INTER-AMERICAN COURT OF HUMAN RIGHTS

# REQUEST FOR AN ADVISORY OPINION ON THE CLIMATE EMERGENCY AND HUMAN RIGHTS SUBMITTED TO THE INTER-AMERICAN COURT OF HUMAN RIGHTS BY THE REPUBLIC OF COLOMBIA AND THE REPUBLIC OF CHILE

SUPPLEMENTAL WRITTEN OBSERVATIONS REQUESTED BY THE COURT FROM BARBADOS

12 August 2024

[INTENTIONALLY BLANK PAGE]

**TABLE OF CONTENTS**

## I. SUMMARY

1. Following the request of Judge Nancy Hernández Lopez on 23 April 2024,[1] Barbados is pleased to provide this Court with a supplemental written pleading discussing the impact of the climate crisis on the global financial system.

2. It is not possible to list all the ways that climate change is negatively affecting finance around the world, in both commercial and developmental terms. Every day around the world, the climate crisis causes more financial losses, increased insurance claims (and thus increased insurance premiums and reduced insurance availability), and more economic devastation. Indeed, recent events in Barbados and its neighbours in the Caribbean have shown the world yet again that families in the Americas and beyond regularly lose their homes, schools, hospitals, places of employment to hurricanes and other more severe, more frequent weather events. Fishermen catch less fish and at greater cost. Farmers work harder but harvest fewer crops. Fewer tourists come, resulting in fewer jobs and less income, because of such things as severe storms, increasing local costs, beach erosion and changing weather patterns.

3. The recent tragic example of Hurricane Beryl, which struck the Caribbean in early July of this year (2024), is the latest in an increasingly frequent series of such phenomena. At the hearing in April, Barbados's Agent invited the Court to visit the town of Oistins, to enjoy Barbadian hospitality and locally caught fish, before climate change damaged this historic centre of Barbados culture and industry.[2] Her invitation was sadly all too timely. The damage caused by Hurricane Beryl severely destroyed the road access to Oistins. Figures 1 and 2 below show such damage. In addition, among many other losses, Hurricane Beryl sank or damaged many of the fishing vessels in Barbados, destroying a considerable part of its fishing industry.[3]

---

1 *See* "Public Hearing of the Advisory Opinion on Climate Emergency and Human Rights Day 1 Morning Session", *Cave Hill School of Business & Management, The UWI*, 23 April 2024 at 2:58:01, Annex 603.

2 *See* "Public Hearing of the Advisory Opinion on Climate Emergency and Human Rights Day 1 Morning Session", *Cave Hill School of Business & Management, The UWI*, 23 April 2024 at 52:52, Annex 603.

3 *See* "Boat tally at 204 and counting", *Nation News*, 4 July 2024, Annex 577.

*Figure 1: Impassable Road at Oistins Barbados following Hurricane Beryl*[4]

*Figure 2: Impassable Road at Hastings Barbados following Hurricane Beryl*[5]

4. The human, infrastructure and economic losses caused by climate change, such as those recently suffered by Barbados and its Caribbean neighbours in the Americas, have a significant and negative effect on the "global financial system." They are real harms to ordinary people that are the most visible and shocking examples of the harms caused by climate change to small island and developing States and the people who live in them, in the Americas and beyond.

---

4 "Hurricane Beryl kills five as it barrels towards Jamaica", *The Economic Times*, 3 July 2024, Annex 573.

5 "Hurricane Beryl: 35,000 Without Power in Barbados", *Nationwide News*, 1 July 2024, Annex 571.

5. In this requested written supplemental submission, Barbados will identify and focus its observations on three, highly material ways that the climate crisis is harming small island and developing States. These are:

   a. the climate crisis makes investment in small island and developing States less attractive by increasing private companies' "cost of capital", i.e., the risk of doing business, in those States;

   b. the climate crisis makes it more difficult for small island and developing States to secure lenders for sovereign borrowing and reduces the ability to pay sovereign debts, impeding public projects and good governance; and

   c. the climate crisis increases the cost of insurance, with disproportionately adverse consequences for accessing insurance in small island and developing States including, in many cases, rendering insurance unavailable, thereby inhibiting economic activity (let alone human and economic development.

6. First, the climate crisis increases the so-called "cost of capital" disproportionately for private borrowers in small island and developing States. This in turn reduces business investment in these States and impedes these States' human and economic development.

7. "Cost of capital" is an economic term that refers to a rate of profit on money that makes an investment economically feasible and attractive. It is an important concept for private businesses and companies (and certain profit-oriented State-owned enterprises). Such private enterprises have a wide range of investment options to choose from in the global market. When a private enterprise decides to make an investment, it selects one that it anticipates will generate a reasonable rate of return in the future. The anticipated rate of return depends on, effectively, two ingredients: (a) the projected future flows of money the investment will generate compared to the initial investment amounts; and (b) how risky the investment is, i.e., the risk that the projected future money flows will not materialise. At a low cost of capital, a business anticipates a higher rate of less-risky returns and is thus more inclined to make an investment. Conversely, high cost of capital deters investors from investing because the projected returns are lower or less likely to materialise. In such cases, a business

is likely to conclude that such an investment is not worth the risk and efforts of making it.

8. The climate crisis increases the cost of capital because it makes investing in small island and developing States riskier and makes the profits of those investments smaller. That is, the physical reality of climate change and its consequences make doing business in climate-vulnerable States riskier and less profitable. For example, and in relation to Barbados and its Caribbean neighbours in the Americas, beach erosion makes hotels less profitable; fewer tourists will pay to stay (or pay less) if the nearby beaches are damaged by erosion; severe weather events make investments in island residential and tourist developments less valuable. Such real estate could be damaged in a hurricane, with very high repair costs; depleting fisheries makes investing in fishing vessels and ports less profitable; it causes businesses to catch less fish or only with greater difficulty further out in the ocean, at higher costs. There are many other examples of the significant adverse effect of climate change on economic and thus human development in small island developing States.

9. In economic and accounting terms, this increased risk is reflected in a higher cost of capital. The higher cost of capital, in turn, depresses investment in small island and developing States and thus, frustrates economic and human development and activity.

10. Second, the climate crisis makes it harder to find lenders willing to loan money to public treasuries, i.e., to loan money to States. It also makes it harder to repay sovereign debt and therefore reduces the ability of small island and developing States to fund public projects or provide capital for good governance.

11. Sovereign borrowing refers to the ability of a State to convince private lenders and public institutions (including development banks) to loan money to the State. Sovereign borrowing is vital to State functioning around the world. On the basis that the State will later use its tax receipts (or some other financial receipts) to pay back the loans, States fund public projects and government. This includes infrastructure, education, good governance projects and climate change mitigation and adaptation projects. Sovereign debt is a vital component of small island and developing States' ability to provide good lives for their populations.

12. The physical harm and financial losses caused by the climate crisis make it harder for governments of in small island and developing States to convince lenders to loan them money and thus, incur sovereign debt. First, by impeding private investment (as described directly above), the climate crisis negatively affects a State's expected tax receipts in the future, making lenders believe the State will have less money in the future from which to pay them back. Second, the climate crisis also creates numerous severe weather events and other natural disasters that create massive one-off costs requiring substantial sums for disaster relief. These one-off costs negatively affect the State's ability to repay its sovereign debt in a timely manner. Third, the climate crisis means that States have to plan for new and large expenditures towards climate change mitigation and adaptation projects. Paying for these projects also depresses the State's funds from which it can repay sovereign debt. The diminishment of the State's funds in this manner also affects the State's ability to provide social and other services to its citizens and businesses. As a result, economic development is held back in small island and developing States. As explained below, this has a negative impact on the State's ability to protect human rights.

13. As a result, States either cannot get lenders to loan them money or must promise higher interest rates to secure lending, increasing the cost and amount of sovereign debt. Also, sovereign debt becomes harder to pay back – leading to more defaults and economic crises. Moreover, the burden of higher sovereign debt means that States have less money in their treasuries to pay for public projects, whether related to climate change, education, national security and defence, good governance or any other of a myriad other core public needs. This lack of (funds to provide for) such services impedes economic development. For example, the lack of public roads and other infrastructure makes it more difficult to do business, whether the ability of lorries to deliver goods to buyers at speed or the ability of small-scale farmers to bring their goods to market. The lack of funds to provide public services such as those listed above, also has a significant detrimental impact on the ability of States to secure and protect human rights. The economic consequences of climate change thus affect human development as well economic development in small island and developing States.

14. Third, and finally, the climate crisis negatively affects small island and developing States by increasing the cost of insurance and reducing its availability – which further frustrates economic and human development, including large infrastructure projects. It limits the ability of businesses to make investments in climate-vulnerable States. It limits the ability of private individuals to insure their personal property.

15. Insurance is a contract by which, in return for the payment of a sum called a premium, one party (the insurer) agrees to reimburse another party (the insured) for certain of the second party's losses when an anticipated adverse risk materialises in the future. For example, in car insurance, the insurance company promises to pay the driver's losses if he or she has a car accident. Or, as another example, disaster insurance may protect a hotel construction company from the impacts of an unforeseen hurricane destroying a project.

16. When the risk of an insured event is higher, insurance is more expensive. For example, an inexperienced sixteen-year-old driver must pay more for insurance than an experienced forty-five-year-old driver because the sixteen-year-old is more likely to have a car crash. Similarly, when hurricanes become more frequent and ferocious, the cost of disaster insurance rises because insurers project that a destructive hurricane is more likely to require them to pay out on the insurance contract.

17. Insurance is a fundamental ingredient to most global economic activity today, whether for multinational companies, local businesses or private individuals. Insurance helps make lenders and other economic actors more secure in their financial decisions. Insurance covers myriad economic acts, including those as simple as making representations in a so-called mergers and acquisitions agreement. Major infrastructure and other projects require insurance for a host of reasons, including to secure financing from banks and other institutions. Without reasonably available insurance, economic activity is frustrated and economic development is hindered.

18. As discussed above, the physical reality of the climate crisis raises risks of all sorts of economic activities in small island and developing States – from adverse weather events to fisheries losses. Climate change, thus, carries an increasing risk of loss in terms of the large and increasing (i) scale of the damage; and (ii) chance of the risk materialising. As a result, insurers demand more to insure risks in small island and

developing States and, in certain cases, simply refuse to insure risks in those States. The unavailability of insurance has a significant impact on the economy in two ways. First, the lack of insurance impedes a State's recovery from a severe weather event or other major loss caused by climate change. Second, the unavailability of insurance leads to underinvestment because lenders and private companies no longer have the comfort of insurance to protect their investments.

19. Finally, this submission ends with a discussion of the various measures that States and international institutions, such as multilateral development banks, can undertake to ameliorate the deleterious effects of the climate crisis on the financial system, including insurance, for vulnerable States. Examples of such measures are set out in **Section VI** below. Barbados invites the Court to consider such measures, including as part of the obligation of States to cooperate, to protect and to preserve the climate system and other parts of the environment. In June of this year, 2024, the UN Secretary-General asked the same of certain States; he urged them

> to commit to using their influence within Multilateral Development Banks to make them better, bigger and bolder. And able to leverage far more private finance at reasonable cost.[6]

20. The UN Secretary-General similarly demanded the following of financial institutions:

> financial institutions are also critical because money talks. It must be a voice for change. I urge financial institutions to stop bankrolling fossil fuel destruction and start investing in a global renewables revolution; to present public, credible and detailed plans to transition [funding] from fossil fuels to clean energy with clear targets for 2025 and 2030; and to disclose your climate risks — both physical and transitional — to your shareholders and regulators. Ultimately, such disclosure should be mandatory.[7]

21. In this respect, this Advisory Opinion will be of particular significance to the practices of the Inter-American Development Bank (the "**IADB**"). Like the Court, the IADB is part of the Inter-American System and has a shared membership in the member States of the Organization of American States. As such, this Court's opinion will be highly influential on the IADB. The IADB's practices are important to address the financial

---

6 "Humanity Needs 'Exit Ramp off Road to Climate Hell', Secretary-General Insists, Urging Bolder, Faster Action to Save Planet, in Address at American Natural History Museum", *United Nations*, 5 June 2024 ("**Humanity Needs 'Exit Ramp off Road to Climate Hell'**"), Annex 580.

7 Humanity Needs 'Exit Ramp off Road to Climate', Annex 580.

consequences of climate change on vulnerable States in the Americas. The IADB finances many projects in the region and provides States with sovereign debt. It is "the main source of development financing for Latin America and the Caribbean."[8] Therefore, it has a significant role in the financial system in the Americas and in ameliorating the negative consequences of climate change on vulnerable States.

22. Barbados has taken a leading role in tackling the impending climate change-induced financial and economic crisis. Two seminal examples of Barbados's leadership in this field are described in Barbados's Observations: (a) the 2021 Bridgetown Declaration, which calls for action on the environmental dimension of COVID-19 sustainable development and recovery in Latin America and the Caribbean;[9] and (b) the 2022 Bridgetown Initiative for the Reform of the Global Financial Architecture,[10] which calls for collective action related to financial mechanisms available to developing States to address the disproportionate burden of climate change shouldered by these States.

23. Recently, since the filing of Barbados's Observations, Barbados has continued these efforts. On 29 May 2024, Barbados launched the Bridgetown Initiative 3.0 for consultation at the Fourth International Conference on Small Island Developing States.[11] The Bridgetown Initiative 3.0 follows on from the 2022 Bridgetown Initiative and the Bridgetown Initiative 2.0. As noted in this third rendition, the first Bridgetown Initiative raised "a paradigm shift in the global discourse on scaling capital flows and reshaping the financing system to achieve the SDGs and spur climate action."[12] Such a paradigm shift and further major changes in the financial system are needed to address the financial burden imposed by climate change on

---

8 "About the IDB", *Inter-American Development Bank,* Annex 585.

9 *See* Bridgetown Declaration, Report XXII Meeting of the Forum of Ministers of Environment of Latin America and the Caribbean, 1-2 February 2021, Annex III, UNEP/LAC-IG.XXII/7, 5 February 2021, Annex 307.

10 *See* The 2022 Bridgetown Agenda for the Reform of the Global Financial Architecture*, Government of Barbados*, *Ministry of Foreign Affairs and Foreign Trade*, 23 September 2022, Annex 187.

11 'Bridgetown Initiative 3.0' unveiled to tackle debt, climate crises", *Barbados Today*, 29 May 2024, Annex 570; "Conversation on the Call to Action and Bridgetown 3.0 - SDG Media Zone, SIDS4 (27-30 May 2024 - Antigua and Barbuda)", *UN Web TV*, 28 May 2024, Annex 518; "Bridgetown Initiative 3.0, Consultation Draft (27th May 2024)", *Bridgetown Initiative*, 28 May 2024, Annex 499.

12 "Bridgetown Initiative 3.0, Consultation Draft (27th May 2024)", *Bridgetown Initiative*, 28 May 2024, page 1, Annex 499.

climate-vulnerable States. As again noted in the Bridgetown Initiative 3.0: "[t]inkering at the margins of a broken system is akin to rearranging deck chairs on the Titanic. It is time to act now in solidarity for people and planet."[13] The UN Secretary-General agrees with Barbados on this point. He has likewise observed that:

> we also need more fundamental reform. That leads me onto my third point: finance. If money makes the world go round, today's unequal financial flows are sending us spinning towards disaster. The global financial system must be part of the climate solution. Eye-watering debt repayments are drying up funds for climate action. Extortion-level capital costs are putting renewables virtually out of reach for most developing and emerging economies.[14]

---

[13] "Bridgetown Initiative 3.0, Consultation Draft (27th May 2024)", *Bridgetown Initiative*, 28 May 2024, page 1, Annex 499.

[14] Humanity Needs 'Exit Ramp off Road to Climate', Annex 580.

## II. INTRODUCTION

24. These supplemental written observations provide additional information on certain financial consequences of climate change on States, as requested by the Court during the first public hearing on the request for advisory opinion OC-32 "Climate Emergency And Human Rights", in Bridgetown, Barbados, as held from 23 to 25 April 2024. During the hearing, the Court, President Judge Nancy Hérnandez-Lopez requested that Barbados provide supplemental written observations concerning the impact of the climate crisis on the global financial system.

25. Barbados commends the Court for requesting these supplemental written observations. Barbados agrees with the Court that these financial aspects are significant to the Court's advisory opinion and also of direct concern to the implementation of human rights in the Americas.[15]

26. **Section I** above provided a summary of these supplemental written observations. After this introduction, **Section III** describes how the climate crisis increases the cost of capital in States vulnerable to the consequences of climate change. **Section IV** sets out how the climate crisis affects sovereign debt and public finances for States vulnerable to the consequences of climate change. **Section V** clarifies how the climate crisis limits the availability and access to insurance. **Section VI** offers examples of measures that would ameliorate the financial consequences of the cost of capital, insurance and sovereign debt identified in **Sections III to V**.

---

[15] *See* Barbados also refers to its (i) written observations, submitted to the Court on 18 December 2024 ("**Barbados's Written Observations**") and (ii) oral submissions as submitted to the Court during the first session of the public hearings in Barbados on 23 April 2024 ("**Barbados's Oral Submissions**").

## III. THE CLIMATE CRISIS MAKES SMALL ISLAND AND DEVELOPING STATES LESS DESIRABLE FOR INWARD INVESTMENT BECAUSE IT INCREASES THEIR "COST OF CAPITAL"

27. This Section explains how climate change hinders private investment and economic development in small island and developing States by increasing the cost of capital.

28. The cost of capital is a technical economic term. Cost of capital refers to a rate of profit on money that makes an investment economically feasible and attractive. Cost of capital is the minimum return on investment that justifies the decision to invest.[16]

29. The cost of capital is driven by the perception of risk.[17] The cost of capital, i.e., this expected financial return is calculated as a mathematical average of two costs associated with raising funds for investments:[18] (i) the cost of debt and (ii) the cost of equity. The cost of debt is the interest an investor must pay on its debt/loans.[19] The cost of equity is the financial returns expected by shareholders for their investments.[20] A high cost of capital indicates that the investment is prone to risks.[21] If an investment is likely to only render low profits, a business is likely to conclude that such an investment is not worth the risk and efforts of making it. The high cost of capital thus deters investors from investing.

30. Climate change increases the perception of risk and therefore increases the cost of capital. Higher cost of capital has a significant negative impact on the economy of vulnerable States making investments unviable. Due to the increased risk perception,

---

16 *See* "Reducing the Cost of Capital – Strategies to unlock clean energy investment in emerging and developing economies", World Energy Investment Special Report, *International Energy Agency*, February 2024 ("**Reducing the Cost of Capital – Strategies to unlock clean energy investment in emerging and developing economies**"), page 19, Annex 505.

17 *See* C. Donovan and C. Corbishley, "The cost of capital and how it affects climate change mitigation investment", *Grantham Institute Briefing Paper No. 15*, 2016 ("**The cost of capital and how it affects climate change mitigation investment**"), page 3, Annex 541.

18 *See* Reducing the Cost of Capital – Strategies to unlock clean energy investment in emerging and developing economies, page 20, Annex 505.

19 *See* Reducing the Cost of Capital – Strategies to unlock clean energy investment in emerging and developing economies, page 20, Annex 505.

20 *See* Reducing the Cost of Capital – Strategies to unlock clean energy investment in emerging and developing economies, page 20, Annex 505.

21 *See* G. Kling et al., "The impact of climate vulnerability on firms' cost of capital and access to finance", *World Development*, 2021, ("**The impact of climate vulnerability on firm's cost of capital and access to finance**"), page 3, Annex 550.

banks charge higher interest and investors seek higher returns while investing in such States.

31. **Section III.A** explains that the climate crisis increases the cost of capital in vulnerable States, with particularly devastating effects in small and developing island States such as Barbados. **Section IV.B** details how climate change increases the risk perception of lenders which makes debt more costly for investors. **Section IV.C** sets out how, in turn, investors expect higher returns on their investments for what they perceive to be more risky investments. **Section IV.D** describes how climate change**,** through the resulting increase in the cost of capital, also harms the tourism industry of small island and developing States. In addition, as **Section IV.E** notes, the physical effect of climate change has a direct impact on the investments themselves, lowering their productivity. Climate Change thus, as **Section IV.F** concludes, discourages investment in small island and developing States and has significant negative macro-economic impacts on their economies.

