complement the written survey, structured interviews were conducted with senior officials from finance ministries and central banks of several V20 countries between June and September 2020, including from institutions and countries that did not respond to the written survey. The responses in the interviews are in line with the written survey responses presented in the following. Given the small sample of respondents

¹¹ The following 16 V20 countries are eligible for support from the CCRT: Afghanistan, Burkina Faso, Comoros, Democratic Republic of Congo, Ethiopia, The Gambia, Haiti, Madagascar, Malawi, Nepal, Niger, Rwanda, Republic of Tanzania, Republic of Yemen, South Sudan, and Timor- Leste.

and potential self-selection bias, the survey responses should not be seen as representative of the V20 group as a whole. Still, they provide interesting insights how finance ministries and central banks of climate vulnerable countries are coping with climate-related risks.

General questions

All institutions have already taken steps to understand potential climate impacts and risks over the next 10-20 years, although the majority stated that they have conducted only “some analysis”. Only two respondents stated that their institutions had undertaken extensive/comprehensive analysis to date. All respondents stated that their organisation has been involved in efforts to reduce adverse impacts of climate change, e.g. through better planning and investing in a more climate-resilient economy, financial sector, and infrastructure. Seven organisations have already taken steps to better manage the residual impacts that can't be reduced, such as through scaled up reserves, contingency finance or financial safety nets. 7 institutions (from 6 countries) have thus far discussed climate impacts and risks in previous exchanges with the IMF, including in technical assistance discussions and Article IV consultations. Of those who did, most had the impression that IMF staff are knowledgeable in matters relating to macrofinancial risks of climate change, but one was not sure and one negated this.

Surveillance

8 out of 12 respondents expressed the view that the IMF should include a mandatory section on climate risks in its Article IV consultations with all member countries. One did not know, while 2 were against making climate risks section in Article IV consultations mandatory. One expressed that this should depend on the circumstances of each country, with some countries facing important macroeconomic risks that are driven by climatic factors while for others those risks are less significant. Using scarce Fund resources in the latter cases for this purpose could deviate attention from more pressing issues. There was, however, full consensus that the IMF should include a mandatory section on climate-related financial risks in the Financial Sector Assessment Program assessments it conducts together with the World Bank. Moreover, except for one respondent who was not sure, all agreed that the joint World Bank-IMF Debt Sustainability Framework for low-income economies should be enhanced by an analysis of the impact of climate-related financing needs and risks on debt sustainability.

Technical assistance and training

To date, only 4 institutions among the respondents had received technical advice on mitigating climate risks for public finances and the economy, or on developing disaster risk management from the IMF. Regarding technical support on the design of carbon taxes, 8 institutions would like to see support from the IMF for their country, 3 were unsure, and 2 were against IMF involvement in this. A large majority (10 institutions) said they would like to receive support from the IMF in developing a national approach for “greening” the financial sector and help them to better address climate-related financial risks; one central bank said that this would be an issue for the ministry of finance but thought that combined support by the IMF and the World Bank may be

desirable. One institution was negative regarding a possible role of the IMF in this. The picture was almost the same regarding potential support from the IMF in developing an energy transition scenario analysis, with 8 institutions indicating interest, while two institutions did not see a role for the IMF in this.

10 out of 12 respondents think the IMF should support its member countries' financial and monetary authorities in developing capacities to better assess climate risks, e.g. via climate stress-testing, to inform the design of fiscal, monetary or prudential policies, while two were against this. 11 out of 12 respondents believe the IMF should support member countries in strengthening public debt management to enable them to better account for climate risks in public budgets, with one opposing. 9 respondents think the IMF should support governments in developing contingency plans and securing pre-arranged contingent financing facilities from different sources, as well as insurance-based solutions. While one respondent was unsure, one was against IMF involvement and highlighted that it was a problem that contingencies are accounted for as expenditures, reducing the already limited fiscal space.