### A. The climate crisis increases the cost of capital in vulnerable States, with particularly devastating effects in small island and developing States such as Barbados

32. The risk of physical damage caused by climate change makes States vulnerable to climate change and less attractive to investments. Climate change leads to hurricanes, floods, droughts and heat waves, as well as harm to industries like tourism, fishing and agriculture. The damage caused by such climate change events includes damaged infrastructure, disrupted supply chains and reduced business productivity, rendering States a less attractive destination for investors.[22] As a result, foreign investors are cautious about investing in small island and developing States due to these risks and prefer investing in economies with lower risks.[23] In other words, States with a higher vulnerability to climate change have a lower inflow of foreign investment as compared to States with higher climate change readiness. A graphical representation of this phenomenon can be found in Annex 553 and is presented here also as Figure 3.

---

22 *See* F. Shear et al., "Sensing the heat: Climate change vulnerability and foreign direct investment inflows", *Research in International Business and Finance*, 2023 ("**Sensing the heat: Climate change vulnerability and foreign direct investment inflows**"), page 2, Annex 553.

23 *See* Sensing the heat: Climate change vulnerability and foreign direct investment inflows, page 3, Annex 553.

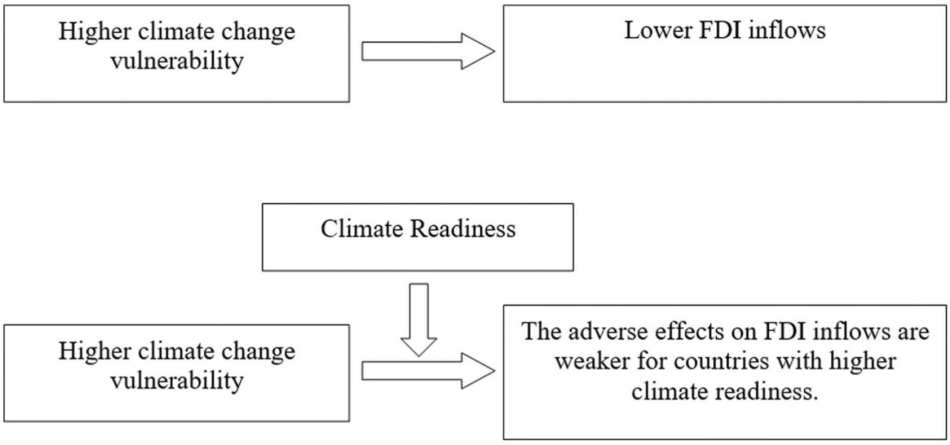



*Figure 3: Climate change vulnerability and FDI inflows*[24]

33. This higher vulnerability affects the overall business environment, particularly in the tourism sector.[25] The physical impacts increase the risks for investors and lenders alike raising the cost of capital to invest in such vulnerable States. The high cost of capital dampens future cash flows and creates a hurdle for new investments.[26]

### B. Physical effects of climate change increase lenders' risk perception, raising the cost of debt for investors

34. Climate change makes it less likely that banks or other lenders will loan to fund investments located in climate-vulnerable States, or only at a higher interest rate (i.e., at a higher cost) to compensate for the increased risk associated with the project due to climate change.

35. As noted, climate change increases the risk of damage to investment in climate-vulnerable States. Lenders prefer to lend money for projects that carry little risk so that they are assured the principal sum loaned and the interest is repaid to them. In general, banks and other lenders are risk-averse and in certain rare circumstances risk-neutral[27] and are less likely to lend loans to businesses with significant risks. Banks

---

24 *See* Sensing the heat: Climate change vulnerability and foreign direct investment inflows, Graphical Abstract, Annex 553.

25 *See* Sensing the heat: Climate change vulnerability and foreign direct investment inflows, page 3, Annex 553.

26 *See* "Cost of Capital and Capital Allocation – Investment in the Era of 'Easy Money'", *Morgan Stanley*, 28 February 2024, page 2, Annex 602.

27 *See* Y. Nishiyama, "Are Banks Risk-Averse?", *Eastern European Journal*, 2007, pp. 471-490, page 486, Annex 535.

view the physical effects of climate change as a tangible risk and prefer lending money to businesses that are not exposed to climate change.[28] Given this increased risk perception, banks charge higher interest rates to cover their expected losses.[29]

36. The interest rates that the businesses pay are an indication of their cost of debt,[30] which is calculated as a ratio of the total interest paid and the total long-term debt of a business.[31] A high cost of debt indicates the default risk of the business,[32] which increases the risks for the banks, which in turn charges businesses higher interest rates on their future borrowings.[33] This risk of default is heightened due to frequent physical effects of climate change such as hurricanes, floods, droughts and rise in sea levels which can make loans unviable for banks.[34] These climate change events make it difficult for banks to predict their financial risks.[35]

37. In December 2023, the Bank for International Settlement (the "**BIS**") published a working paper emphasising that banks charge higher interest rates to borrowers in areas affected by floods, heat, drought and sea-level rise.[36] After flood events, banks charge higher interest spreads, which can be up to 19 basis points, since in such cases banks assess that the risk of default increases by 2.6 times.[37] For a long-term loan this can be as much as a 10% increase in the cost of the loan.[38]

---

28 *See* S. Chava, "Environmental Externalities and Cost of Capital", *Management Science*, 2014, pp. 1-25 (**"Environmental Externalities and Cost of Capital**"), page 1, Annex 537.

29 *See* The impact of climate vulnerability on firms' cost of capital and access to finance, page 2, Annex 550; *see also* E. Erragragui, "Do creditors price firms' Environmental, Social and Governance risks?", *Research in International Business and Finance*, 2018, pp. 197-207, page 203, Annex 543.

30 *See* R. Kumar, *Valuation: Theories and Concepts* (Academic Press, 2016), page 109, Annex 542.

31 *See* R. Kumar, *Valuation: Theories and Concepts* (Academic Press, 2016), page 109, Annex 542.

32 *See* R. Kumar, *Valuation: Theories and Concepts* (Academic Press, 2016), page 109, Annex 542.

33 *See* Environmental Externalities and Cost of Capital, page 1, Annex 537.

34 *See* The impact of climate vulnerability on firms' cost of capital and access to finance, page 2, Annex 550.

35 *See* The impact of climate vulnerability on firms' cost of capital and access to finance, page 2, Annex 550.

36 *See* "The effects of climate change-related risks on banks: a literature review", Working Paper 40, *Bank for International Settlement*, December 2023 ("**The effects of climate change-related risks on banks: a literature review**"), pages 2-4, Annex 507.

37 *See* The effects of climate change-related risks on banks: a literature review, page 3, Annex 507.

38 *See* The effects of climate change-related risks on banks: a literature review, page 3, Annex 507.

38. For regions affected by heat and droughts, the interest rate can increase by as much as 11 basis points – and it is estimated that even a marginal increase in climate risk can increase loan spreads by over 5% for long-term loans.[39] Similarly, for sea-level rise the interest rate on mortgages for real estate is over 7 basis points higher than for mortgages for properties that are not exposed to this risk.[40] The BIS also estimates that investors lose about half the estimated physical damages induced by any natural disaster linked to climate change.[41] Further, immediately after the physical effects of climate change, banks tend to reduce lending and increase their loan loss reserves.[42]

39. A working paper by BIS clearly establishes the link between the physical effects of climate change and the cost of debt of a business. Banks view climate change events as a risk and lend at high rates of interest. For some businesses, it would be difficult to secure the required capital and face underinvestment.[43] Further, with increased climate change risks, banks may soon adopt credit rationing,[44] which refers to a situation where credits are denied for some applicants even if they are willing to pay a higher rate of interest.[45]

40. Since 1995, there has been an increase in the intensity and distribution of hurricanes in the Caribbean.[46] In 2017, Hurricanes Maria and Irma caused a total damage of over USD 220 billion affecting several Caribbean islands, with some States suffering a loss

---

39 *See* The effects of climate change-related risks on banks: a literature review, page 4, Annex 507.

40 *See* The effects of climate change-related risks on banks: a literature review, page 4, Annex 507.

41 *See* The effects of climate change-related risks on banks: a literature review, page 4, Annex 507.

42 *See* T. Conlon et al., "Climate risk and financial stability: evidence from syndicated lending", *The European Journal of Finance*, 2024, page 23, Annex 559.

43 *See* K. K. Agoraki et al., "The relationship between firm-level climate change exposure, financial integration, cost of capital and investment efficiency", *Journal of International Money and Finance*, 2024 (**"The relationship between firm-level climate change exposure, financial integration, cost of capital and investment efficiency"**), page 2, Annex 560.

44 *See* The impact of climate vulnerability on firms' cost of capital and access to finance, page 2, Annex 550.

45 *See* Y. Jin and S. Zhang, "Credit Rationing in Small and Micro Enterprises: A Theoretical Analysis", *Sustainability*, 2019, page 1, Annex 546.

46 *See* E. Kemp-Benedict et al., "Climate Impacts on Capital Accumulation in the Small Island State of Barbados", *Sustainability*, 2019 ("**Climate Impacts on Capital Accumulation in the Small Island State of Barbados**"), pages 2-3, Annex 547.

of over 100% of their GDP.[47] Notably, Hurricane Maria's damage loss totalled 224% of Dominica's GDP.[48]

41. The Bank's risk perception increases with such events where the physical effects are so devastating that it can financially cripple a State. Hence, the cost of obtaining a loan for a business operating in these regions is high. This is proven by empirical studies.[49]

### C. Investors expect higher returns on their investments in States vulnerable to climate change which increases the cost of equity

42. A business in need of funding can raise such funds through either lending or capital. **Section III.A** and **Section III. B** explained how climate change increases the cost of lending. Climate change, however, also increases the other option to raise funds, for it also increases the cost of equity.

43. Climate change and its associated risk increase the perception of risk by equity investors who are willing to provide funds in exchange for a share of the business. Such investors demand high returns on investments in light of such increased risks.

44. Investors assess risks before deciding to invest. They determine what the risk is that the company in which they plan to invest will be profitable and able to return dividends on that investment. Investors are normally compensated through dividends but such dividends are only paid when the business is profitable.[50] Debts, on the other hand, are continuing obligations notwithstanding the profitability of the business. Further, investors also risk losing everything if a business is liquidated after bankruptcy and the investors are normally the last to claim any stake in such instances.[51] The risks assumed by investors are far greater than those assumed by the lenders, who normally have a preferential claim over assets belonging to the business

---

47 *See* Climate Impacts on Capital Accumulation in the Small Island State of Barbados, page 3, Annex 547.

48 *See* Climate Impacts on Capital Accumulation in the Small Island State of Barbados, page 3, Annex 547.

49 *See* The impact of climate vulnerability on firms' cost of capital and access to finance, page 4, Annex 550.

50 *See* The cost of capital and how it affects climate change mitigation investment, page 5, Annex 541.

51 *See* The cost of capital and how it affects climate change mitigation investment, page 5, Annex 541.

in the event of bankruptcy. This threat of bankruptcy and the risk of losing their original investment shapes the risk perception of investors in any business.[52]

45. This risk assessment includes climate change risks. Investors view climate change risks in similar terms as political or liability risks that can potentially incur a loss.[53] Thus, climate change risks are considered a relevant factor in determining the viability of an investment. This increased risk perception raises the cost of capital, as their "expected return on equity" is uncertain and depends on the future value of the business.[54] While there are economic models to determine the cost of equity, these models involve two tasks – "measure risk" and "decide whether the expected financial return compensates sufficiently."[55] Hence, it is a measure of risk and anticipated proportional returns.

46. Investors thus consider potential losses to the business due to climate change events like hurricanes and floods when deciding to invest in vulnerable States.[56] Unsurprisingly, economists emphasise that businesses in regions with greater exposure to climate risks have higher financing costs and are financially constrained.[57]

47. Developing States face greater uncertainty in foreign investments since investors are aware of the physical risks of climate change.[58] Businesses facing such risks are conservative and are often slow in expanding their operations. They tend to hold more cash reserves, rely less on short-term borrowings and more on long-term

---

52 *See* The cost of capital and how it affects climate change mitigation investment, page 5, Annex 541.

53 *See* J. A. Soussane et al., "Does Climate Change Constitute a Financial Risk to Foreign Direct Investment? An Empirical Analysis on 200 Countries from 1970 to 2000", *Weather, Climate, and Society*, 2023, pp. 31-43, page 41, Annex 554.

54 *See* The cost of capital and how it affects climate change mitigation investment, page 4, Annex 541.

55 *See* The cost of capital and how it affects climate change mitigation investment, page 6, Annex 541.

56 *See* H. H. Huang et al, "The impact of climate risk on firm performance and financing choices: An international comparison", *Journal of International Business Studies*, 2017("**The impact of climate risk on firm performance and financing choices: An international comparison**"), page 2, Annex 545.

57 *See* The impact of climate vulnerability on firms' cost of capital and access to finance: An international comparison, page 9, Annex 545.

58 *See* Z. Xing and Y. Wang, "Climate risk, climate risk distance and foreign direct investment" *International Journal of Climate Change Strategies and Management*, 2023, pp. 51-57 ("**Climate risk, climate risk distance and foreign direct investment**"), page 48, Annex 558.

borrowings, and pay less in dividends.[59] This dissuades investors, as sometimes the risks outweigh the potential returns. In such circumstances, investors are less likely to further invest due to the high cost of capital that has little to no incentive for the investors.

48. When investors assess climate risks before deciding to invest in a State they particularly notice if the risks are higher or lower than their home State.[60] Studies indicate that if investors' home States have a lower climate risk, then this negatively affects foreign investment for States with higher climate vulnerability.[61] A majority of foreign investors are from States with lesser climate vulnerability than small island States. As a result, these investors are visibly reluctant to invest in climate vulnerable States. Such reluctance is due to the increased risk perception due to which investors expect higher returns on their investments.[62]

### D. Climate change adversely affects the tourism industry in small island and developing States

49. In several small island and developing States, tourism is the largest contributor to the State's GDP – indeed, the industry is often perceived as a key contributor to the development of these States.[63] However, due to the physical effects of climate change, the tourism industry is undergoing certain structural or long-term changes adverse to small island and developing States.[64]

50. Barbados and other Caribbean States suffer beach erosion due to climate change. In its Fifth Assessment Report, the Intergovernmental Panel on Climate Change ("**IPCC**") estimated that up to "60% of the tourist resort properties would be at risk of

---

59 *See* The impact of climate risk on firm performance and financing choices: An international comparison, page 2, Annex 545.

60 *See* Climate risk, climate risk distance and foreign direct investment, page 54, Annex 558.

61 *See* Climate risk, climate risk distance and foreign direct investment, page 54, Annex 558.

62 *See* Environmental Externalities and Cost of Capital, page 1, Annex 537; The cost of capital and how it affects climate change mitigation investment, page 4, Annex 541.

63 *See* J. S. Hess and I. Kelman, "Tourism Industry Financing of Climate Change Adaptation: Exploring the Potential in Small Island Developing States", *Climate, Disaster and Development Journal*, 2017, pp. 33-45 ("**Tourism Industry Financing of Climate Change Adaptation: Exploring the Potential in Small island Developing States**"), page 34, Annex 544.

64 *See* Tourism Industry Financing of Climate Change Adaptation: Exploring the Potential in Small Island Developing States, page 34, Annex 544.

beach erosion damage, potentially transforming the competitive position and sustainability of coastal tourism destinations."[65] Sea-level rising is another physical effect of climate change that impacts investors and by extension the State.[66]

51. In addition, these States experience changes in weather patterns, water scarcity, loss of biodiversity and ocean acidification.[67] These lead to several impacts such as beach loss, damage to tourism that increases the cost of insurance, loss of natural attractions as well as species and heat stress for tourists.[68]

52. These climate change events affect tourism through four distinct impact pathways:

    a. direct impacts from changing climate;

    b. indirect environmental change and cultural heritage impacts;

    c. indirect impacts associated with societal change; and

    d. impacts induced by climate change mitigation and adaptation in other sectors.[69]

53. Sea level rise and storm surge lead to climate hazards, such as inundation, erosion, coastal flooding and bleaching.[70] These hazards eventually lead to loss of revenue, infrastructure damages, loss of employment and loss of visitor expenditure which

---

65 L. A. Nurse et al., *Small Islands*, in CLIMATE CHANGE 2014 – IMPACTS, ADAPTATION AND VULNERABILITY: PART B: REGIONAL ASPECTS: WORKING GROUP II CONTRIBUTION TO THE IPCC FIFTH ASSESSMENT REPORT, ed. V. R. Barros et al. (Cambridge University Press 2014), pp. 1613-1654, page 1627, Annex 539.

66 *See* The impact of climate vulnerability on firms' cost of capital and access to finance, page 4, Annex 550.

67 *See* Tourism Industry Financing of Climate Change Adaptation: Exploring the Potential in Small Island Developing States, page 34, Annex 544.

68 *See* Tourism Industry Financing of Climate Change Adaptation: Exploring the Potential in Small Island Developing States, pages 34-35, Annex 544.

69 *See* A. Pathak et al., "Impacts of climate change on the tourism sector of a Small Island Developing State: A case study for the Bahamas", *Environmental Development*, 2021 ("**Impacts of climate change on the tourism sector of a Small Island Developing State: A case study for the Bahamas**"), page 4, Annex 551.

70 *See* Impacts of climate change on the tourism sector of a Small Island Developing State: A case study for the Bahamas, page 4, Annex 551.

adversely affects the tourism industry.[71] The following Figure 4, as found in Annex 551, explains the ways in which climate change negatively affects the tourism industry in a small island and developing States.

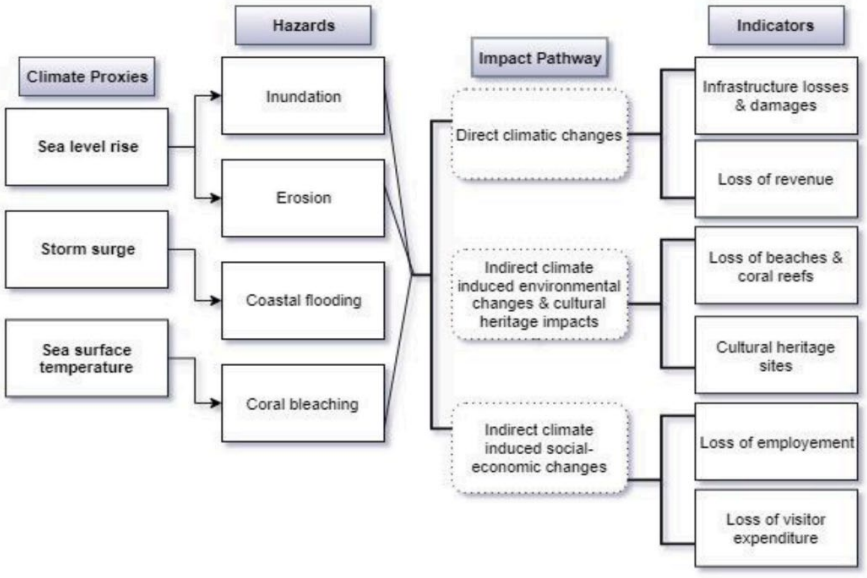



*Figure 4: Selected climate change impact pathways for tourism in SIDS* [72]

54. Climate change negatively affects tourism in several ways, including directly through the loss and damage itself, indirectly through the loss of beaches and cultural heritage and finally, it also brings about a socio-economic impact, including loss of employment opportunities. For States in the Caribbean, which are largely dependent on tourism, these impacts have a profound effect on the economy and make investments in these States riskier for investors.

### E. The physical effects of climate change have a direct negative impact on investments by diminishing their productivity

55. Businesses and investors face an increase in the cost of capital in such States due to the weather events related to climate change, as it leads to lower and volatile earnings

---

71 *See* Impacts of climate change on the tourism sector of a Small Island Developing State: A case study for the Bahamas, page 4, Annex 551.

72 *See* Impacts of climate change on the tourism sector of a Small Island Developing State: A case study for the Bahamas, page 4, Annex 551.

as well as reduced cash flows.[73] The physical effects of climate change also negatively affect productivity, which in turn affects investments. Increasing temperatures may lead to a reduction in economic growth due to reduced production and income.[74] Studies indicate that a decline in productivity influences investment behaviour.[75] Unmitigated climate change decreases cumulative investment by over 20% which leads to an income loss of over USD 104 trillion by 2100.[76]

56. This finding appears consistent with other research publications. In a research finding published in *Nature*, one of the world's most cited scientific journals, by leading economists at Stanford University and the University of California, Berkley, it was highlighted that unmitigated warming of the climate will reduce average global income by 23% in the decades to come, widening global inequality.[77] Thus, climate change events not only have a physical effect but a far-reaching global economic impact.

57. The reasons for potential income losses for the years to come are:

    a. recurring direct damages caused by the warming that reduces income available each year;

    b. slowed economic growth due to reduced availability of investable income; and

    c. decreased economic growth due to reduced incentive to invest, as there is lesser anticipation of returns.[78]

---

73 *See* The impact of climate risk on firm performance and financing choices: An international comparison, page 2, Annex 545.

74 *See* S. N. Willner et al., "Investment incentive reduced by climate damages can be restored by optimal policy", *Nature Communications*, 2021 ("**Investment incentive reduced by climate damages can be restored by optimal policy**"), page 2, Annex 552; M. Burke et al., "Global non-linear effect of temperature on economic production", *Nature*, 2015 ("**Global non-linear effect of temperature on economic production**"), page 1, Annex 540.

75 *See* Investment incentive reduced by climate damages can be restored by optimal policy, page 2, Annex 552.

76 *See* Investment incentive reduced by climate damages can be restored by optimal policy, page 2, Annex 552.

77 *See* Global non-linear effect of temperature on economic production, page 1, Annex 540.

78 *See* Investment incentive reduced by climate damages can be restored by optimal policy, pages 2-3, Annex 552.

58. An illustration of this effect can be seen below in Figure 5 below:

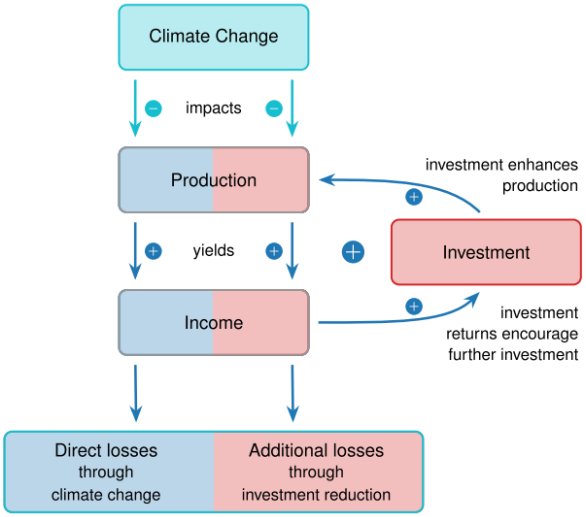



**Fig. 1 Illustration of the investment effect.** Climate change reduces productivity, which translates into direct income losses (blue boxes). The prospect of reduced investment returns in the future renders investment less attractive. Accordingly, economically optimal investment is reduced and less production enhancing capital is accumulated. As a result, economic growth slows down and yields a future of persistently lowered income. This effect arising through reduced investment incentives is here referred to as the additional investment effect (depicted by red boxes).

*Figure 5: Illustration of the investment effect* [79]

59. Businesses exposed to extreme weather events and the physical impacts of climate change will see significant increases in costs in the coming decades.[80] The costs of physical risks of climate change can be up to 28% per annum of the value of assets held by businesses.[81] The declining value of assets would also mean reduced value of stakes held by investors.

60. The physical effects of climate change events can bring about operational difficulties as well. For instance, extreme heat lowers labour productivity, negatively affects employee health and safety,[82] and will cause power grids to be under pressure due to increased air conditioning usage and delays in the supply chain because of damages to

---

79 *See* Investment incentive reduced by climate damages can be restored by optimal policy, page 2, Annex 552.

80 *See* "Quantifying the financial costs of climate change physical risks for companies", *S & P Global*, 20 November 2023 ("**Quantifying the financial costs of climate change physical risks for companies**"), Annex 599.

81 *See* Quantifying the financial costs of climate change physical risks for companies, Annex 599.

82 *See* Quantifying the financial costs of climate change physical risks for companies, Annex 599.

transportation links on account of the extreme heat.[83] These factors increase the operational costs of business.

61. The financial impact on assets due to climate risks across various sectors, in another 25 years, is indicated by way of Figure 6 and the impact by 2090 is indicated in Figure 7.

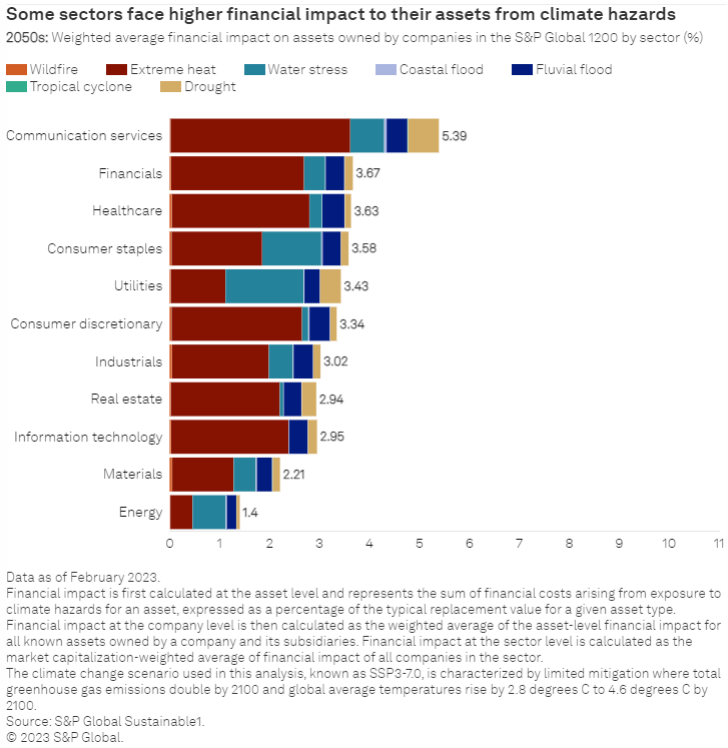



*Figure 6: 2050s: Weighted average financial impact on assets owned by companies in the S&P Global 1200 by sector (%)*[84]

83 *See* Quantifying the financial costs of climate change physical risks for companies, Annex 599.

84 *See* Quantifying the financial costs of climate change physical risks for companies, Annex 599.

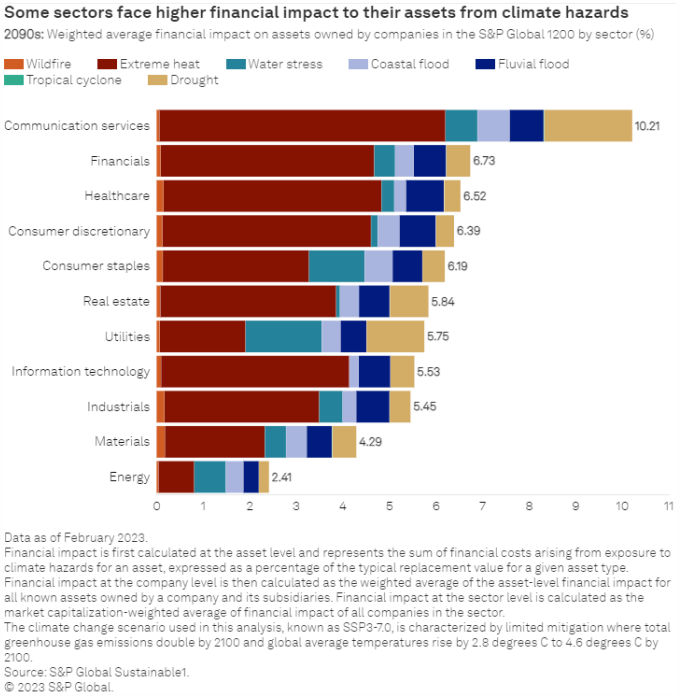



*Figure 7: 2090s: Weighted average financial impact on assets owned by companies in the S&P Global 1200 by sector (%)*[85]

62. The figures mentioned above clearly indicate that extreme heat is the primary physical risk causing a financial impact across various sectors in the future. This heat is followed by drought and water stress.

### F. Climate change discourages investments in small island and developing States and has significant macroeconomic impacts

63. The factors mentioned in this **Section III**, cumulatively affect the economic conditions of small island and developing States.[86] For instance, a higher cost of capital affects the business and its ability to expand, affecting profitability and the cost of equity.[87]

64. Higher costs of corporate financing restrain economic growth and development, reduce tax revenue, limiting the scope of governments to invest in necessary public

---

85 *See* Quantifying the financial costs of climate change physical risks for companies, Annex 599.

86 *See* Climate Impacts on Capital Accumulation in the Small Island State of Barbados, page 1, Annex 547.

87 *See* The relationship between firm-level climate change exposure, financial integration, cost of capital and investment efficiency, page 2, Annex 560.

infrastructure for climate adaptation.[88] This weakens the States' economies and places investors at a disadvantage, as compared to other markets.[89] Eventually, such climate-vulnerable States will see a significant reduction in new investors, while also facing the likelihood of existing investors deciding to disinvest.

65. In addition, a recent study by Imperial College London and SOAS University of London estimates that due to climate change, interest payments in public and private sectors in developing States have increased by USD 62 billion in the past decade and are anticipated to increase up to USD 168 billion in the decade to follow.[90] This will dissuade financial institutions from lending to businesses faced with climate risks.

66. Several examples show that the cost of capital has already increased due to the climate crisis. For instance, in the United States of America, PG & E filed for bankruptcy in 2019 given the potential liabilities of over USD 30 billion it was facing due to wildfires.[91] The shareholders lost over USD 20 billion while the creditors will also be unable to recover their entire debts.[92]

67. Studies show that over the last century, the global sea level has risen by up to 8 inches and could rise by another 6.5 feet by the year 2100,[93] which will have a severe negative impact on small island and developing States like Barbados. In addition to the above instances, the following are some specific instances of States in which businesses are likely to suffer due to the physical effects of climate change, and which may have a lasting impact on these economies.

---

88 *See* The impact of climate vulnerability on firms' cost of capital and access to finance, pages 9-10, Annex 550.

89 *See* The impact of climate vulnerability on firms' cost of capital and access to finance, pages 9-10, Annex 550.

90 *See* "Climate Change and the Cost of Capital in Developing Countries: Assessing the Impact of Climate Risks on Sovereign Borrowing Costs", *United Nations Environment Programme*, May 2018, page 12, Annex 510.

91 *See* "PG & E Is Just The First Of Many Climate Change Bankruptcies", *Forbes*, 24 January 2019, Annex 563.

92 *See* "PG & E Is Just The First Of Many Climate Change Bankruptcies", *Forbes*, 24 January 2019, Annex 563.

93 *See* Risks and Opportunities From the Changing Climate – Playbook for the Truly Long-Term Investor, *Cambridge Associates*, 2015, page 5, Annex 586.

68. The Caribbean region suffers among the worst effects of climate change and people's lives and livelihoods are at risk due to cyclones, hurricanes, floods and rising sea levels.[94] The loss in economic value can be over 2% of the annual GDP.[95] Other studies conclude that the physical effects of climate change have a significant negative impact on the GDP of small island States[96] with a projected reduction of up to 4% by 2030.[97]

69. Seven out of the ten States that suffered the largest average losses per unit of GDP due to climate change are Caribbean countries.[98] In fact, "Caribbean countries account for 10 times more in terms of monetary damages" from climate change "and 20 times more in terms of climate events" compared to other States worldwide.[99] The European Investment Bank also estimates that nearly all the countries in the Caribbean suffer damage and losses exceeding 1% of their GDP every year and in the last two decades the damage due to climate change exceeded 2%.[100]

70. In terms of the economic impact of climate change, Caribbean States are the worst affected due to acute climate events. The following Figure 8 represents the economic impact of physical risk due to climate change, by various components, such as acute risk, agriculture, sea level rise, infrastructure, productivity and water scarcity.

---

94 *See* "Effects of climate change in Latin America and the Caribbean", *Development Bank of Latin America and the Caribbean*, 21 November 2023, Annex 568; *see also* "Climate risks in Latin America and the Caribbean – Are banks ready for the green transition?"*, European Investment Bank*, September 2023 ("**Climate risks in Latin America and the Caribbean – Are banks ready for the green transition?**"), page 3, Annex 532.

95 *See* "Effects of climate change in Latin America and the Caribbean", *Development Bank of Latin America and the Caribbean*, 21 November 2023, Annex 568.

96 *See* L. A. Nurse et al., *Small Islands*, in CLIMATE CHANGE 2014 – IMPACTS, ADAPTATION AND VULNERABILITY: PART B: REGIONAL ASPECTS: WORKING GROUP II CONTRIBUTION TO THE IPCC FIFTH ASSESSMENT REPORT, ed. V. R. Barros et al. (Cambridge University Press 2014), pp. 1613-1654, page 1625, Annex 539.

97 *See* How Moody's Assesses the Physical Effects of Climate Change on Sovereign Issuers, page 17, Annex 587.

98 *See* Climate risks in Latin America and the Caribbean – Are banks ready for the green transition, page 3, Annex 532.

99 *See* Climate risks in Latin America and the Caribbean – Are banks ready for the green transition, page 3, Annex 532.

100 *See* Climate risks in Latin America and the Caribbean – Are banks ready for the green transition, page 3, Annex 532.

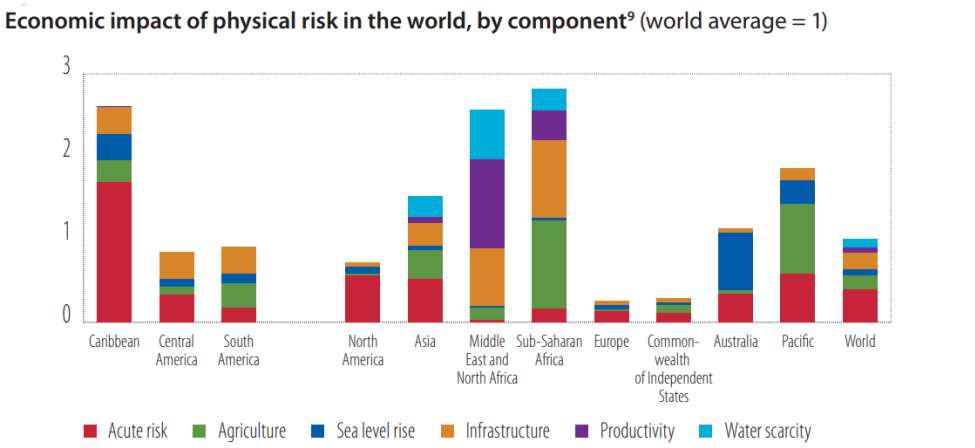



*Figure 8: Economic impact of physical risk in the world, by component*[101]

71. There are specific examples too. A study conducted on the islands of New Providence and Paradise Island in the Bahamas estimates that several tourism properties lie in storm surge zones.[102] Sea level rise combined with weak, moderate and strong storms can result in coastal flooding of 34%, 69% and 83% of the tourism infrastructure respectively in these islands.[103] Due to climate change, hotels and resorts are also susceptible to coastal erosion.[104]

---

101 *See* Climate risks in Latin America and the Caribbean – Are banks ready for the green transition, page 4, Annex 532.

102 *See* Impacts of climate change on tourism sector of a Small Island Developing State: A case study for the Bahamas, page 6, Annex 551.

103 *See* Impacts of climate change on tourism sector of a Small Island Developing State: A case study for the Bahamas, page 8, Annex 551.

104 *See* Impacts of climate change on tourism sector of a Small Island Developing State: A case study for the Bahamas, page 9, Annex 551.

## IV. THE CLIMATE CRISIS NEGATIVELY AFFECTS SOVEREIGN DEBT AND PUBLIC FINANCES DISPROPORTIONATELY FOR VULNERABLE STATES

72. Climate change also has a severe negative impact on the ability of States, in particular developing States, to raise and pay sovereign debt for public purposes. Sovereign debt refers to the money borrowed by a State, through its government, from either public lenders, such as development banks, including the World Bank Group, the International Monetary Fund (the "**IMF**") and the American Development Bank, or private lenders, such as private commercial banks, investment funds and private bond holders.

73. The cost of sovereign debt is determined in large part by the interest payable overtime on the initial amount borrowed by the States – also called the principal amount – as well as any penalties payable when, for example, a State misses an interest payment or repayment of part of the principal amount. An important factor that determines the interest rate is the risk that the loan will not be repaid. In turn, an important factor in setting the interest rate for loans taken out by States is the credit rating, also called the sovereign debt rating - given to that State by so-called rating agencies, such as Fitch, Moody's, and Standard & Poor's.[105] Credit ratings are numerical values indicating the creditworthiness of potential borrowers, including States.[106] They allow lenders and investors to understand how likely a State is to default on its bond or loan. Factors that determine the credit rating given to a State by the credit rating agencies include the following: "current account balance, debt payment history and timeliness, banking and financial operations, future economic outlook, and national economic strength."[107]

74. Climate change negatively affects sovereign debt in at least the following two ways. First, the climate crisis increases the cost of sovereign borrowing for States vulnerable to the negative impact of climate change, as set out in **Section IV.A** below. Second, compounding on this problem, the climate crisis forces States to increase public spending to (i) mitigate and adapt to climate change, *see* **Section IV.B** below; and (ii) repair their infrastructure after a shock climatic event such as a hurricane or drought,

---

105 *See* "Credit ratings", The World Factbook, *Central Intelligence Agency* ("**CIA Credit Ratings**"), Annex 582.

106 *See* CIA Credit Ratings, Annex 582.

107 *See* CIA Credit Ratings, Annex 582.

*see* **Section IV.C**. In combination, these two impacts greatly curtail the ability of developing States, especially small island States, to provide financing for public goods for their populations. As a result, small island States, such as Barbados, are forced to choose between people or planet. **Section IV.D** describes how so-called "vulture funds" exasperate this climate change sovereign debt crisis, through unfair lending practices.

### A. The increased risks associated with climate change increase the cost of borrowing for vulnerable States, reducing the capital available for public spending

75. Sovereign debt is an important way for States to finance necessary public spending for the public good, including investments in climate change mitigation and adaptation. Such financing is much needed now and in future. **Section IV.B** below provides further information on significant funds needed for climate change mitigation and adaptation.

76. A State's heightened vulnerability to climate change risks increases the risk of lending to such States, which in turn raises the cost of public borrowing. This has been noted by the IMF.[108] A 2023 IMF report explains the unequal debt burden for States in regard to climate change in the following terms:

> The composition of the debt impact [of emerging market economies] is notably different from advanced economies on account of higher mitigation investment needs, larger carbon revenue potential, and higher borrowing costs that are sensitive to debt. An increase in debt will be particularly challenging for emerging market and developing economies already experiencing high debt and rising interest costs, alongside sizable adaptation needs.[109]

77. Similarly, the credit agency Moody's states in one of its reports that "sovereign issuers with smaller, less diversified economies and geographies, lower incomes and quality of infrastructure, and lower fiscal flexibility are more susceptible to the credit implications of climate change."[110] An authoritative 2020 research report authored by

---

108 *See* "Fiscal Monitor: Climate Crossroads: Fiscal Policies in a Warming World", *International Monetary Fund*, October 2023, Annex 526.

109 "Fiscal Monitor: Climate Crossroads: Fiscal Policies in a Warming World", *International Monetary Fund*, October 2023, page xi, Annex 526.

110 "How Moody's Assesses the Physical Effects of Climate Change on Sovereign Issuers", *Moody's Investors Service*, 7 November 2016, page 1, Annex 587.

Ulrich Volz, Director, Centre for Sustainable Finance, SOAS University of London and Sara Jane Ahmed, V20 Finance Advisor, V20 Secretariat hosted by the Global Center on Adaptation, titled "Macrofinancial Risks in Climate Vulnerable Developing Countries and the Role of the IMF" (the "**2020 Macrofinancial Climate Change Risks and the Role of the IMF Report**") reaches the same conclusion.[111] It states:

> 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.[112]

78. The reason for this is well-established. A higher climate risk – i.e., an increased likelihood of negative effects of climate change and shock climatic events – creates a greater risk of default on a debt for any State.[113] In response to such risk, credit-rating agencies downgrade a State's credit rating and borrowers set higher interest rates. This means that States most negatively affected by climate change incur a higher cost of debt.[114] Borrowing is thus more expensive for those States[115] -- meaning these States can only borrow less money for public governance and projects.