Emergency lending and crisis support

When asked about the biggest financing constraints countries face in terms of investing in pre-disaster resilience, disaster preparedness, and ex-post disaster response, several respondents highlighted a general constrained fiscal space and limited access to concessional funds. Among the 10 countries represented in the survey, only one country has to date received emergency support from the IMF in the context of a natural (geological/hydrological) disaster. On the question whether the IMF should adjust its lending facilities or develop new instruments to support climate vulnerable countries, 10 respondents answered yes, one no, and one wasn't sure. One respondent highlighted that vulnerable countries may need grants as opposed to changing lending conditions, as most of them have high debt already and are experiencing growing problems in managing debt payments. 8 respondents think that the IMF should raise access under the RCF and the RFI, 2 were unsure and two did not answer this question. 9 respondents thought the IMF should explore linking a new climate disaster facility to an issuance of Special Drawing Rights (SDRs), which would benefit only countries hit by climate disasters; 2 respondents were unsure about this; and 1 respondent did not answer this.

Debt sustainability

Regarding debt sustainability, 9 respondents expressed the view that the IMF should explore options for a special treatment of climate debt (i.e. public debt that has been incurred as a direct result of climate disasters or necessary adaptation measures), while one was unsure and one thought that there should be no special treatment of climate-related debt but new metrics for debt in general. 7 respondents think the IMF should promote the inclusion of natural disaster clauses in sovereign debt contracts, while 3 were unsure, one against, and one did not respond. 8 respondents think the IMF should promote the use of instruments such as GDP-linked bonds or catastrophe bonds that reduce debt burdens in case of a (climate) disaster, while 2 were unsure, one against, and one did not respond. The majority of respondents – 8 – also thought that the IMF should work on developing a sovereign debt restructuring mechanism, while 2

were unsure, one against, and one did not respond. Lastly, 9 respondents consider it helpful to have an overview of critical metrics on what can be considered “unsustainable debt” vs. “sustainable debt”, with 2 respondents unsure on this and one did not respond.

Overall, the survey results – as well as the interviews – indicate that most V20 countries would like to see more support from the IMF in addressing climate vulnerabilities. Most finance ministries and central banks in V20 countries are still in early stages when it comes to analysing climate-related macrofinancial risks and would benefit from greater support in this area from the IMF. Most thought that the IMF should integrate climate risk analysis in its surveillance activities, including Article IV consultations as well as Financial Sector Assessment Program assessments and Debt Sustainability Framework analysis conducted together with the World Bank. There was also a widespread interest in receiving technical support from the IMF for climate-proofing public finances and developing disaster risk management. Last but not least, countries see a need for better frameworks for dealing with debt in general and climate-related debt in particular.

6. Considerations for a V20-IMF Joint Action Agenda

For mainstreaming climate-related financial risks assessment in its operations, the IMF needs to recognise that climate risks are different from the traditional type of risk addressed in financial risk analyses. Traditional financial risk evaluation and benchmarks are backward-looking, i.e. based on historical performances, while climate risks are forward-looking and characterised by deep uncertainty, non-linearity and endogeneity (Battiston and Monasterolo 2019). Importantly, climate risks can be amplified by the complexity of the financial system.

Ignoring forward-looking climate risks in policy design and implementation could lead to unintended effects on financial stability and inequality and broaden countries’ distance to their climate and economic targets. This, in turn, may create new sources of risk for countries’ macroeconomic and financial stability. Thus, assessing countries’ exposures to climate-related macrofinancial risks should be at the core of the IMF’s work (Volz 2020a). However, traditional financial risk approaches as currently used by the IMF are not designed to consider such characteristics and need to be complemented to assess the private and public sectors’ exposure (either via the physical or transition risk channel) to forward-looking climate-related risks; to analyse the largest sources of macroeconomic and fiscal imbalances induced by countries’ exposures to climate-related risks; and to design tailored measures to mitigate such risks, while addressing potential trade-offs on sustainable development and inequality.