79. Sovereign debt risk and climate change are connected through a complex mix of interrelated factors. Figure 9 below, published by IMF, demonstrates the dual channels and many potential impacts of climate change on the economy of a State. The accompanying article explains this dual impact as follows:

---

111 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). *See* "Macrofinancial Risks in Climate Vulnerable Developing Countries and the Role of the IMF: Towards a Joint V20-IMF Action Agenda", *The Vulnerable Twenty*, October 2020, ("**2020 Macrofinancial Climate Change Risks and the Role of the IMF Report**"), page 2, Annex 501.

112 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 19, Annex 501.

113 *See* Credit Rating Agencies and Sovereign Debt: Four proposals to support achievement of the SDGs, Policy Brief No. 131, *United Nations Department of Economic and Social Affairs*, March 2022, page 2, Annex 514.

114 *See* "Global Small Island Developing States (SIDS) Debt Sustainability Support Service: a new financial compact for resilient prosperity", *The International Institute for Environment and Development*, May 2024 ("**Global SIDS Debt Sustainability Support Service**"), page 16, Annex 605.

115 *See* "Small States' Resilience to Natural Disasters And Climate Change—Role For The IMF", *International Monetary Fund*, December 2016, pages 7-9, Annex 521.

> climate change affects the financial system through two main channels…. The first involves physical risks, arising from damage to property, infrastructure, and land. The second, transition risk, results from changes in climate policy, technology, and consumer and market sentiment during the adjustment to a lower-carbon economy. [116]

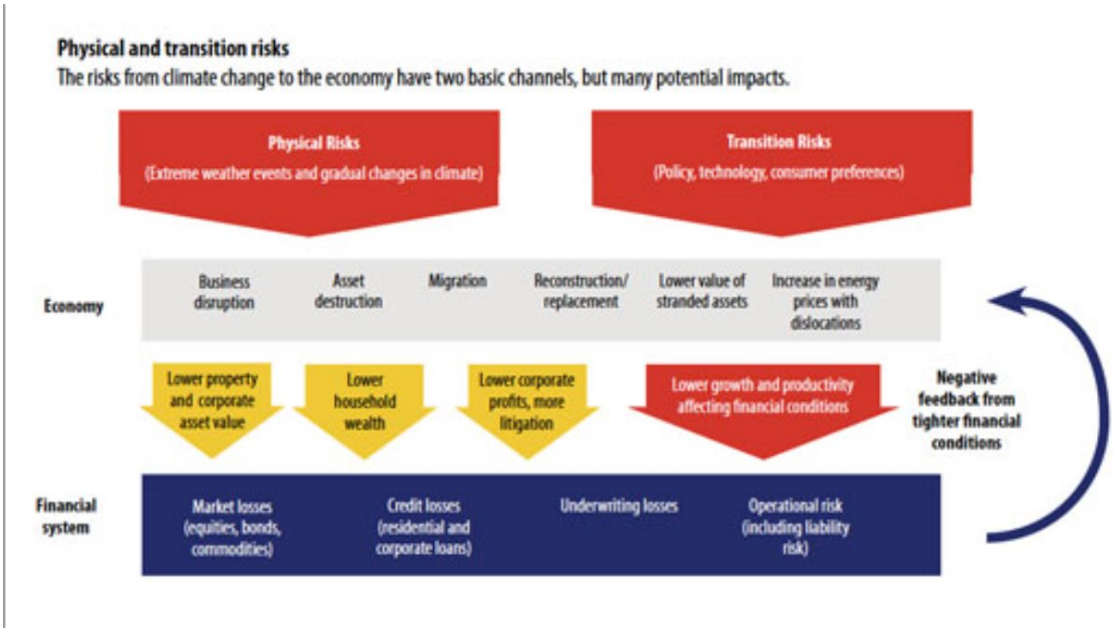



*Figure 9: Climate change risks on the economy*[117]

80. Another study, which was approvingly cited by the 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, identified seven different "transmission channels through which climate change can distress public finances and amplify sovereign risk." The "transmission channels" are shown in Figure 10 below:[118]

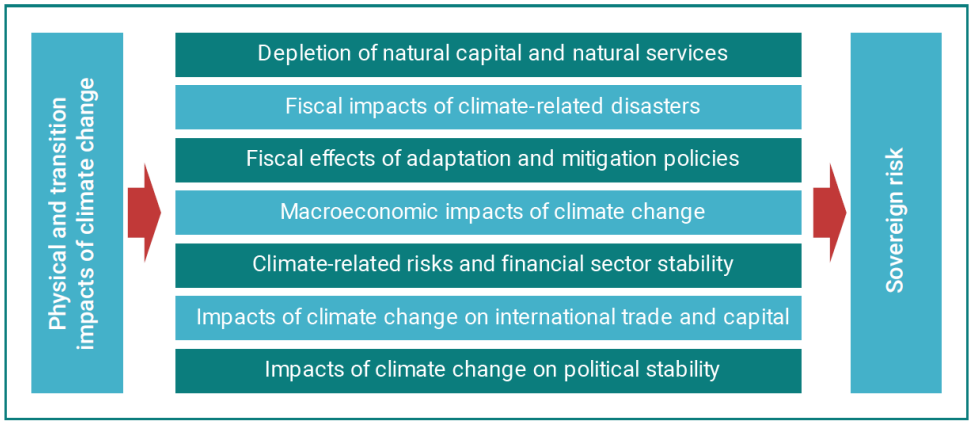
---

116 P. Grippa et al., "Climate Change And Financial Risk", *Finance & Development*, 2019, pp. 26 – 29, page 26, Annex 549.

117 *See* P. Grippa et al., "Climate Change And Financial Risk", *Finance & Development*, 2019, pp. 26 – 29, page 27, Annex549.

118 *See* 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 11, Annex 501.

Figure 2: Transmission channels of risk




Source: Volz et al. (2020).

*Figure 10: Seven transmission channels through which climate change can distress public finances and amplify sovereign risk*[119]

81. The economic impact of climate change begins with its physical effects which are increasingly noticeable and intense;[120] such events can be classified into "climate shocks" and "climate trends."[121] Credit rating agency Moody's distinguishes the above based on its impact. "Climate shocks" such as droughts, floods and cyclones are acute effects of climate change.[122] On the other hand, "climate trends" are those having chronic effects. This means changes are experienced over decades and include instances such as a rise in mean global temperature or a decrease in cold temperature extremes.[123]

82. As a result, there is a direct relation between climate vulnerability and sovereign debt distress.[124] The same relation has been shown by the Notre Dame Global Adaptation Initiative (the "**ND-GAIN**"), which is a programme within the Notre Dame

---

119 *See* 2020 Macrofinancial Climate Change Risks and the Role of the IMF, page 11, Annex 501.

120 *See* S. Millard, "Macroeconomics and Climate Change", *National Institute Economic Review*, 2023, pp. 1-7, page 1, Annex 556.

121 *See* "How Moody's Assesses the Physical Effects of Climate Change on Sovereign Issuers", Moody's Investors Service, 7 November 2016, page 3, Annex 587.

122 *See* "How Moody's Assesses the Physical Effects of Climate Change on Sovereign Issuers", Moody's Investors Service, 7 November 2016, page 3, Annex 587.

123 *See* "How Moody's Assesses the Physical Effects of Climate Change on Sovereign Issuers", Moody's Investors Service, 7 November 2016, page 3, Annex 587.

124 *See* 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 11, Annex 501.

Environmental Change Initiative of Notre Dame University.[125] Figure 11 below plots climate vulnerability as measured by the ND-GAIN index against debt service payments as a fraction of exports (over 2022-2028).[126] The ND-Gain index measures a country's vulnerability to the negative impact of climate change against six factors: (i) food, (ii) water, (iii) health, (iv) ecosystem service, (v) human habitat and (vi) infrastructure.[127] In the graph below, the yellow upward line demonstrates that climate-vulnerable States incur higher debt service costs relative to their export earnings. In other words, there is a direct relationship between climate vulnerability and the cost of debt, even accounting for other economic criteria.

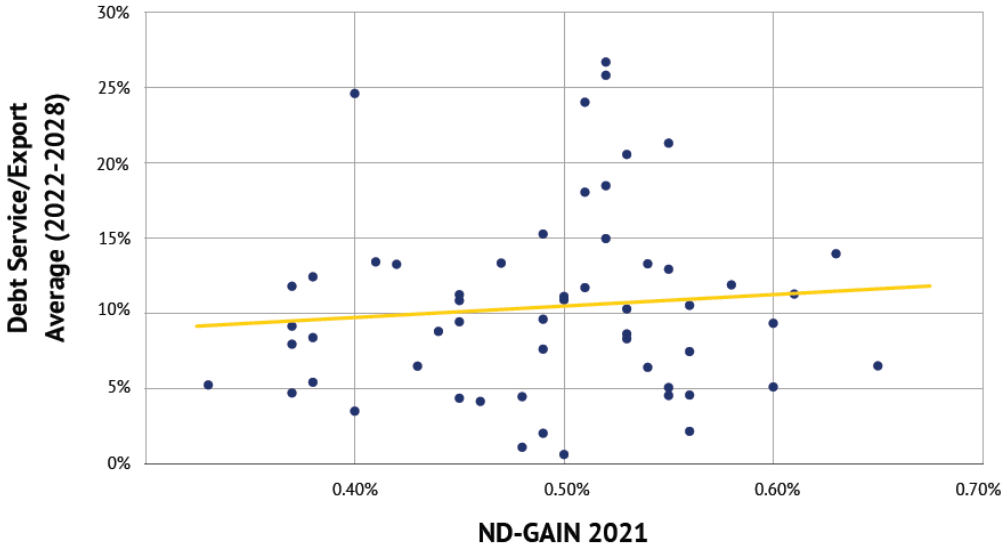



*Figure 11: Climate debt – service payments as a fraction of exports for the period 2022-2028*[128]

83. The relationship is not linear, however. It is a compounding problem that has a great negative impact on the most vulnerable and indebted States. In other words, there is a

---

125 *See* "About", *Notre Dame Global Adaptation Initiative*, Annex 581. *See also* "IMF-Adapted ND-GAIN Index", *International Monetary Fund Climate Change Dashboard*, 1 December 2023, page 2, Annex 528 ("The IMF-Adapted ND-GAIN index is an adaptation of the original index, adjusted by IMF staff to replace the Doing Business (DB) Index, used as source data in the original ND-GAIN, because the DB database has been discontinued by the World Bank in 2020 and it is no longer allowed in IMF work").

126 *See* V20 Debt Review: An account of debt in the Vulnerable Group of Twenty, *The Vulnerable Twenty*, April 2024 (the "**2024 V20 Debt Review Report**"), page 12, Annex 503.

127 See 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, pages 23-24, Annex 501.

128 *See* 2024 V20 Debt Review Report, page 12, Annex 503.

vicious cycle between climate vulnerability and sovereign debt distress. As described in the 2024 V20 Debt Profile Report of The Vulnerable 20 (V20) Group, a bloc of 68 climate-vulnerable economies: [129] "underinvestment accentuates climate vulnerability and results in higher debt loads as countries recover and rebuild from climate impacts which in turn crowds out space for new investments."[130] Figure 12 below offers a visualisation of this vicious cycle of debt and climate, as published in a 2023 peer-reviewed article by a top scientist from Boston University, cited with approval in the 2024 V20 Debt Review Report:

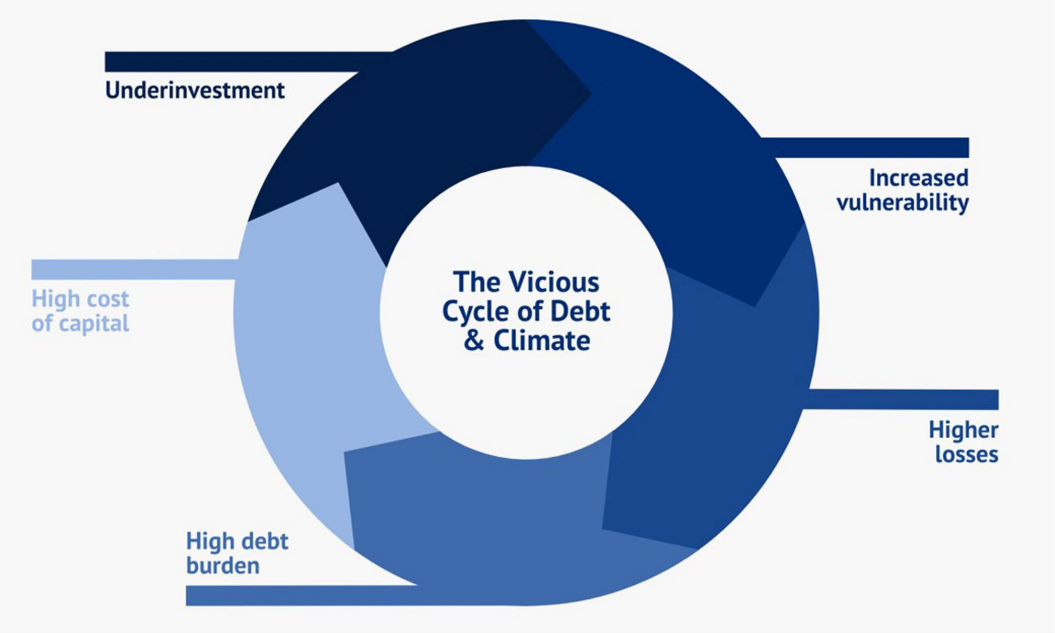



*Figure 12: The vicious cycle of climate vulnerability and indebtedness*[131]

84. The higher debt burden due to climate vulnerability is a significant burden to bear for climate-vulnerable States, in particular small island and developing States, such as Barbados. As observed in a Working Paper published by the International Institute

---

129 Afghanistan, Bangladesh, Barbados, Benin, Bhutan, Burkina Faso, Cambodia, Chad, Colombia, Costa Rica, Democratic Republic of the Congo, Dominica, Dominican Republic, Eswatini, Ethiopia, Fiji, The Gambia, Ghana, Grenada, Guatemala, Guinea, Guyana, Haiti, Honduras, Kenya, Kiribati, Kyrgyzstan, Jordan, Lebanon, Liberia, Madagascar, Malawi, Maldives, Marshall Islands, Mongolia, Morocco, Mozambique, Namibia, Nepal, Nicaragua, Niger, Pakistan, Palau, Palestine, Papua New Guinea, Paraguay, Philippines, Rwanda, Saint Lucia, Samoa, Senegal, Sierra Leone, South Sudan, Sri Lanka, Sudan, Tanzania, Timor-Leste, Togo, Tongo, Trinidad and Tobago, Tunisia, Tuvalu, Uganda, Vanuatu, Vietnam and Yemen; *see* "Members", *The Vulnerable Twenty*, Annex 561.

130 2024 V20 Debt Review Report, page 5, Annex 503.

131 K. P. Gallagher et al., "Reforming Bretton Woods institutions to achieve climate change and development goals", *One Earth,* 2023, pp. 1291-1303, page 1295, Annex 555; *see also* 2024 V20 Debt Review Report, page 6, Annex 503.

for Environment and Development (the "**IIED**"), a sustainable development think tank, this is the case because they "have limited capacity, resources and infrastructure to invest in climate resilience. This leaves them unable to recover from loss and damage in the same way as developed countries, exacerbating their indebtedness."[132] Small island and developing States are thus forced to seek external financing to adapt to climate change, which takes the form of loans. As noted in a recent 2023 paper from the IIED: "[a]round half of climate finance provided to small island and developing States in 2017–2018 took the form of loans."[133]

85. The higher interest rates payable by climate-vulnerable States are significant. On this basis, the 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report estimated 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.[134]

86. Similar numbers are confirmed by the IIED, according to which "[h]igher interest rates based on climate vulnerability are predicted to cost the most vulnerable countries [USD]168 billion over the next decade."[135] This is reflected in the comparatively high

---

132 "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 4, Annex 597. *See also* page 6 ("The Emergency Events Database (EM-DAT), for example, recorded US$2.97 trillion in losses from disasters between 2000 and 2019. As a percentage of GDP, losses to LDCs were three times greater than in high-income countries (CRED, 2020). Countries in the global South have seen their debts increase by 120% between 2010 and 2021, reaching their highest level since 2001 (Jones, 2022).")

133 "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 5, Annex 597.

134 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 19, Annex 501. Likewise, the IMF referred to a 2020 study that found 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."

135 "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 10, Annex 597.

cost of capital, as demonstrated by the high real interest rates, of V20 countries, shown in the table in Figure 13 below:

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]

*Figure 13: The V20's comparatively high cost of capital economic environment*[136]

87. The V20 Debt Profile Report estimates that "[o]ver the period of 2022-2030, V20 members will be responsible for debt service payments totalling [USD] 904.7 billion."[137] As a result and at present, 18 of 68 V20 members are already in debt distress or at a high risk of debt distress, according to the IMF's classification system.[138] Another study, also cited by the IIED, calculated that "63 sovereigns may see their credit ratings downgraded by 2030 due to climate change. This could add more than [USD] 200 billion to their annual interest payments on public debt."[139] This is of particular concern for small island and developing States. For, as observed in a recent report published by the IIED, "[m]ore than 40% of SIDS are nearing or already in debt distress, and an alarming 70% surpass the debt-to-GDP sustainability threshold of 40%."[140]

88. The climate crisis can lead to unsustainable borrowing costs, i.e., the climate crisis threatens debt sustainability. Sovereign debt is sustainable when the ratio between liabilities and the repayment capacity does not grow indefinitely. Put differently, "if the growth rate of debt exceeds the growth rate of the country's ability to generate income to repay the debt, the debt burden becomes heavier."[141] States thus face an

---

136 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 20, Annex 501.

137 2024 V20 Debt Review Report, page 9, Annex 503.

138 *See* 2024 V20 Debt Review Report, page 10, Annex 503.

139 "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 10, Annex 597. *See also* "Rising temperatures, melting ratings", *VOX EU*, 25 March 2021, Annex 592.

140 Global SIDS Debt Sustainability Support Service, page 3, Annex 605.

141 2024 V20 Debt Review Report, page 10, Annex 503.

impossible choice between climate goals and fiscal sustainability. In a recent 2023 report, the IMF worded the dilemma as follows:

> policymakers thus face a fundamental trade-off: On the one hand, relying mostly on spending-based measures to reach net zero goals by midcentury will become increasingly costly, possibly raising public debt by 45−50 percent of GDP for a representative large-emitting country, putting debt on an unsustainable path. On the other hand, limited climate action would leave the world exposed to adverse consequences from global warming.[142]

89. Climate change-induced debt instability is already a reality for all but four V20 countries.[143] One example, presented by the IMF, is the large-scale infrastructural investment to reduce Grenada's climate vulnerability. As shown in Figure 14 below, given the cost of sovereign debt, Grenada requires USD 15 million in grant financing annually until 2030 in order to stay within a debt-to-GDP ratio of 60%.[144] However, as calculated by the IMF, "[i]f Grenada is unable to reduce the cost of capital or access grants, public debt is projected to rise to 70% by 2030."[145]

---

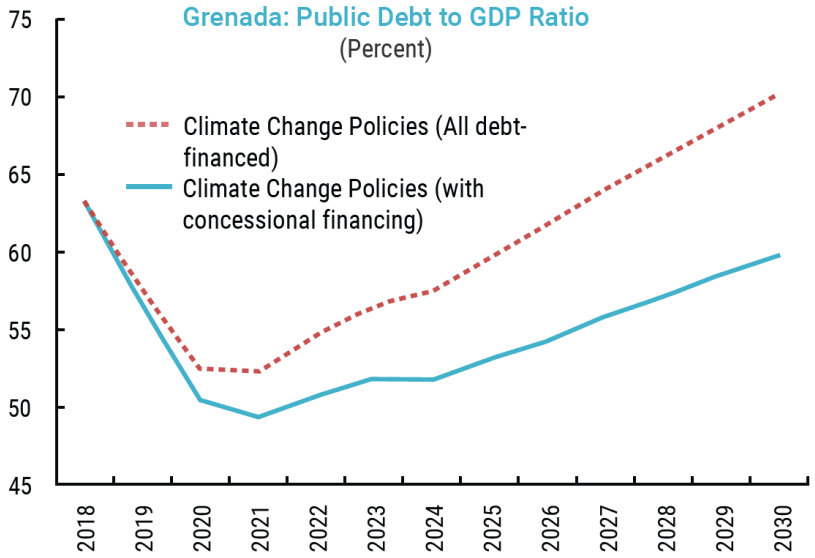
142 Executive Summary, "Fiscal Monitor: Climate Crossroads: Fiscal Policies in a Warming World", *International Monetary Fund*, October 2023, page x, Annex 526.

143 *See* 2024 V20 Debt Review Report, page 16, Annex 503.

144 "Building Resilience in Developing Countries Vulnerable to Large Natural Disasters", *International Monetary Fund,* June 2019, Annex 522, page 14.

145 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 23, Annex 501*; see also* "Building Resilience in Developing Countries Vulnerable to Large Natural Disasters", *International Monetary Fund*, June 2019, page 14, Annex 522.

Figure 6: Public Debt to GDP Ratio in Grenada




Source: IMF (2019e).

*Figure 14: Public Debt to GDP Ratio in Grenada*[146]

90. The climate-induced debt crisis is not only an economic problem. It is also a human rights issue. As noted above, climate change causes the cost of sovereign borrowing to spike, through the vicious cycle between these two elements described above. As such, as State has less money to spend on policy measures including measures to protect human rights, impeding human development in vulnerable States. Instead, more money needs to be directed to servicing sovereign debt, i.e., paying the increasing interest on sovereign debt and potential penalties for missed interest or repayments of part of the borrowed amount. Climate change thus has a severe negative impact on the economic development of vulnerable States. As discussed in **Section IV.B** below, the climate-induced debt crisis also hinders climate change mitigation and adaptation projects. Not executing on those projects could cause small island and developing States to lose significant territory and people to the negative consequences of climate change, for example through beach erosion and severe and deadly weather events. As such, as noted by the IIED, "[f]or the [small island and developing States], breaking free from this vicious cycle is not just an economic imperative but a question of survival."[147]

146 *See* 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 23, Annex 501.

147 Global SIDS Debt Sustainability Support Service, page 6, Annex 605.

## B. The obligation to mitigate and adapt to climate change also triggers a difficult question for vulnerable States: whether to dedicate public funds to the repayment of debt or to climate change amelioration projects

91. **Section VI** of Barbados's Written Statement provides that States have an obligation to mitigate and repair climate change damage. This concept has been accepted almost universally, as shown in the written statements of States before this Court,[148] the recent decision of the International Tribunal of the Law of the Sea on Climate Change[149] and, also, the public pronouncements of States.[150]

92. However, mitigating and adapting to climate change requires money. In emerging markets and developing States alone, "an additional USD 1.8 trillion is needed to address the climate crisis", according to the Bridgetown Initiative 3.0.[151] The UN Secretary-General, in a recent speech on 5 June 2024, noted that "climate chaos" will cost USD 38 trillion "even if emissions hit zero tomorrow."[152] A 2017 OECD study estimates that the global investment required for addressing climate change is in the trillions of USD, with investments in infrastructure alone requiring about USD 6 trillion per year up to 2030.[153] The 2016 Global Commission on the Economy and Climate estimates that globally until 2030 around USD 90 trillion will have to be

---

148 *In the Request for an Advisory Opinion on the Climate Emergency and Human Rights Submitted to the Inter-American Court of Human Rights by the Republic of Colombia and the Republic of Chile*, 9 January 2023, *see* Written Observations of Brazil, 18 December 2023, paragraphs 54-59, Written Observations of Chile, 18 December 2023, pages 32-39, Written Observations of Colombia, 18 December 2023, paragraphs 64-69, Written Observations of El Salvador, 18 December 2023, page 12, Written Observations of Mexico, 18 December 2023, pages 29-34, paragraphs 99-123, Written Observations of Paraguay, 18 December 2023, pages 4-5, paragraphs 6, 8, Written Observations of Vanuatu, 18 December 2023, page 15, paragraph 36.

149 *See Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law*, *Advisory Opinion, 21 May 2024*, paragraphs 243, 321, 339, 367, 400, 406, 418, Annex 500.

150 *See* "Secretary-General's remarks to Major Economies Forum on Energy and Climate [as delivered]", *United Nations*, 17 September 2021, Annex 512; "PM's National Statement at COP28: December 01 2023", *GOV.UK*, 1 December 2023, Annex 497; "Opening and closing remarks by Commissioner Hoekstra during plenary debate on COP28 in the European Parliament", *European Commission*, 20 November 2023, Annex 531.

151 "Bridgetown Initiative 3.0, Consultation Draft (27th May 2024)", *Bridgetown Initiative*, 28 May 2024, page 2, Annex 499.

152 Humanity Needs 'Exit Ramp off Road to Climate', Annex 580.

153 "Investing in Climate, Investing in Growth", *OECD*, 23 May 2017, pages 15, 27, 28,92-94, 105, Annex 533.

spent on infrastructure for climate adaptation and mitigation, a considerable part of which States will have to finance.[154] The 2016 Adaptation Finance Gap Report calculated that climate change adaptation costs rise between USD 140 billion and USD 300 billion per year by 2030, and increase to an amount between USD 280 billion and USD 500 billion per year by 2050.[155] The following table, included in a publication of the IMF, offers the 2017 cost of individual climate change adaptation policies:

154 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 13, Annex 501.

155 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 14, Annex 501.

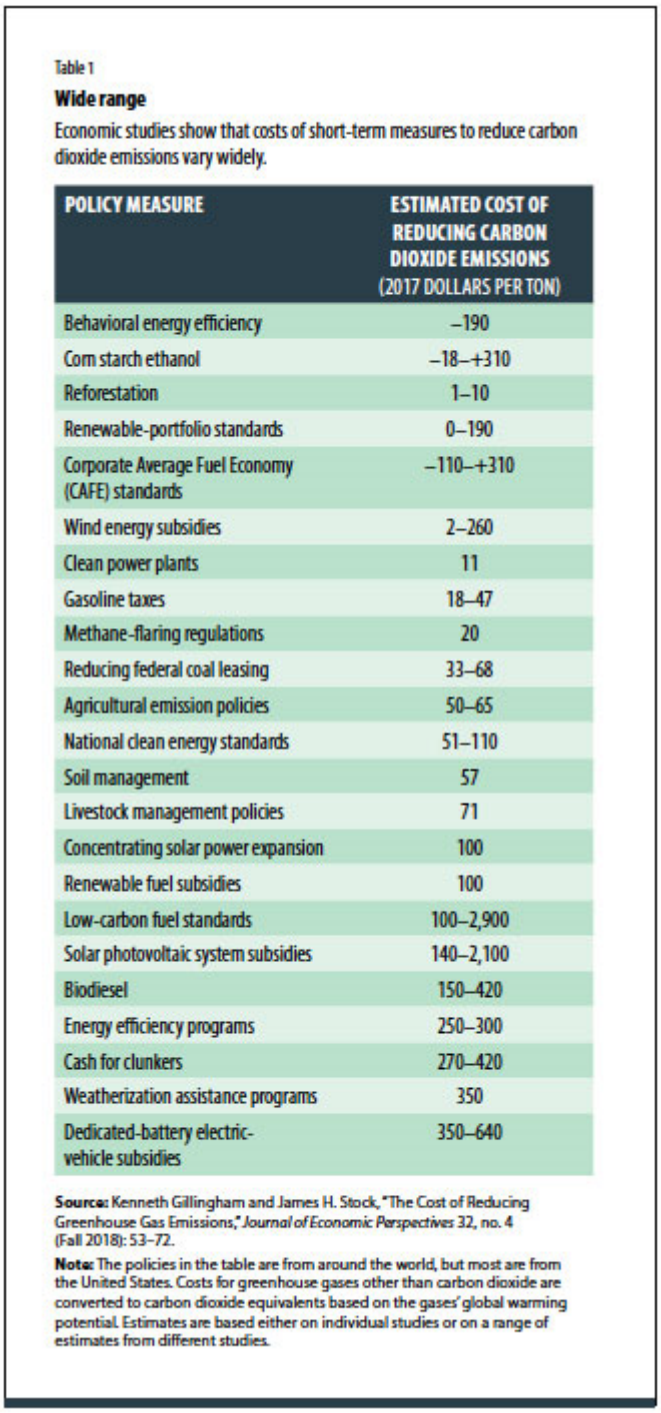


Table 1

**Wide range**

Economic studies show that costs of short-term measures to reduce carbon dioxide emissions vary widely.

| POLICY MEASURE | ESTIMATED COST OF REDUCING CARBON DIOXIDE EMISSIONS (2017 DOLLARS PER TON) |
|---|---|
| Behavioral energy efficiency | –190 |
| Corn starch ethanol | –18–+310 |
| Reforestation | 1–10 |
| Renewable-portfolio standards | 0–190 |
| Corporate Average Fuel Economy (CAFE) standards | –110–+310 |
| Wind energy subsidies | 2–260 |
| Clean power plants | 11 |
| Gasoline taxes | 18–47 |
| Methane-flaring regulations | 20 |
| Reducing federal coal leasing | 33–68 |
| Agricultural emission policies | 50–65 |
| National clean energy standards | 51–110 |
| Soil management | 57 |
| Livestock management policies | 71 |
| Concentrating solar power expansion | 100 |
| Renewable fuel subsidies | 100 |
| Low-carbon fuel standards | 100–2,900 |
| Solar photovoltaic system subsidies | 140–2,100 |
| Biodiesel | 150–420 |
| Energy efficiency programs | 250–300 |
| Cash for clunkers | 270–420 |
| Weatherization assistance programs | 350 |
| Dedicated-battery electric-vehicle subsidies | 350–640 |

**Source:** Kenneth Gillingham and James H. Stock, "The Cost of Reducing Greenhouse Gas Emissions," *Journal of Economic Perspectives* 32, no. 4 (Fall 2018): 53–72.

**Note:** The policies in the table are from around the world, but most are from the United States. Costs for greenhouse gases other than carbon dioxide are converted to carbon dioxide equivalents based on the gases' global warming potential. Estimates are based either on individual studies or on a range of estimates from different studies.

*Figure 15: Varying costs of short-term measures to reduce carbon dioxide emissions*[156]

93. Climate crisis mitigation and adaptation thus directly and significantly increase State expenditure. At present, such funds are not available to developing States and as observed by the UN Secretary-General recently:

156 *See* K. Gillingham, "Carbon Calculus", *Finance & Development*, 2019, pp. 7-11, page 9, Annex 548.

> but change on the ground depends on money on the table. For every dollar needed to adapt to extreme weather, only about five cents is available. As a first step, all developed countries must honour their commitment to double adaptation finance to at least $40 billion a year by 2025. And they must set out a clear plan to close the adaptation finance gap by COP29 in November.[157]

94. In addition to higher expenditures, the climate crisis also further increases the need for States to rely on sovereign debt in two other ways. First climate change causes public finance to become further limited due to a shortfall in government revenue and tax collections following climatic disasters and the long-term effects of climate change levels,[158] such as a decrease in productivity and industry in fishery, agriculture and tourism.[159] Second, severe weather events and other climatic- or environmental disasters require increased public spending to aid the repair and recovery following such an event. Again, this effect is more pronounced for small island and developing States. The steep upward increase of the green line in the graph below indicates that such States experience more revenue volatility than other States after a disaster:

---

157 Humanity Needs 'Exit Ramp off Road to Climate', Annex 580.

158 "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 8, Annex 597.

159 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, pages 11, 18, Annex 501.

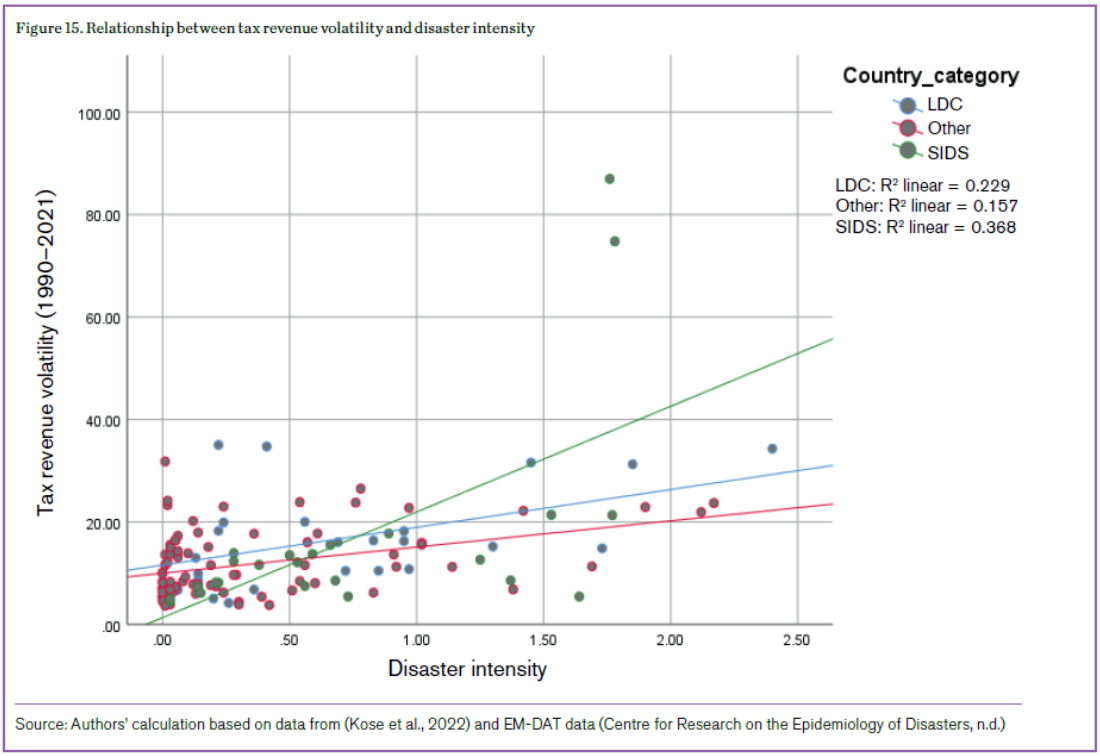



*Figure 16: Relationship between tax revenue volatility and disaster ideally*[160]

95. For States to comply with their own obligations regarding climate change, they usually must engage in even higher levels of sovereign debt and debt servicing costs than they do already. In line with these high expenditures, a 2023 report by the IMF calculated that addressing climate change by only stopping future emissions of greenhouse gases and using the current policies would lead to a significant increase of sovereign debt by around 40–50 percentage points of GDP. It provides that:

> scaling up the current policy mix—heavy on subsidies and other components of public spending—to deliver net zero leads to an accumulation of public debt by 40–50 percentage points of GDP for a representative advanced economy and for a representative emerging market economy by 2050.[161]

160 "Sinking islands, rising debts: Urgent need for new financial compact for Small Island Developing States", *The International Institute for Environment and Development*, September 2023, page 27, Annex 598.

161 "Fiscal Monitor: Climate Crossroads: Fiscal Policies in a Warming World", *International Monetary Fund*, October 2023, page viii, Annex 526.

96. These costs are not borne equally among States. As also noted by the IMF, "[c]ountries with limited fiscal space, low tax capacity and expensive or nonexistent access to market financing face large adaptation costs."[162]

97. The increased public indebtedness of small island and developing States to pay for climate change puts shame to the limited amounts that developed States have promised or raised for climate financing. Recent calculations show that the borrowing costs of small island and developing States far exceed the climate finance obtained by SIDS. A 2023 paper by the IIED noted that "[all small island and developing States] received a combined [USD] 1.5 billion in climate finance between 2016 and 2020. But in the same period, 22 small island and developing States paid more than US$26.6 billion to their external creditors — almost 18 times as much as they received in loans."[163]

### C. The severe weather events and other disasters associated with climate change create immediate shocks to public finances that depress vulnerable States' ability to make timely payment of a single debt repayment – which, in turn, can trigger acceleration of the entire underlying debt and demands for payments of all outstanding sovereign debt

98. Climate change increases the risk of severe damage events occurring at a greater frequency, resulting in a great amount of damage, particularly in small island and developing States. A study by the IIED showed a remarkable increase in the number of people affected by natural disasters. It noted that between 2011 and 2022, "the population affected by disasters in [small island and developing States] increased by around 120% and deaths per million rose by about 60%."[164] The same study also noted a dramatic increase in disasters affecting small island States. It observed that "[the number of high-intensity disasters affecting SIDS have increased in the last three decades, with a 300% increase in 2012 and a 133.33% increase in 2020. After 2010,

---

162 "Fiscal Monitor: Climate Crossroads: Fiscal Policies in a Warming World", *International Monetary Fund*, October 2023, page viii, Annex 526.

163 "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 5, Annex 597.

164 Global SIDS Debt Sustainability Support Service, page 5, Annex 605; *See* "Sinking islands, rising debts: Urgent need for new financial compact for Small Island Developing States", *The International Institute for Environment and Development*, September 2023, page 6, Annex 598.

significant increases in mean intensity were recorded, including a 321.82% increase in 2015 and a 196.50% increase in 2020."[165]

99. A recent example of such severe weather events is Hurricane Beryl, which traversed over the Caribbean in the first week of July 2024. Hurricane Beryl caused vast devastation to the region. In Barbados alone, it destroyed a significant part of the fishing vessels, over 200 vessels.[166] Figures 17 and 18 below show some of this damage to fishing vessels. Fishing is a key industry of Barbados and vital to the food supply of the island. As a result, there will be a shortage of fish on the island and an increase in the price of the fish that is available.[167] The chairman of the Fisheries Advisory Committee, Kemar Harris, has noted in this respect "[w]hat we are going to miss is our local dolphin, our flying fish, the potfish, the snappers… those local fish that we get from here."[168]

*Figure 17: Destruction of fishing vessels in the Bridgetown Fisheries Harbour*[169]

---

165 "Sinking islands, rising debts: Urgent need for new financial compact for Small Island Developing States", *The International Institute for Environment and Development*, September 2023, page 6, Annex 598.

166 *See* "Boat tally at 204 and counting", *Nation News*, 4 July 2024, Annex 577.

167 *See* "Plea against price rise amid fisheries losses", *Barbados Today*, 5 July 2024, Annex 578.

168 "Plea against price rise amid fisheries losses", *Barbados Today*, 5 July 2024, Annex 578.

169 "Hurricane Beryl grows to Category 5 strength as it razes southeast Caribbean islands", *The Associated Press*, 2 July 2024, Annex 572.


*Figure 18: Sunk boat in the Fisheries Complex in Bridgetown, Barbados*[170]

100. Such severe weather events and other climate disasters can create a financial shock, causing a State's sovereign debt to enter a downward spiral. This occurs in three ways.

101. First, extreme weather events demand increased government spending to fund an emergency response. Significant expenditure is needed to recover from such events. For example, the total budget needed for the recovery following Typhoon Haiyan in the Philippines is USD 8.2 billion.[171] Barbados spent approximately BBD 120 million (around USD 60 million[172]) to repair, rebuild or otherwise house Barbadians affected by Hurricane Elsa.[173] Governments often need to take on additional sovereign debt to fund such public spending. According to a report by the IMF, at least one study found that "natural disasters [. . .] are one of the most important sources of contingent liabilities, the realisation of which can be a substantial source of fiscal distress"[174] A recent study by the IIED summarised that "[i]ncreasingly frequent climate-related disasters are having devastating economic consequences for [small island and

---

170 "Beryl heads toward Jamaica as a major hurricane after ripping through southeast Caribbean", *The Indian Express*, 3 July 2024, Annex 574.

171 *See* 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 12, Annex 501.

172 On 26 June 2024, the Central Bank of Barbados applies a rate of 1.980000 for buying USD with Barbados Dollars and a rate of 2.028570 for selling USD in exchange for Barbados dollars. *See* "Exchange Rates", *Central Bank of Barbados*, 26 June 2024, Annex 606.

173 *See* "House repairs after Hurricane Elsa 80 per cent done, *Barbados Today*, 9 October 2023" Annex 567.