A V20-IMF collaboration could establish a programme of work involving both the IMF and the V20 economies aimed at promoting actions to enhance resilience to climate change. A Joint Action Agenda has the potential to drive transformational action to minimise climate risks. Some questions to consider in the framing of the Joint Action Agenda include:

- What further steps could the IMF take to further strengthen the treatment of

climate risks in its operations, including in surveillance, policy support and financial assistance?

- What policy options are available to V20 members in order to accelerate efforts to tackle climate risks to the economy during the pandemic response and recovery, as well as in the longer-term?
- What avenues of international support needs in terms of finance and policy assistance could the IMF explore in order to ensure highly vulnerable economies are effectively supported to pursue these policy options?

Building on the preceding discussion, the following ten areas could form the basis for a Joint Action Agenda by the V20 and IMF.

6.1 Mainstreaming Systematic and Transparent Assessment of Climate-related Financial Risks in all IMF Operations

The IMF should mainstream a transparent assessment of climate-related financial risks in its operations. As the availability and sophistication of science-based climate financial risk metrics and methods such as climate stress-testing and climate-financial pricing models increase, the IMF has a solid ground for starting its assessment of climate-related financial risks, in order to better anchor and inform its policy work. Given the role of the financial sector in the economy and society, the assessment of climate-related financial risks and opportunities should be implemented in a transparent and independent way.

6.2 Consistent, Systematic, and Universal Appraisal and Treatment of Physical Climate Risks and Transition Risks for All Countries in Article IV Consultations and Financial Sector Assessment Programs

By including a mandatory section on climate risks in its Article IV consultations with all member countries, the IMF can mainstream the assessment of climate risks in countries' financial stability analyses. A consistent, systematic, and universal treatment of climate risks in Article IV consultations will facilitate better management and mitigation of macrofinancial risks through governments and enhance the recognition of such risks by the financial sector.

The IMF could also introduce a mandatory section on climate-related financial risks to the Financial Sector Assessment Programs it conducts jointly with the World Bank. Importantly, the IMF should recognise the unique susceptibilities of climate vulnerable countries, stemming from both physical and transition risks, and support their financial and monetary authorities in developing capacities to better assess and respond to climate risks, e.g. via climate stress-testing to inform the design of prudential policies, when needed.

A better analysis of climate-related macrofinancial risks will not only enable better micro- and macroprudential policies to safeguard macrofinancial stability, it should also lead to better pricing of these risks by financial markets, which will contribute to

overcoming barriers to scaling-up sustainable investment (Monasterolo and Volz 2020).

6.3 Advancing Disclosure of Climate-related Financial Risks and Promoting Sustainable Finance and Investment Practices

Aligning financial markets with sustainable development and the Paris climate goals will be crucial for enhancing resilience of climate vulnerable countries. The IMF's 2020 Global Financial Stability Report highlights the way investors and equity markets have long ignored the growing risk of financial losses associated with climate risk (IMF, 2020h). The IMF could use its unique role in international finance to promote the disclosure of climate-related financial risks and the development of sustainable finance and investment practices. Well-developed financial markets that account for sustainability risks facilitate climate-friendly private sector investment.

Box 2: Assessing Financial Liabilities

Accurate assessments of financial liabilities is becoming more challenging due to the complex impacts of climate change. It is time to prioritise efforts to modernise and integrate into financial policy frameworks climate and transition risks in order to limit if not contain vulnerabilities to stranded risk and rapid onset and slow onset climate events. This is critical for developing policies tailored to crowd-in low-carbon and climate-resilient investments and value. Due to the fixed nature of conventional fossil fuel power contracts that “lock-in” long-term liabilities, countries may be at risk of stranded assets or stranded debt in the power sector which could lead to increased subsidy requirements or an increase in power tariffs which can negatively impact cost-competitiveness. Because many fossil fuel contracts are backed by sovereign guarantees to cover fixed capacity payments, power sector funding practices have a direct impact on public-sector balance sheets in terms of what the state owns and owes. Moreover, given the rapid pace of innovation in the power and energy sector, many of the conventional power facilities backed by export credit agencies (ECAs) from major economies are at risk of early obsolescence.