174 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 12, Annex 501.

developing States]."[175] It calculated that small island and developing States "constitute two-thirds of countries experiencing the highest relative annual losses from such events, with disaster-related damage as a percentage of gross domestic product (the "**GDP**") surging by nearly 90%."[176] The below bar graph similarly shows an increase in sovereign debt (as a percentage of GDP) in small island and developing States when a disaster occurs:

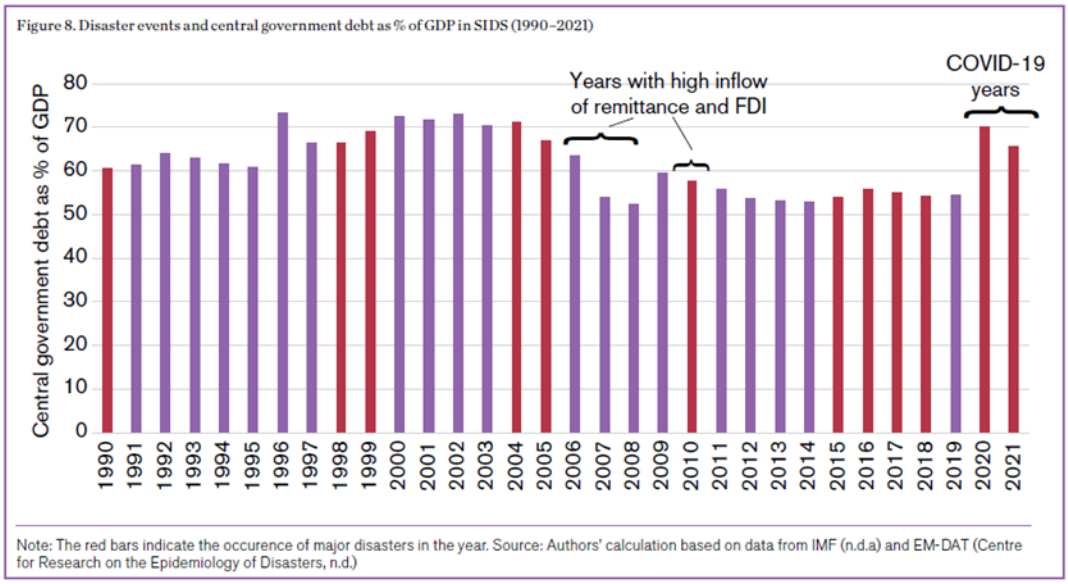



*Figure 19: How disaster events impact central government debt*[177]

102. Second, a climatic shock event also decreases public finances through a reduction in revenue and tax receivables by the State, which further limits the State's ability to service its sovereign debt. As again observed by the IMF, "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."[178] The IMF describes that extreme weather events could cause such loss because they

> 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

175 Global SIDS Debt Sustainability Support Service, page 3, Annex 605.

176 Global SIDS Debt Sustainability Support Service, page 3, *see also* page 5, Annex 605.

177 *See* "Sinking islands, rising debts: Urgent need for new financial compact for Small Island Developing States", *The International Institute for Environment and Development*, September 2023, page 20, Annex 598.

178 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 12, Annex 501.

> 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.[179]

103. In addition, the gradual effects of climate change can have a similar impact. For example, a 2016 study by the UNDP estimated that the economic cost of reduced productivity due to heat stress caused by global warming could be more than USD 2 trillion by 2030.[180]

104. Third, the additional public expenditure triggered by a climatic shock event can cause a State to miss debt repayments, which can trigger acceleration of the entire underlying debt and demands for payments of all outstanding sovereign debt. This is more the case for small island States, that experience greater relative losses to their economy as well as absolute financial losses from a disaster. As analysed in a 2023 paper by the IIED:

> a single disaster can be catastrophic, wiping out essential industries, impacting entire islands, or destroying vital infrastructure without readily available alternatives. Globally, [small island and developing States] comprise two-thirds of the nations that experience the highest relative annual losses from natural disasters (1–9% of their gross domestic product (GDP)). Additionally, 14 out of the 20 countries with the highest average annual disaster losses relative to their GDP are SIDS. The impact on GDP due to weather, climate and water related events on SIDS between 1970 and 2020, was [USD]153 billion — a considerable figure considering the average GDP of [small island and developing States] is [USD]13.7 billion. Our assessment shows that the damage caused by disasters as a percentage of GDP in [small island and developing States] increased by nearly 90% from 2011 to 2022.[181]

105. This same relative damage due to a disaster in relation to a State's GDP is depicted in Figure 20 below. The increase and volatility in the purple line in this graph shows the significantly greater impact of disasters on the economy of small island and developing States:

---

179 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 14, Annex 501.

180 *See* "Climate Change and Labour: Impacts of Heat in the Workplace, United Nations Development Programme", *United Nations Development Programme,* 28 April 2016, page 22, Annex 509, in 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 15, Annex 501.

181 Global SIDS Debt Sustainability Support Service, page 7, Annex 605; "Sinking islands, rising debts: Urgent need for new financial compact for Small Island Developing States", *The International Institute for Environment and Development*, September 2023, page 19, Annex 598.

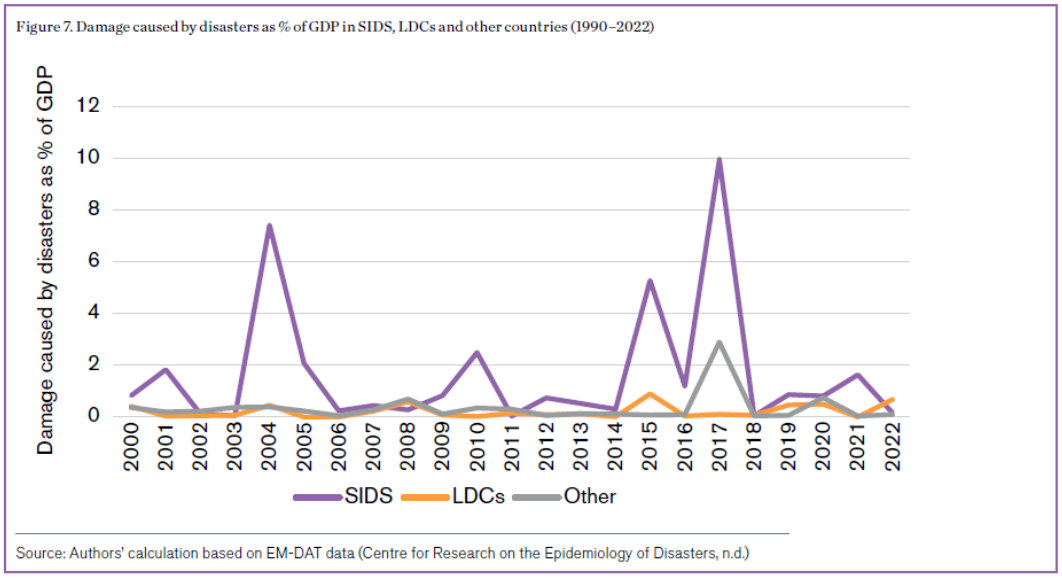



*Figure 20: Damage caused by disasters as % of GDP in SIDS, LDCs and other countries (1990-2022)* [182]

106. In essence, when a severe weather event is caused by climate change, the impact of such an event on the sovereign debt forces States to choose between people and planet or sustainable finance. However, as considered by the Bridgetown Initiative 3.0, the choice between sustainable debt and development, including recovery from severe weather events, is a false dichotomy. As explained by this Initiative:

> we [small island and developing States] can neither afford to choose between tackling development or climate; these are two sides of the same coin. Many of us have graduated out of concessional finance yet have only superficial market access given the unsustainable cost of today's borrowing. Our greater exposure to weather disasters prices us out of insurance, leaving us prone to endless cycles of shocks, with inadequate financing for recovery or programmes that significantly strengthen institutions and national capacity.[183]

107. As a result, the economic and financial burden of severe weather events, in fact, the risk of such events alone, forces climate-vulnerable States to choose between people and planet or sustainable finance. In the words of the Prime Minister of Barbados, the Honourable Ms Mia Mottley, as reported by the political news agency POLITICO:

---

182 *See* "Sinking islands, rising debts: Urgent need for new financial compact for Small Island Developing States", *The International Institute for Environment and Development*, September 2023, page 19, Annex 598.

183 Bridgetown Initiative 3.0, Consultation Draft (27th May 2024)", *Bridgetown Initiative*, 28 May 2024, page 2, Annex 499.

> these climate-damaged countries, she said, are being told that to rebuild they must borrow at a "high premium, and that I must now, in borrowing, crowd out myself from being able to borrow to build schools, and to build hospitals."[184]

108. Further, the sovereign debt risk of climate shock events is a compound risk, that increases year-on-year and with each event. Considering this risk, IIED stated,

> when a disaster strikes, [Least Developed Countries] and [small island and developing States] have to borrow additional money on top of the country's pre-existing debt load, which further increases their risk of over-indebtedness. It normally takes many years for [ Least Developed Countries] and [small island and developing States] to recover from an extreme event. As the intensity and frequency of extreme events keeps increasing, these countries are more exposed to them every year. Each time, their response creates more debt, undermining capacity for the next crisis. They thus become trapped in an unsustainable debt cycle.[185]

109. This risk is significant and already materialising in the Caribbean. As IIED analysed,

> across Caribbean [small island and developing States], extreme weather events resulted in average losses of 109% per unit GDP in 2019 (Thomas and Theokritoff, 2021). These losses pushed the countries into a vicious cycle of indebtedness with potential longer-term consequences on their ability to continue servicing or repaying additional debts.[186]

110. One example of how a severe weather event can trigger a debt crisis is the aftermath of the 2015 Tropical Storm Erika in Dominica. The damage caused by this storm is estimated to have been around 96% of Dominica's GDP.[187] Within two years of Tropical Storm Erika, Dominica was hit by Hurricane Maria, causing a further USD 1.3 billion in damage, equivalent to 226% of the State's GDP.[188] Both disasters force

---

184 "It's time to cancel debt for climate-stricken nations, Barbados leader says", *Politico*, February 2024, Annex 569.

185 "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 9, Annex 597.

186 "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 9, Annex 597.

187 *See* National Consultation: Sustainable Recovery and Resilience towards achieving the Sustainable Development Goals in the Commonwealth of Dominica, 14 March 2022, page 2, Annex 515.

188 *See* "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023,

the State to increase expenditure on recovery. The compound effect of these two disasters and previous debt meant that Dominica had to take on more debt for recovery as well as to service previous debts.[189]

111. Barbados is also at risk of such severe weather events triggering a debt crisis, for example by a tropical storm damaging its tourism industry. Tourism is a major source of revenue for Barbados and storm damages reduce the number of tourists visiting the State leading to a drop in revenue that forces it to rely on external borrowings.[190] This has a significant negative impact on its GDP which results in Barbados paying a high proportion of its revenue as interest towards its sovereign borrowings. In June 2018, the Prime Minister of Barbados announced an "emergency plan" to tackle its economic crisis, including restructuring its debt as the State's liabilities were reaching 175% of its GDP.[191] In other words, Barbados had no choice but to resort to further borrowing to meet its pre-existing debt obligations. However, this is challenging because Moody's and S&P indicate Barbados's credit rating as highly speculative, indicating a material risk of default.[192]

112. At present, Barbados seeks to address the effects of climate change-related weather events on its sovereign debt by including natural disaster clauses in its loan agreements. The government of Barbados's Medium-term debt management strategy (fiscal years 2023-2024 to 2025-2026) notes in this respect:

> Barbados continues to proactively adopt a strategy of building climate resilience into its debt portfolio. In this regard, a suite of other climate resilience financing instruments has buttressed the natural disaster clauses first introduced into instruments in 2018.

---

page 9, Annex 597; *see also*, "Dominica: Disaster Resilience Strategy", IMF Country Report 21/182, *International Monetary Fund*, August 2021, page 3, Annex 524.

189 *See* "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 9, Annex 597; *see also*, "Dominica: Disaster Resilience Strategy", IMF Country Report 21/182, *International Monetary Fund*, August 2021, page 24, Annex 524.

190 *See* "How Moody's Assesses the Physical Effects of Climate Change on Sovereign Issuers", *Moody's Investors Service*, 7 November 2016, page 17, Annex 587.

191 *See* "Barbados launches 'emergency plan' to tackle massive debt", *Financial Times*, 1 June 2018, Annex 562.

192 *See* "Barbados Credit Rating", *Trading Economics*, Annex 583. *See also* "Credit ratings", The World Factbook, *Central Intelligence Agency*, Annex 582; "How We Rate Sovereigns", *S&P Global*, 15 February 2019, page 4, Annex 589 bis; "Rating Symbols and Definitions", *Moody's Investors Service*, 9 November 2023, page 6, Annex 598 bis; "Rating Methodology: Sovereigns", *Moody's Rating*, 22 November 2022, page 50, Annex 593 bis.

> These include the IADB's Contingent Credit Facility for Natural Disasters, as well as the activation of the Principal Payment Option (PPO) for eligible and future IADB loans. These seek to mitigate financial risk to the Government in the event of certain natural disasters, in the short and medium (long) term by providing cost effective and quick access contingent financing to cover extraordinary expenditure during emergencies caused by natural disasters and a onetime two-year principal deferral, respectively.[193]

### D. These effects of climate change on sovereign debt are made considerably worse by the practices of so-called "vulture funds", which seek to extract money by failing to renegotiate the debts of distressed countries regardless of the underlying circumstances and harm to local populations

113. The urgent need for sovereign debt to fund climate change adaptation and recovery from climatic events means that States are increasingly turning to private lenders, in particular, following a severe weather event or other disaster.[194] However, they are met with more unfavourable conditions dictated by commercial lenders exploiting the climate-vulnerable States' urgent need for financing. As noted in the 2024 V20 Debt Review Report, private lenders such as bondholders "often require higher rates and offer shorter maturities."[195] Such private financing, thus, further negatively exasperates climate-vulnerable States' debt distress, as set out in **Section IV.A**. It also reduces the transparency of public debt and creates difficulties in negotiating measures to alleviate such distress, such as through debt relief.[196]

114. The shift from public to private commercial lending has been particularly noticeable for climate-vulnerable States in the last decade.[197] Figure 12 below, from the 2024 V20 Debt Review Report, depicts the composition of V20 external debt stock by lender class.[198] As shown in this chart, around one-third of sovereign debt is owed to private lenders. This is a considerable increase from previous years. Figure 22 below

---

193 Medium Term Debt Management Strategy: Fiscal Year 2023-2024 to 2025-2026*, Government of Barbados*, paragraph 19, Annex 494.

194 *See* "Sinking islands, rising debts: Urgent need for new financial compact for Small Island Developing States", *The International Institute for Environment and Development*, September 2023, pages 28-29, Annex 598.

195 2024 V20 Debt Review Report, Annex 503; s*ee also* "Sinking islands, rising debts Urgent need for new financial compact for Small Island Developing States", *The International Institute for Environment and Development*, September 2023, page 27, Annex 598.

196 *See* 2024 V20 Debt Review Report, page 16, Annex 503.

197 2020 Macrofinancial Climate Change Risks and the Role of the IMF Report, page 23-24, Annex 501.

198 *See* 2024 V20 Debt Review Report, page 9, Annex 503.

provides a chart of the evolution of the V20's external debt between 2008, 2018 and 2022. It shows a demonstrable increase in sovereign debt obtained from bondholders and other private creditors in absolute terms as well as compared to other debt providers.


*Figure 2: V20 Debt Stock by Creditor*
*Source: Compiled by authors using World Bank IDS.*
*Note that data on external debt from IDS is not available for the following countries: Barbados, Kiribati, Marshall Islands, Namibia, Palau, Palestine, South Sudan, Trinidad and Tobago, and Tuvalu.*

*Figure 21: Debt service payments by creditors over the 2022-2030 period*[199]

199 2024 V20 Debt Review Report, page 8, Annex 503.

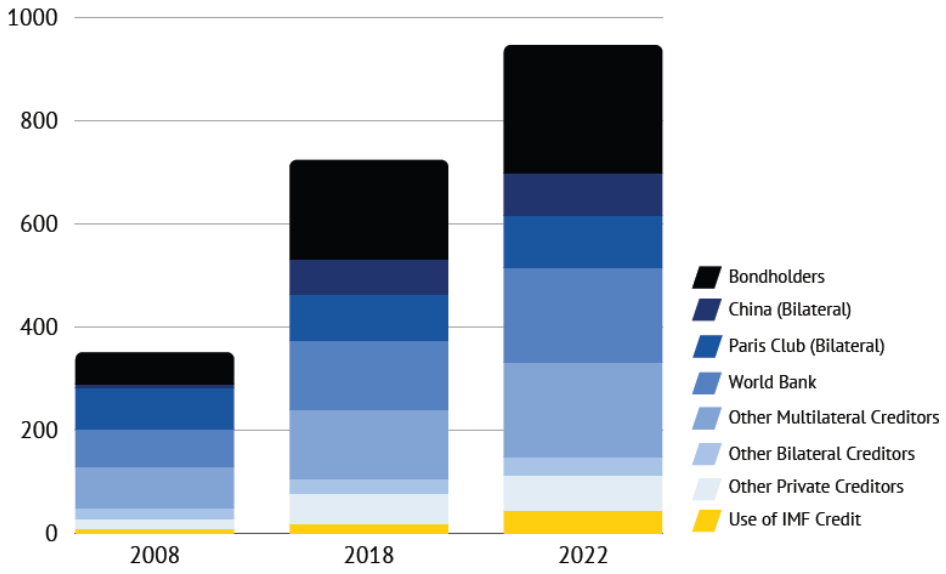



*Figure 3: V20 Debt Stock Over Time*

*Source: Compiled by authors using World Bank IDS.*

*Figure 22: V20's external debt stock change over time – for 2008, 2018 and 2022*[200]

115. According to a 2022 economic study, using data from IMF Debt Sustainability Analyses, IMF programme documents and the World Bank International Debt Statistics database, close to half, 47 per cent, of external debt and interest payments by low- and lower-middle-income countries are to private lenders."[201]

116. Certain private loan holders, so-called vulture funds, seek to profiteer from the debt distress that States find themselves in. It is the practice of such "vulture funds" to purchase distressed debt on the secondary market at a price considerably below its face value, [202] reflecting a reduction in value due to the associated risk of non-repayment. Vulture funds then refuse to participate in restructuring the debt and use aggressive means, including aggressive litigation tactics, to recover the arrears, the

---

200 2024 V20 Debt Review Report, page 8, Annex 503.

201 "Growing global debt crisis to worsen with interest rate rises", *Debt Justice*, 23 January 2022, Annex 565; "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 10, Annex 597.

202 *See* "Vulture Funds in the Sovereign Debt Context", *African Development Bank Group* ("**Vulture Funds in the Sovereign Debt Context**"), Annex 584; *see also* Report of the independent expert on the effects of foreign debt and other related international financial obligations of States on the full enjoyment of all human rights, particularly economic, social and cultural rights, A/HRC/14/21, 29 April 2010, paragraph 8, Annex 508.

full outstanding amount, interest and penalties. They may also seek to recoup certain costs such as litigation costs.[203] The African Development Bank describes the central criticism of vulture funds in the context of sovereign debt as follows:

> the central criticism of the vulture funds is that, by purchasing distressed debt at discounted rates, refusing to participate in voluntary restructurings, and seeking to recover the full value of the debt through litigation, vulture funds are preying on both other creditors and on the indebted countries themselves. Countries whose debt is trading at deep discounts are almost by definition in deep financial trouble and many of them are poor. Holdout behaviour by vulture funds makes restructuring slower, more difficult, and uncertain. Debtors are harmed by the substantial uncertainty faced and also by being forced to repay individual creditors far more than the agreements negotiated with other creditors.[204]

117. A 2019 research-based Report of the Human Rights Council Advisory Committee on the activities of vulture funds and the impact on human rights (the "**2019 UN Vulture Funds and Human Rights Report**") describes the highly detrimental impact of the practice of vulture funds on a State's finances and public policy, directing funds away from public spending needed to realise and protect economic, social and cultural rights. It states in this respect:

> litigation by vulture funds represents a substantial burden on the budgets of already poor countries. Harmful conditions of loans or high and abusive interest rates may make repayment extremely difficult. The State having to repay far more than the amount originally borrowed may be obliged to redirect into debt service resources previously allocated for essential public services, also triggering cuts in public spending . . . Such a course of action hinders the State's capacity to fulfil economic, social and cultural rights (i.e., to adopt appropriate measures towards their full realization) and, ultimately, has an impact on the economic growth and development of the country. [205]

118. Zambia offers an example of the malicious practices of vulture funds. The 2019 UN Vulture Funds and Human Rights Report reports on the events as follows. [206] In 1984,

---

203 *See* Vulture Funds in the Sovereign Debt Context, Annex 584.