The IMF could help vulnerable developing countries determine which parties hold the affected assets and related liabilities. A mixed ownership dynamic can distort the traditional risk-reward dynamic for ECAs from major economies, especially if the project sponsor has failed to capture or reflect relevant market risks correctly and when an ECA steps in to support a failed project that could in turn exacerbate financial and climate risks at the country level. This also raises questions about risk management in the event the government or the IMF are called upon to support a bailout. Without intervention, bailout funds could be claimed to service contractual obligations related to loans or financing originating from or backed by the major economy.

The scenarios highlighted above underscore the importance of ensuring the IMF is positioned to engage proactively with countries in order to ascertain the degree of exposure of the financial

sector, the public sector, and relevant major economy export credit agencies to fossil fuel lock-in and its accompanying non-performance stranded risk. These risks should also be evaluated in the case of other public infrastructure, e.g. ports, pipelines, and transport systems that lack adaptive capacity to deal with physical climate risks. In other words, the IMF could explore providing the analytical resources needed to assist governments to understand the size and nature of public assets exposed to transition risk and physical climate risk, extending guidance on options governments can consider to better manage risk exposures.

This assessment would not only promote better understanding of financial system risk levels, but can be linked to other financing facilities to help reduce or relieve the fiscal pressures associated with transition risk and physical climate risk. For example, the analysis could support work by multilateral development banks to consider a stranded risk displacement financing facility for countries with fossil fuel contracts signed prior to 2020 that are causing fiscal pressures through refinancing or other means. Such a facility could be tailored to address fossil fuel displacement scenarios that occur when the average cost of new renewables is less than the variable cost of fossil fuel generation, and when the average cost of renewables and storage plus the capital recovery of an existing fossil fuel plant is less than the variable cost of the fossil fuel generation. This type of stranded risk displacement financing facility could also alleviate fiscal pressures and catalyse additional investment in climate-proofed infrastructure.

6.4 Exploring synergies between Fiscal and Monetary Policies

The IMF could explore synergies between fiscal and monetary policies as well as macroprudential regulations to identify an optimal policy mix that would enhance finance for development oriented towards just transition outcomes while improving economic competitiveness and ensuring macrofinancial stability. In this regard, closer collaboration between financial institutions acting on climate finance, including development finance institutions, central banks and financial regulators, would be crucial. By considering the materiality of forward-looking climate risks in the design of fiscal and financial policies, the IMF could support its membership in general, and climate vulnerable countries in particular, in building resilience to such risks while scaling up investments needed to achieve climate targets. Not doing so could lead to a disorderly transition leading to increasing liabilities and stranding risk for both public and private sector, generating adverse effects on financial stability and inequality.

6.5 Mainstreaming of Climate Risk Analysis in Public Financial Management and Supporting the Development of a Climate Disaster Risk Financing and Insurance Architecture

Through policy advice and technical assistance, the IMF can support climate vulnerable countries in climate-proofing public finances. In particular, the IMF can encourage and provide advice to finance ministries on how to analyse the potential impacts of climate

change on the medium- to long-term quality and sustainability of public finances and mainstream climate risk analysis in public financial management. Based on climate vulnerability assessments, the IMF can help finance ministries identify potential risks on the expenditure and revenue side. The IMF could also support V20 countries in incorporating fiscal buffers for climate-related risks in budget planning. In particular, it could help promote budgetary instruments for ex ante disaster financing, including contingency lines and disaster, reserve, or contingency savings funds (Cevik and Huang 2018).

Since debt sustainability can be affected by a country's ability to absorb shocks, it is important that governments of climate vulnerable countries are supported in developing contingency plans including options for securing pre-arranged and pre-agreed pricing of risk transfer instruments. The IMF could support the development of an international climate disaster risk financing and insurance architecture that addresses different layers of risks and provides vulnerable countries with instruments for climate and disaster financing (Ahmed et al. 2020).