204 Vulture Funds in the Sovereign Debt Context, Annex 584.

205 Activities of vulture funds and their impact on human rights: Final report of the Human Rights Council Advisory Committee, A/HRC/41/51, 7 May 2019 ("**2019 UN Vulture Funds and Human Rights Report**"), paragraph 65, Annex 511.

206 *See* 2019 UN Vulture Funds and Human Rights Report, paragraph 11, Annex 511; *see also*, Vulture Funds in the Sovereign Debt Context, Annex 584.

Zambia could not service a debt of USD 30 million that it owed to Romania. Around 1999, Romania sold the debt to a vulture fund for, reportedly, about USD 3 million. That fund then, in 2003, signed a settlement agreement with Zambia, under which Zambia waived "sovereign immunity from litigation and [agreed] to pay [USD] 15 million of the then [USD] 44 million face value of the debt"; this agreement also included penal rates of interest in case of non-payment.[207] After it had paid USD 3.4 million, Zambia stopped payment under this agreement, including on the grounds of corruption. In 2006, "only months before Zambia was due to receive debt cancellation . . .", the vulture fund sued Zambia in the UK for USD 55 million and later obtained judgment against Zambia for USD 15.4 million. The 2019 UN Vulture Funds and Human Rights Report calculates that the vulture fund "removed 15 per cent of [Zambia's] total social welfare expenditure, funds that could have been channelled instead towards education, health care and poverty alleviation."[208]

119. The practice of vulture funds further exasperates the vicious cycle of climate change-induced sovereign debt distress. Vulture funds target States with already unsustainable debt burdens and lacking the capacity and resources needed to face complex and protracted judicial processes.[209] As noted in **Section IV.A-C** above, climate-vulnerable States incur an increasing debt burden and debt distress due to climate change. As such, climate-vulnerable States are increasingly prey to these funds.

120. The practice of vulture funds has a significant negative impact on human rights, including in the climate change context. The 2019 UN Vulture Funds and Human Rights Report's conclusions are unequivocal in this regard, it considers:

> vulture funds are inherently exploitative. They deploy predatory financial strategies to obtain disproportionate and exorbitant gains at the expense of the realization of human rights, particularly economic, social and cultural rights, and the right to development. Seeking the repayment in full of a sovereign debt from a State that

---

207 *See* 2019 UN Vulture Funds and Human Rights Report, paragraph 11, Annex 511.

208 2019 UN Vulture Funds and Human Rights Report, paragraph 11, Annex 511.

209 *See* 2019 UN Vulture Funds and Human Rights Report, paragraphs 9 and 8 (a) ("[a]ccording to the African Development Bank, 20 of the 36 poorest developing countries have been threatened or targeted by aggressive litigation by vulture funds since 1999. The World Bank estimates that more than one third of the countries that qualified for its debt relief initiative have been targeted by lawsuits by at least 38 litigating creditors, with judgments totalling $1 billion in 26 of those cases"), Annex 511.

> has defaulted, or is close to default, is an illegitimate purpose. In a debt crisis, more than financial obligations are at stake.[210]

121. In the same manner, the practice of vulture funds burdens public spending to impede a government from protecting human rights threatened by climate change. **Section VI** of Barbados's Written Observations describes this relation between human rights and climate change in the AOS system. A State in the grip of a vulture fund faces even higher lending costs, which are also unrelenting at times of, for example, severe weather events. Vulture funds hold a short-term vision of gain that disregards the long-term win of using public funds to invest to adapt against and mitigate the effects of climate change. Instead, they force States to expend funds on debt servicing and other repayment.

---

[210] 2019 UN Vulture Funds and Human Rights Report, paragraph 86, Annex 511.

## V. THE EFFECTS OF CLIMATE CHANGE INCLUDE SIGNIFICANT INCREASES IN THE COST OF COMMERCIAL AND OTHER INSURANCE AND REDUCED AVAILABILITY OF INSURANCE, WHICH LIMITS THE ABILITY OF BUSINESSES TO MAKE INVESTMENTS IN VULNERABLE STATES

122. This Section sets out the negative impact that the climate crisis has on the availability of insurance (at a commercially viable rate) in climate-vulnerable States.

123. Insurance is a contract by which, in return for the payment of a sum called a premium, one party (the insurer) agrees to reimburse another party (the insured) for certain of the second party's losses when an anticipated adverse risk materialises in the future. Insurance is a fundamental ingredient to most global economic activity today. Insurance helps make lenders and other economic actors more secure in their financial decisions. Insurance has become a condition of finance for investments and projects such as infrastructure projects. Without reasonably available insurance, economic activity is frustrated and economic development is hindered.

124. When the risk of an insured event is higher, insurance is more expensive. The cost of insurance is thus determined by the likelihood of the insured event, such as damage to a bridge in construction, occurring.

125. Climate change increases the likelihood of such insured events occurring. The climate crisis carries an increasing risk of loss in terms of the large and increasing (i) scale of the damage; and (ii) chance of the risk materialising. As a result, insurers demand more to insure risks in small island and developing States and, in certain cases, simply refuse to insure risks in those States.

126. **Section V.A** below explains further the significant negative impact of the climate crisis on the cost and the availability of insurance. **Section V.B** below explains why developing States suffer these negative consequences most compared to other States.

### A. The risks associated with climate change greatly increase the cost of, and decrease the availability of insurance, including for large-scale investments and development projects

127. Climate change has a significant negative impact on the availability of insurance for private businesses, as well as public purposes in climate-vulnerable States. This is because climate change carries an increasing risk of loss. Insurance mechanisms

transfer risk from an insured person, object, or organisation to an insurer in exchange for payment of a premium by the insured. Regarding extreme weather or climate-related risks, insurance is "a valuable tool because the financial damage does not turn into long-term economic damage if a house or a business can be rebuilt or compensated for."[211] However, the risk of loss due to climate change is significant in terms of the large and increasing (i) scale of the damage; and (ii) chance of the risk materialising. As a result, climate change leads to insurance providers no longer providing insurance at a commercially viable price. The following paragraphs explain this in further detail.

128. As noted above, climate change increases the cost of insurance because it increases the likelihood of the insured event occurring. This is the most significant factor determining the cost of insurance. Whenever relevant risks arise, the cost of insurance will rise. In some circumstances, risks may rise to such an extent that insurance simply becomes unavailable or too expensive to be economically available. Climate-related catastrophes are increasing in both frequency and severity. As a result, there is a steady increase in insurance claims due to a rise in physical primary risks and second-order physical risks. Physical primary risks arise directly from weather-related events, such as floods and storms which cause direct impacts such as damage to property. Second-order risks, meanwhile, take the form of the financial loss and political risk that ensue after the event has taken place.[212]

129. Climate-related risks have led to an increase in insurance costs for risk-affected regions as the frequency and severity of natural disasters increase.[213] As stated by the European Insurance and Occupational Pensions Authority "exposures and insurance claims due to climate change will increase risk-based premium levels over time, potentially impairing the mid-to-long-term affordability and availability of insurance products with coverage against climate-related hazards."[214]

---

211 "Using insurance in adaptation to climate change", *European Commission*, 2018, page 3, Annex 530.

212 *See* "Climate change and insurance – How boards can respond to emerging supervisory expectations", *Deloitte*, 2020, pages 8-9, Annex 590.

213 *See* "The role of insurers in tackling climate change: challenges and opportunities", *The Eurofi Magazine*, 2023, page 176, Annex 594.

214 "The role of insurers in tackling climate change: challenges and opportunities", *The Eurofi Magazine*, 2023, page 176, Annex 594.

130. A study conducted by the Swiss Re Institute shows that insured losses are well above the 10-year average. In fact, since 1992 insured losses have grown by 5-7% on an average annual basis. A graph formulated by the Swiss Re Institute's study is given below which shows a steady increase in insured losses in the last decade:[215]

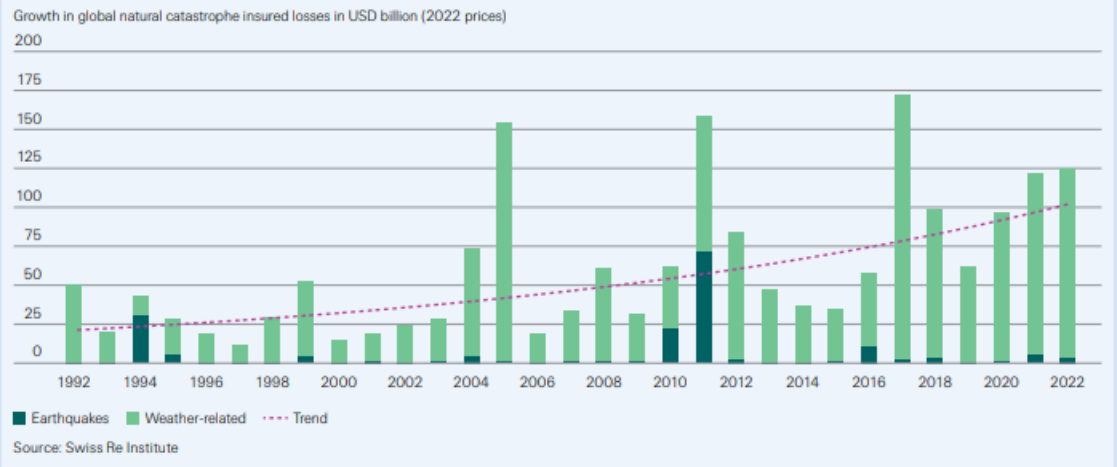



*Figure 23: Growth in global natural catastrophe insured losses* [216]

131. One example of such climate-induced increases in insurance costs is what happened in Florida in 2022 following Hurricane Ivan. The hurricane added pressure to the insurance market by triggering an estimated insured losses of USD 50-65 billion and had a cascading effect on rising insurance costs. This led to a surge in insurance premiums for property insurance with many insurance companies declaring insolvency.[217]

132. The unavailability of insurance has a significant impact on the economy in three ways. First, the lack of insurance impedes a State's recovery from a severe weather event or other major loss caused by climate change. A disaster induced by climate-related risk has a debilitating effect on the economy of a country. The destruction caused by such events "reduces both wealth and productive capacity."[218] The initial phase of a disaster such as loss of capital, crops, livestock, lives, and livelihood is followed by

---

215 *See* "Natural catastrophes and inflation in 2022: a perfect storm", *Swiss Re Institute*, 2023 ("**Natural catastrophes and inflation in 2022**"), page 3, Annex 595.

216 Natural catastrophes and inflation in 2022, page 3, Annex 595.

217 *See* "Florida homeowners battle for insurance after Hurricane Ian", *Context*, June 15, 2023, Annex 566.

218 "The macroeconomic effects of the insurance climate protection gap", *Bank of Finland*, 9 January 2023, page 4, Annex 596.

economic disruption through supply chains and damaged infrastructure. For example, the March 2011 earthquake and tsunami in Japan affected automobile production nationwide.[219] Insurance payouts can help households and businesses better endure the post-catastrophe disruption and underpin the reconstruction phase.

133. An example of the disastrous effect of the lack of insurance is the aftermath of the destruction of hundreds of fishing vessels in Barbados by Hurricane Beryl at the start of July 2024. Many of those fishing vessels were not insured. [220] As a result, the fishing industry will struggle to obtain the funds for the repair or repurchase of the vessels needed to revive this vital industry again.[221] This will negatively affect the livelihoods of not only the boat owners but also, boat hands, fish vendors and consumers. Following the hurricane, former Minister of Maritime Affairs and Blue Economy, Kirk Humphrey noted that while insurance is available in some cases, fishermen find it prohibitively expensive.[222] He also stated that the time has come for "a serious discussion regarding insurance for small to large-sized fishing vessels with all parties involved in the fishing and insurance industries."[223] Likewise, Randy Graham, president of the General Insurance Association of Barbados stated that the passing of Beryl is "a reminder that the region is exposed to these types of hurricanes, and I think that's what may cause the market to continue to "harden", which means reduced or costlier reinsurance for Barbados and the Caribbean."[224]

134. Hurricane Beryl will exasperate the already existing problem of the lack of affordable insurance in Barbados. The 2023 Financial Stability Report already noted that "the evolution of climate risks makes it increasingly difficult to secure adequate coverage within the region. In 2023, an estimated 56.2 per cent of total business was transferred

---

219 *See* "The macroeconomic effects of the insurance climate protection gap", *Bank of Finland*, 9 January 2023, page 4, Annex 596.

220 *See* "Fishing devastation prompts call for affordable boat insurance", *Barbados Today*, 3 July 2024, Annex 575.

221 *See* "BAS head says urgent intervention needed for fishing sector", *Barbados Today*, 4 July 2024, Annex 576.

222 *See* "Fishing devastation prompts call for affordable boat insurance", *Barbados Today*, 3 July 2024. Annex 575.

223 "Fishing devastation prompts call for affordable boat insurance", *Barbados Today*, 3 July 2024, Annex 575.

224 "Fishing devastation prompts call for affordable boat insurance", *Barbados Today*, 3 July 2024, Annex 575.

to reinsurers, with the most ceded risks being property insurance." The report also provided that "given the region's vulnerabilities, insurers are finding it difficult to secure adequate reinsurance coverage, thus limiting their capacity to underwrite property business. Whilst this may not be a direct financial stability concern, it presents implications for the broader economy as the country's protection gap widens, increasing strain on state resources should an event materialise."[225]

135. The other two ways the unavailability of insurance has a significant impact on the economy relate to the fact that the insurance sector contributes to a State's economic growth. Insurance mitigates risk and drives investment. Conversely, the unavailability of insurance leads to underinvestment. This is the case because businesses cannot make investments without proper insurance, which commonly is a requirement for the financing of such investments.[226] In addition to this, businesses face even further risks as they are often unable to protect their investment assets in climate-vulnerable States from the physical effects of climate change[227] since the insurance industry is faced with difficulty in constructing risk models that incorporate climate change.[228] The unpredictable nature and frequency of climate change events are the primary reasons since insurers assess risks based on the magnitude and frequency of past events.[229]

136. Last, the insurance sector contributes to a State's economy directly by investing itself. The rise of climate-related risks has a direct negative impact on the liquidity of the insurance sector, which is one of the "largest groups of institutional investors, and are invested in bonds, stocks and other products."[230] As a result, losses faced by the insurance sector directly affect their revenue. For example, "if an insurer is invested

---

225 "2023 Financial Stability Report", *Central Bank of Barbados and Financial Services Commission*, 2023, page 39, Annex 607.

226 *See* e.g., "Recommendations of the Task Force on Climate-related Financial Disclosures", *Task Force on Climate-Related Financial Disclosures*, 15 June 2017, page 8, Annex 589.

227 *See* The impact of climate risk on firm performance and financing choices: An international comparison, page 13, Annex 545.

228 *See* C. Okereke et al., "Climate Change: Challenging Business, Transforming Politics", *Business & Society*, 2012, pp. 7-30 ("**Climate Change: Challenging Business, Transforming Politics**"), pp. 7-30, page 13, Annex 536.

229 *See* Climate Change: Challenging Business, Transforming Politics, pp. 7-30, page 14, Annex 536.

230 "Nature-Related Risks in the Global Insurance Sector", *United Nations Development Programme Sustainable Insurance Forum*, November 2021, page 19, Annex 513.

in real estate debt, cash flow from that investment can be affected by nature loss events such as coastal erosion, reducing the debt servicing capacity and collateral valuation of the underlying properties."[231]

### B. Small island and developing States suffer most of the negative effects of climate change on the availability of insurance

137. Insurance plays a significant role in alleviating the economic threats of climate risk events. However, the Swiss Re Institute study reveals a disproportionate insurance protection gap in regions with developing economies compared to developed economies, as demonstrated in Figure 24 below:[232]

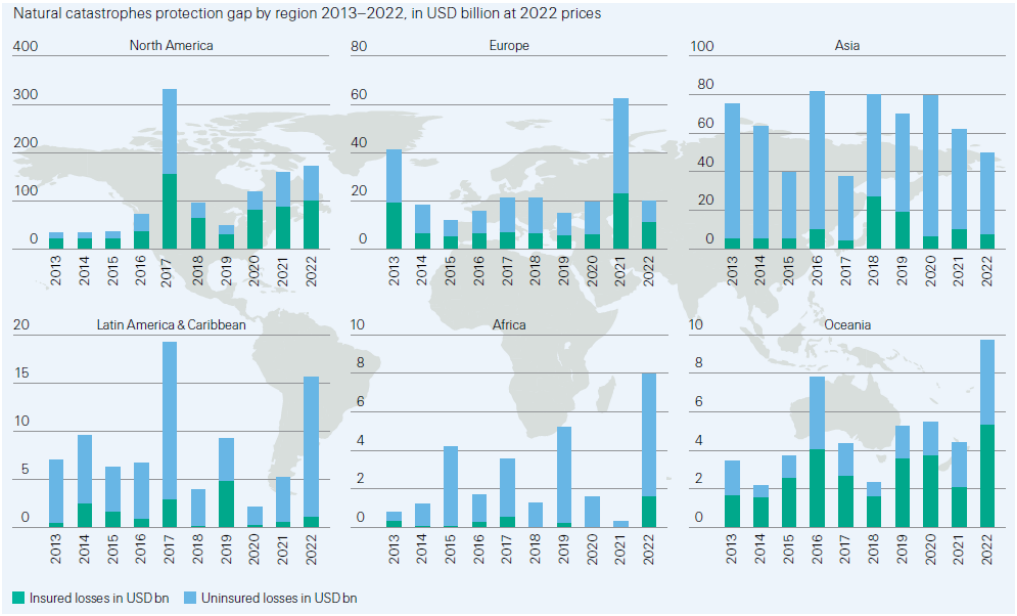



*Figure 24: Natural catastrophe protection gap by region for the period 2013-2022*[233]

138. The issue permeates at an intra-State level and the economic knock-on effects are significant. Low-income communities are often excluded from insurance arrangements because the high premiums or fees of traditional insurance solutions are prohibitively expensive.[234] This is particularly true in developing countries. In low-income countries, typically more than 95% of all losses from weather, climate, and

---

231 "Nature-Related Risks in the Global Insurance Sector", *United Nations Development Programme Sustainable Insurance Forum*, November 2021, page 19, Annex 513.

232 Natural catastrophes and inflation in 2022, page 30, Annex 595.

233 *See* Natural catastrophes and inflation in 2022, page 30, Annex 595.

234 *See* "Partnerships to Advance Climate Risk Approaches I Grenada, Jamaica, Saint Lucia", *United Nations Framework Convention on Climate Change*, 2023, page 3, Annex 516.

natural hazards remain uninsured.[235] As a result, damage following a severe weather event or other climate change-related loss can cause such low-income communities to fall deeper into poverty and can set development back decades.

139. The insurance premiums for businesses are also adversely affected with major knock-on effects for the economy, in particular in developing States. The unavailability or prohibitive cost of insurance leads to reticence to invest in countries and markets where they are susceptible to climate risks or where it is uneconomical to do so. The gap between developed and vulnerable States is significant in this regard.[236]

140. Insurance claims filed under climate-related disasters are usually geographically concentrated in the short term. However, with time, claims become widespread as the frequency of climate-related incidents increases. In cases where climate-related incidents are high, "insurers might need to liquidate assets at a loss to cover those claims where insurers are not holding significant shorter-term assets."[237] As a result, insurance premiums rise, and policyholders become unwilling to pay higher premiums in climate-affected areas. For example, a rise in insurance premiums for coastal properties occurs due to heightened risk from sea level rise and coastal erosion. This rise in insurance premiums "may also have a negative macroeconomic impact through a reduction in property value and a corresponding decrease in property tax revenues for the local government, in particular for countries with a long coastline. This illustrates a self-reinforcing loop between financial impacts and macroeconomic impacts."[238]

141. Studies show that economies with higher insurance coverage can recover more quickly and suffer from lower cumulative GDP damage than those without insurance coverage. For instance, the European Central Bank has found that:

---

235 "Disaster insurance in developing Asia: An analysis of market-based schemes", ADB Economics Working Paper Series No. 590, *Asian Development Bank*, September 2019, page 1, Annex 520.