To enhance debt sustainability, the IMF could promote a discussion around adding natural disaster clauses to sovereign debt contracts and the use of instruments such as GDP-linked bonds. Moreover, the IMF could seek to enhance transparency of public debt contracts, and support governments in asserting that assumptions and terms or clauses of debt contracts are realistic and sustainable.

By supporting climate vulnerable countries in strengthening public debt management, the IMF can contribute to enhanced debt sustainability and enable a better accounting for climate risks and investment opportunities that deliver high socio-economic and adaptation dividends in public budgets.

6.6 Supporting Climate Vulnerable Countries with Debt Sustainability Problems

The IMF could play an important role in supporting climate vulnerable countries that are facing debt sustainability challenges or are already in debt distress. As recently highlighted by Georgieva et al. (2020), a "reform of the international debt architecture is urgently needed". The IMF (2020i) has recently put forward reform options for the international architecture for resolving sovereign debt involving private-sector creditors. Together with the V20, the IMF could explore options for the treatment of climate debt, i.e. public debt that has been incurred as a direct result of climate disasters or necessary adaptation measures (Volz 2020). This is particularly relevant for Small Island Developing States, where single events can have devastating effects on the economy and public finances.¹²

The joint World Bank-IMF Debt Sustainability Framework for Low-Income Countries could be enhanced by a mandatory analysis of the impact of climate-related risks on debt sustainability. Such assessment could also be rolled out to climate vulnerable middle income countries.

¹² For example, the total damage and losses resulting from Cyclone Winston in 2016 in Fiji was 31% of GDP (USD 1.38 billion).

The COVID-19 crisis has worsened public finances in V20 countries. Going forward, many developing countries will require debt relief to respond effectively to the crisis and undertake meaningful investment to climate-proof their economies. For now, the international financial architecture still lacks an adequate system for addressing situations where sovereign debt becomes unsustainable. The IMF could explore options for a sovereign debt restructuring mechanism, as was originally proposed by the IMF two decades ago (IMF 2003), to deal with debt crises. In this context, the IMF could also investigate options for developing a new framework for debt restructuring that facilitate a green recovery, including through tools such as debt-for-climate swaps (Akhtar et al. 2020).

6.7 Developing the IMF Toolkit for Climate Emergency Financing

The IMF can further develop its existing emergency financing facilities or generate options for a new climate emergency financing facility. This is particularly relevant for Small Island Developing States though options should be explored as well to include other climate vulnerable countries.

One option is to raise access under the RCF/RFI, e.g. up to 400-500 percent of quota. Moreover, options should be explored to convert these facilities into grants, particularly for PRGT-eligible countries. A further option would be to establish an entirely new climate emergency facility. The IMF could consider linking a climate disaster facility to the issuance of SDRs, which would benefit only countries hit by climate disasters.

6.8 Exploring Options to Use SDRs to Support Climate Vulnerable Countries

The IMF could consider the possibility of allocating new SDRs as a way of providing vulnerable countries with enhanced liquidity. While a general SDR allocation would primarily benefit large economies,¹³ options could be explored where rich countries, whose historic carbon emissions are the main cause of anthropogenic climate change, make their SDRs available to a new multilateral swap facility or donate their SDRs to a trust fund at the IMF, which could use them in a way that benefits climate vulnerable countries. Another option would be to develop a mechanism where new SDRs are issued exclusively to climate vulnerable countries. Such an SDR issuance could be linked to exogenous shocks such as climate-induced disasters, eliminating problems with moral hazard. As climate vulnerable countries that have hardly contributed to global climate change suffer the biggest impacts, SDR issuances for climate vulnerable countries could be a way of enhancing resilience and global climate justice at the same time.

6.9 Supporting the Design and Implementation of Carbon Pricing Mechanisms

The second V20 Ministerial Dialogue in Washington, DC in April 2016 reiterated strong

¹³ SDR allocations are a function of GDP and country voting shares in the IMF. Only 3.44% of a new SDR allocation would benefit V20 countries, while G20 countries receive 79.27% of SDR allocation.

support for innovative revenue generating fiscal and financial measures to raise finance, stimulate technological innovation and redirect investment toward climate resilient and low-emissions development. In this respect, the V20 committed to support carbon pricing by working to establish pricing regimes by 2026 taking due consideration of each country's respective capabilities.

Building on its work on its work in using fiscal tools to mitigate climate change (IMF, 2019b), the IMF could support V20 countries in strengthening their fiscal framework and revenue outcomes through the design and implementation of appropriate carbon pricing mechanisms. Carbon tax revenues could be redistributed to support low-income households or communities affected by the low carbon transition or that are hit particularly hard by the physical effects of climate change.

6.10 Institutionalising Collaboration between the Fund and the V20

The current governance structure of multilateral development institutions, including the IMF, provides, for the most part, relatively little influence to vulnerable developing countries. This poor representation means that when agendas are set and decisions are made, vulnerable developing countries do not have the same voice as large countries or groups such as the G7 and G20. This matters not just in terms of securing robust country ownership of global financial responses but also in terms of establishing measures more responsive to distinct national circumstances.

The V20 has the ability to coordinate the position of vulnerable developing countries including small island developing states and nations that typically lack representation on monetary and development issues in the deliberations and decisions of the Bretton Woods Institutions. In particular, the V20 can feed into the agendas of the International Monetary and Financial Committee and the joint World Bank-IMF Development Committee, as well as in other relevant fora.

To provide a platform to climate vulnerable developing countries to articulate their views and interests, the IMF should recognise the V20 as an official stakeholder and hold regular consultations with the V20. Joint agendas are critical in order to develop a joint understanding and solutions to the problems created by climate change. Since October 2015, the V20 finance ministers have met biannually with the World Bank at the Annual and Spring Meetings of the IMF and the World Bank Group. The IMF could join the World Bank in holding regular, bi-annual meetings with the V20. A continuous exchange between the IMF and the V20 would provide the opportunity to develop and implement a joint action agenda.

7. Conclusion

The V20 economies face considerable macrofinancial risks that can undermine debt sustainability, constrain fiscal space, and worsen sovereign risk, among other effects. Most financial and monetary authorities of climate vulnerable countries are in the early stages of analysing these risks and incorporating them in their macrofinancial frameworks. They also face the urgent and growing need to develop more effective

approaches that climate-proof public finances and establish climate and disaster risk management structures.

The IMF has a critical role in addressing climate change through its policy advice and capacity building functions, surveillance, and the promotion of policy frameworks to mobilise investments. The IMF has recently started to put greater emphasis on climate risk and is in the process of developing its strategy and capacities in this area. There seems to be a clear demand among climate vulnerable countries for support from the IMF in all three areas of its operational work, i.e. surveillance, technical assistance and training, and emergency lending and crisis support. A partnership between the V20 and IMF could help climate vulnerable countries to better mitigate and manage systemic climate risks, and enable a macroeconomic environment that can facilitate investments in adaptation and development.

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Annex 1: Survey questionnaire



FEEDBACK TO INFORM THE V20-IMF JOINT ACTION AGENDA

Survey Questions

Country _____

Agency (indicate one): *Ministry of Finance / Central Bank*

General questions

- 1. Has your organisation taken steps to understand climate impacts and risks over the next 10-20 years?**
Very little/Some analysis/ Extensive analysis/Don't know
- 2. Has your organisation been involved in efforts to reduce these impacts, such as through better planning and investing in a more climate-resilient economy, financial sector, and infrastructure?**
Yes/No/Don't know
- 3. Has your organisation taken steps to better manage the residual impacts that can't be reduced, such as through scaled up reserves, contingency finance or financial safety nets?**
Yes/No/Don't know
- 4. Climate impacts and risks have been discussed in previous exchanges with the IMF, whether technical assistance discussions or Article IV consultations.**
Yes/No/Don't know
- 5. Do you have the impression that IMF staff are knowledgeable in matters relating to macrofinancial risks of climate change?**
Yes/No/Don't know

Surveillance

- 6. Should the IMF include a mandatory section on climate risks in its Article IV consultations with all member countries?**
Yes/No/Don't know

7. **Should the IMF include a mandatory section on climate-related financial risks in the Financial Sector Assessment Program assessments it conducts together with the World Bank?**

Yes/No/Don't know

8. **Should the joint World Bank-IMF Debt Sustainability Framework for Low-Income Countries be enhanced by an analysis of the impact of climate-related financing needs and risks on debt sustainability?**

Yes/No/Don't know

Technical assistance and training

9. **To date, has the IMF offered any technical advice on mitigating climate risks for public finances and the economy, or on developing disaster risk management?**

Yes/No/Don't know

If Yes: Please provide details. _____

10. **Would you like to see support from the IMF in designing carbon taxes for your country?** *Yes/No/Don't know*

11. **Would you like to see support from the IMF in developing a national approach for "greening" the financial sector and help it to better address climate-related financial risks?**

Yes/No/Don't know

12. **Is there interest to have support from the IMF in developing an energy transition scenario analysis?**

Yes/No/Don't know

13. **Should the IMF support its member countries' financial and monetary authorities in developing capacities to better assess climate risks, e.g. via climate stress-testing, to inform the design of fiscal, monetary or prudential policies?**

Yes/No/Don't know

14. **Should the IMF support member countries in strengthening public debt management to enable them to better account for climate risks in public budgets?**

Yes/No/Don't know

15. **Should the IMF support governments in developing contingency plans and securing pre-arranged contingent financing facilities from different sources, as well as insurance-based solutions?**

Yes/No/Don't know

Emergency lending and crisis support

- 16. What are the biggest financing constraints you face in terms of investing in pre-disaster resilience, disaster preparedness, and ex-post disaster response?**

Please provide details. _____

- 17. Has your country so far received financial support from the IMF in the context of a climate-related disaster?**

Yes/No/Don't know

If Yes: Please provide details, including the facility/instrument. _____

- 18. Do you think the IMF should adjust its lending facilities or develop new instruments to support climate vulnerable countries?**

Yes/No/Don't know

If Yes: Please provide details on what you may have in mind. _____

- 19. Should the IMF raise access under the Rapid Credit Facility and the Rapid Financing Instrument?**

Yes/No/Don't know

- 20. Should the IMF explore linking a new climate disaster facility to an issuance of SDRs, which would benefit only countries hit by climate disasters?**

Yes/No/Don't know

Debt sustainability

- 21. Should the IMF explore options for a special treatment of climate debt, i.e. public debt that has been incurred as a direct result of climate disasters or necessary adaptation measures?**

Yes/No/Don't know

- 22. Should the IMF promote the addition of natural disaster clauses to sovereign debt contracts?**

Yes/No/Don't know

- 23. Should the IMF promote the use of instruments such as GDP-linked bonds or catastrophe bonds that reduce debt burdens in case of a (climate) disaster?**

Yes/No/Don't know

- 24. Should the IMF work on a sovereign debt restructuring mechanism?**

Yes/No/Don't know

- 25. Should the IMF work on debt-for-climate swaps?**

Yes/No/Don't know

26. Would it be helpful to have an overview of critical metrics on what can be considered “unsustainable debt” vs. “sustainable debt”?

Yes/No/Don't know

Final questions

27. Besides the issues already discussed, what kind of support from the IMF would be helpful for your country for addressing climate risks?

Please provide details. _____

28. Are there any other issues you would like to highlight?

Yes/No

If Yes: _____

Additional question (in relation to the World Bank) for IDA-eligible countries

29. For IDA-eligible countries: What aspects of IDA's crisis finance toolkit (including core IDA, IDA Regional Window, Crisis Response Window, etc.) are working best? What aspects are not working? How could they improve?

Please provide details. _____

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