236 *See* "Pricing of climate risks in financial markets: a summary of the literature", BIS Papers No 130, *Bank for International Settlements*, December 2022, page 5, Annex 506.

237 "Nature-Related Risks in the Global Insurance Sector", *United Nations Development Programme Sustainable Insurance Forum*, November 2021, page 18, Annex 513.

238 "Nature-Related Risks in the Global Insurance Sector", *United Nations Development Programme Sustainable Insurance Forum*, November 2021, page 18, Annex 513.

a large-scale disaster causing over 0.1% of GDP worth of direct losses can reduce GDP growth by around 0.5 percentage points in the quarter of impact if the share of insured losses is low, i.e. below 35% of the total.[239]

142. The European Central Bank relied on a sample study conducted by OECD where a sample of 45 countries were evaluated from 1996-2019. The chart below "show[s] the impact of large-scale natural disasters (i.e. with total damage larger than 0.1% of GDP, which represents the third quartile of the loss distribution) when the share of insured losses is high (above the median of 35%) (left panel) and low (i.e. below the median of 35%) (right panel)":[240]

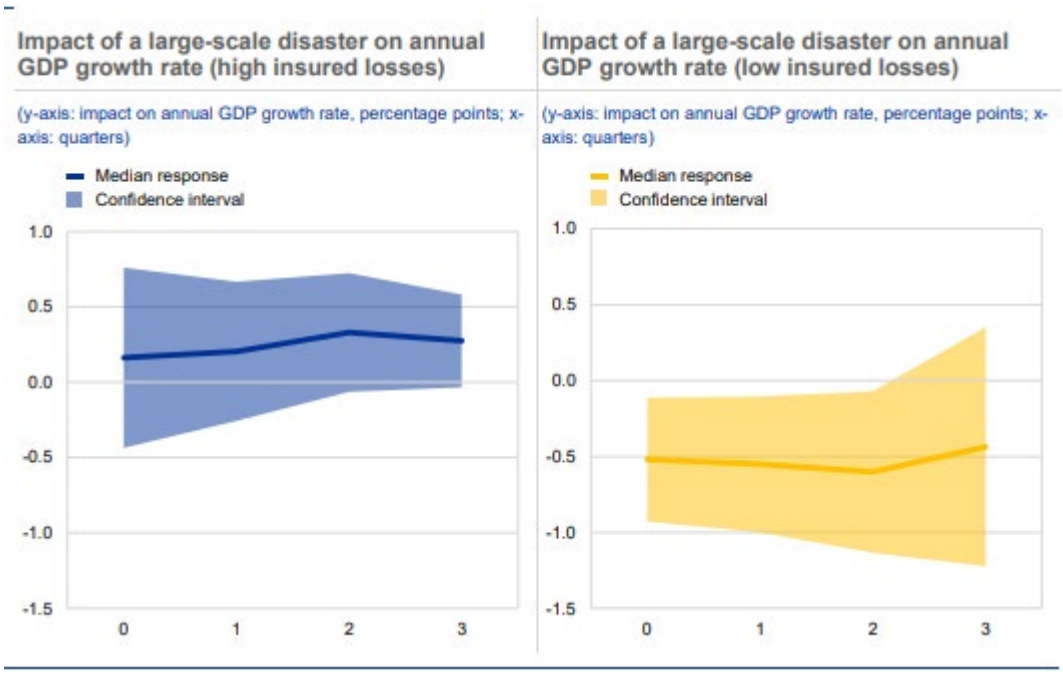



*Figure 25: Impact of a large-scale disaster on annual GDP growth rate on high and low insured losses* [241]

143. Various initiatives are underway to tackle these issues. As noted by the Technical Support Unit ("**TSU**") of Working Group II of the IPCC in a report prepared for the Transition Committee of the 27th Conference of the Parties ("**COP27**") at the United Nations Climate Change Conference, "[e]xisting regional insurance mechanisms (e.g.,

239 "Policy options to reduce the climate insurance protection gap", Discussion Paper, *European Central Bank*, April 2023, page 11, Annex 529.

240 "Policy options to reduce the climate insurance protection gap", Discussion Paper, *European Central Bank*, April 2023, pages 11, Annex 529.

241 *See* "Policy options to reduce the climate insurance protection gap", Discussion Paper, *European Central Bank*, April 2023, pages 10-11, Annex 529.

CCRIF, ARC, PCRIC and Global Shield) play a critical role in pre-arranged finance but would benefit from integrating and strengthening anticipatory response measures through increased scale, affordability, coverage, and scope for different climate scenarios. The funding arrangements must therefore factor in collaborative arrangements for re-insurance as climate risks in regions and countries lead to plausible uninsurable scenarios."[242]

144. Further, multilateral initiatives such as the Sendai Framework for Disaster Risk Reduction include risk transfer and insurance mechanisms,[243] while insurance-related approaches are also featured in the Paris Agreement.[244] Insurance instruments can play an important role in managing risks by providing "individuals and businesses with coverage against specified contingencies, by redistributing losses among the pool of policyholders."[245] This pooling of risk allows for diversification, providing an additional layer of risk absorption capacity.

145. In the Caribbean region, disaster risk financing efforts emerged after Hurricane Ivan in 2004. In 2007, financing efforts culminated in the creation of the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company ("**CCRIF SPC**") which acted as the first insurance instrument in the region. In 2011, this was followed by the creation of the Climate Risk Adaption and Insurance in the Caribbean ("**CRAIC**") project to focus on providing climate risk insurance. However, the success of the CRAIC project has been limited to indemnifying low-income individuals rather than targeting private investments in the region.[246] The growth of

---

242 "TSU Working Paper from Working Group 5(B)", *United Nations Framework Convention on Climate Change*, 21 August 2023, paragraph 15, Annex 517.

243 *See* "Disaster insurance in developing Asia: An analysis of market-based schemes", ADB Economics Working Paper Series No. 590, *Asian Development Bank*, September 2019, page 1, Annex 520.

244 *See* Adoption of the Paris Agreement, Decision 1/CP.21, Report of the Conference of the Parties on its Twenty-First Session, held in Paris from 30 November to 13 December 2015, Addendum, Part two: Action taken by the Conference of the Parties at its Twenty-First Session, FCCC/CP/2015/10/Add.1, 29 January 2016, Article 3, paragraph 48, Annex 169.

245 *See* "Disaster insurance in developing Asia: An analysis of market-based schemes", ADB Economics Working Paper Series No. 590, *Asian Development Bank*, September 2019, page 1, Annex 520.

246 *See* "Climate Risk Insurance in the Caribbean: 20 lessons learned from the Climate Risk Adaptation and Insurance in the Caribbean (CRAIC) project", *Munich Climate Insurance Initiative*, 14 January 2021, page 13 ("**Climate Risk Insurance in the Caribbean**"), Annex 591.

insurance facilities in the region underpins its necessity and growing relevance in today's investment climate.

146. More can be done, however, and the TSU report proposes setting up a new fund or funding arrangement "under an existing fund or institution under or outside the UNFCCC and Paris Agreement."[247] The Transition Committee subsequently determined "to establish new funding arrangements for assisting developing countries that are particularly vulnerable to the adverse effects of climate change, in responding to loss and damage, including with a focus on addressing loss and damage by providing and assisting in mobilizing new and additional resources, and that these new arrangements complement and include sources, funds, processes and initiatives under and outside the Convention and the Paris Agreement."[248]

247 "TSU Working Paper from Working Group 5(B)", *United Nations Framework Convention on Climate Change*, 21 August 2023, paragraph 16, Annex 517.

248 Funding arrangements for responding to loss and damage associated with the adverse effects of climate change, including a focus on addressing loss and damage, Decision 2/CP.27, Report of the Conference of the Parties on its twenty-seventh session, held in Sharm el-Sheikh from 6 to 20 November 2022, Addendum, Part two: Action taken by the Conference of the Parties at its twenty-seventh session, FCCC/CP/2022/10/Add.1, 17 March 2023, page 12, Annex 190.

## VI. EXAMPLES OF MEASURES THAT WOULD AMELIORATE THE DISPROPORTIONALLY DELETERIOUS EFFECTS OF THE CLIMATE CRISIS ON THE FINANCIAL SYSTEM, INCLUDING INSURANCE, FOR VULNERABLE STATES

147. This Section sets out examples and suggestions that would mitigate the negative impact of the climate crisis on the financial and economic system of States and in particular climate climate-vulnerable States, as explained in **Sections III to V**.

148. In this respect, this Advisory Opinion will be of particular significance to the practices of the Inter-American Development Bank (previously defined as the "IADB"). Like the Court, the IADB is part of the Inter-American System and has a shared membership in the member States of the Organization of American States. As such, this Court's opinion will be highly influential on the IADB. The IADB's practices are important to address the financial consequences of climate change on vulnerable States in the Americas. The IADB finances many projects in the region and provides States with sovereign debt. It is "the main source of development financing for Latin America and the Caribbean."[249] As such, it has a significant role in the financial system in the Americas and in ameliorating the negative consequences of climate change on vulnerable States.

149. **Section VI.A** below sets out the measures that would ameliorate the deleterious effect of the climate crisis on the cost of capital. **Section VI.B** offers suggestions to ameliorate the impact of the climate crisis on sovereign debt and **Section VI.C** does the same for the decrease in the availability of (commercially viable) insurance due to climate change.

### A. Measures that would address the impact of the climate crisis on the cost of capital

150. Below are examples of measures that would ameliorate the deleterious effects of the climate crisis on the cost of capital:

a. Multilateral banks may increase concessional finance for climate-vulnerable States. Multilateral banks can ease capital flows to developing States through,

---

249 "About the IDB", *Inter-American Development Bank*, Annex 585.

for example, concessional financing and grants[250] that aid vulnerable States to ease their rising cost of capital. This "below-market-rate" finance can also aid developing countries in meeting development objectives. The Independent High-Level Expert Group on Climate Change also suggested a "fivefold increase" in concessional finance by 2030 and emphasised it as a high priority.[251] This can be led by developed States by tripling the amount of bilateral concession finance by 2030.[252] An increase in concessional finance will aid climate-vulnerable States to use this assistance to implement climate adaptation and mitigation measures or subsidise investments to attract investors or even manage the physical effects of climate change.

b. Setting up international funds providing vulnerable States access to disaster insurance will reduce their financial burden. Disaster-risk insurance may also be a viable option to address the physical impact of climate change on the cost of capital. Such insurance can reduce the costs without raising taxes or reducing State spending[253] and at the same time, also alleviate the risk perception of the investors and lenders that losses due to climate change can be mitigated. However, it is true that some States cannot access disaster risk insurance. To overcome this hurdle, States like Indonesia, Sri Lanka and Papua New Guinea created a multi-donor trust fund that funded initiatives by private sector insurers.[254] Collectively, States and development banks can set up such international financial institutions for disaster insurance benefitting

---

250 *See* K. P. Gallagher et al., "Reforming Bretton Woods institutions to achieve climate change and development goals", *One Earth,* 2023, pages 1291-1303, page 1295, Annex 555.

251 *See* "A climate finance framework: decisive action to deliver on the Paris Agreement", *Second report of the Independent High-Level Expert Group on Climate Finance*, November 2023 ("**A climate finance framework: decisive action to deliver on the Paris Agreement**"), page 5, Annex 600.

252 *See* A climate finance framework: decisive action to deliver on the Paris Agreement, page 5, Annex 600.

253 *See* "Natural Disaster Shocks and Macroeconomic Growth in Asia: Evidence for Typhoons and Droughts", ADB Economics Working Paper Series No. 503, *Asian Development Bank*, December 2016, page 14, Annex 519; *See* N. Laframboise & S. Acevedo, "Man versus Mother Nature", *Finance & Development*, 2014, pp. 44-47, page 47, Annex 538.

254 *See* "Natural Disaster Shocks and Macroeconomic Growth in Asia: Evidence for Typhoons and Droughts", ADB Economics Working Paper Series No. 503, *Asian Development Bank*, December 2016, page 14, Annex 519.

vulnerable States. Such disaster-risk insurance will aid climate-vulnerable States to protect businesses in their States and reduce their cost of capital.

c. Developing innovative mechanisms to manage climate risks. States can evolve innovative risk transfer mechanisms to reduce the cost of capital in climate-vulnerable States. A reduced risk perception will ease the fears in the minds of lenders and investors, thereby facilitating further investment in such States.[255] Development banks must play a stronger role in reducing, managing and sharing risks and further reducing the cost of capital. They must change their role fundamentally and scale their financial support by at least three times before 2030, as suggested by the Independent High-Level Expert Group on Climate Change.[256]

### B. Measures that would address the impact of the climate crisis on sovereign debt

151. Below are examples of measures that would ameliorate the deleterious effects of the climate crisis on the sovereign debt of States vulnerable to the adverse effects of climate change (including middle-income but small, developing island States like Barbados):

a. States may decrease (e.g., cut the capital and/or interest rates) or cancel debts owed to them by vulnerable States.[257] This would be a way for them to provide financial assistance in accordance with their international law obligations.[258] V20 States have called on such debt support "for highly indebted climate vulnerable economies facing imminent liquidity crises."[259]

---

255 *See* The impact of climate vulnerability on firms' cost of capital and access to finance, page 10, Annex 550.

256 *See* A climate finance framework: decisive action to deliver on the Paris Agreement, page 5, Annex 600.

257 *See* e.g., M. Zucker-Marques et el., "Debt Relief by Multilateral Lenders: Why, How and How Much?", *Boston University Global Development Policy Centre, Centre for Sustainable Finance SOAS University of London and Heinrich-Böll-Stiftung*, 2023, pp. 1-67, page 8, Annex 557.

258 *See* Written Observations of Barbados, 18 December 2023, Section VI.J(i).

259 "V20 Statement on Debt Restructuring Option for Climate-Vulnerable Nations", Statement by the V20 Presidency, *The Vulnerable Twenty*, 27 October 2021, page 2, Annex 502.

b. States may increase non-loan grants to vulnerable States, in accordance with their international law obligations to provide financial assistance to vulnerable States.[260]

c. States and international financial institutions may allow climate-vulnerable States to restructure their debt more easily, for example in one of the ways discussed below. Current debt instruments may include obstacles to debt restructuring, such as clauses prohibiting borrowing States from seeking restructuring through any multilateral process.[261] Removing such obstacles would be in line with States' duties to cooperate in relation to climate change and a method of providing assistance to climate-vulnerable States in accordance with States' international law obligations.[262]

d. States and international financial institutions may include provisions in their lending documentation with climate-vulnerable States that allow for deferral of repayment of interest and the principal amount in case of a severe weather event and investment urgently needed to mitigate and adapt or otherwise protect against the negative impact of climate change. Barbados has included "climate clauses", allowing for a temporary debt standstill in certain loan documentation in case of a natural disaster. As noted by the IMF, in an IMF Working Paper titled "Barbados' 2018–19 Sovereign Debt Restructuring–A Sea Change?", such natural disaster clauses are now "included in most of the new debt instruments (both in the domestic and in the external debt restructuring) [and] would allow for capitalization of interest and deferral of scheduled amortization falling due over a two-year period following the occurrence of a major natural disaster."[263] For example, one such clause is included in the April 2024 Deed of Guarantee relating to obligations under a USD 25,000,000 term loan facility agreement between Kensington Oval Management Inc and the African Export-Import Bank, with the Government of

---

260 *See* Written Observations of Barbados, 18 December 2023, Section VI.J(i).

261 *See* "Tackling sovereign debt for effective climate action: Towards a European agenda", Briefing Note No. 147, *European Centre for Development Policy Management*, May 2022, page 4, Annex 593.

262 *See* Written Observations of Barbados, 18 December 2023, Sections VI.F and VI.J(i).

263 "Barbados' 2018–19 Sovereign Debt Restructuring–A Sea Change?", Working Paper WP/20/34, *International Monetary Fund*, February 2020, page 11, Annex 523.

Barbados acting as Guarantor.[264] This clause allows for deferred payment for a period of two years in case of a qualifying earthquake, tropical cyclone, or certain rainfall events, under circumstances prescribed in the agreement and in particular tied to the Caribbean Catastrophe Risk Insurance Facility Policy, which *inter alia* provide the relevant definition and must be in force for such deferral.[265] Another example is the Loan Contract between Barbados and the Inter-American Development Bank of February 2023, under which Barbados can request to exercise a 'principal payment option' which would allow Barbados to present a new amortisation schedule to the bank in case of a qualifying natural disaster, under certain conditions, including corresponding active natural disaster coverage under a contingent credit agreement.[266] As shown by these two examples, a viable insurance market is an integrated part of such climate clauses.

e. International financial institutions may issue "green" or "climate resilience bonds" for the benefit of vulnerable States. These bonds finance climate change initiatives.[267]

f. International financial institutions may make available "debt for nature swaps" or "debt for climate swaps." These are transactions in which a borrowing State's existing, expensive debt is swapped for debt at a discount (e.g., lower interest rate) in exchange for the borrowing State agreeing to take on specific climate change initiatives.[268] There have been over 140 of these swaps

---

264 *See* Deed of Guarantee between the Government of Barbados, acting through the Ministry of Finance, Economic Affairs and Investment and African Export-Import Bank, 13 April 2024, clause 14, Annex 498.

265 *See* Deed of Guarantee between the Government of Barbados, acting through the Ministry of Finance, Economic Affairs and Investment and African Export-Import Bank, 13 April 2024, clauses 14.1-14.4, Annex 498.

266 *See* Loan contract No. 5720/OC-BA between the Government of Barbados and the Inter-American Development Bank, 28 February 2023, clauses 20.1 (41-45), 3.03; 3.06. 5.01, Annex 495.

267 *See*, e.g. "World's first dedicated climate resilience bond, for US$ 700m, is issued by EBRD", *European Bank for Reconstruction and Development*, 20 September 2019, Annex 564.

268 See, e.g. "Debt-for-Nature Swaps", Michael Occhiolini, *International Economics Department, World Bank*, March 1990, Annex 534; "Tackling sovereign debt for effective climate action: Towards a European agenda", Briefing Note No. 147, *European Centre for Development Policy Management*, May 2022, pages 7-8, Annex 593.

already, such as, most recently, Ecuador's transaction in 2023.[269] V20 States have called for swaps "for interested middle-and-low-income vulnerable economies where new climate ambition and investments are restricted because of limited fiscal space."[270]

g. States and international financial institutions could guarantee bonds issued to public and private bondholders by vulnerable States. Such bonds were previously issued in response to the 1980s Latin American debt crisis by Latin American States and guaranteed by the United States of America's institutions.[271] They allow a State to restructure its debt. V20 States have suggested that development banks should guarantee bonds through facilities, such as the World Bank's Guarantee Facility for Green and Inclusive Recovery;[272]

h. As part of their obligation to provide redress for climate change, developed States may agree to payment plans for debts owed to them by vulnerable States, which take account of the need for those States to allocate resources to climate resilience. Unfortunately, however, if these payment plans include accruing interest on the debt, the overall effect of this measure is likely only to bring short-term relief to vulnerable States.

i. States and international financial institutions may include climate shock-absorbing features in debt instruments or incorporate such provisions into the laws regulating sovereign debt. This can include, for example, clauses that allow a State to suspend repayments in the event of a climate event (e.g., loss due to a natural disaster). Although some development banks and credit agencies offer these clauses in debt instruments, they are limited in various ways, e.g., to new loans, to only certain States and specific types of loan

---

269 *See* "Climate finance: What are debt-for-nature swaps and how can they help countries?", *World Economic Forum*, 26 April 2024, Annex 604.

270 "V20 Statement on Debt Restructuring Option for Climate-Vulnerable Nations", Statement by the V20 Presidency, *The Vulnerable Twenty*, 27 October 2021, page 2, Annex 502.

271 *See* "How the Brady Plan Delivered on Debt Relief: Lessons and Implication", Working Paper, WP/23/258, *International Monetary Fund,* December 2023, pages 7-8, Annex 527.

272 *See* "V20 Statement on Debt Restructuring Option for Climate-Vulnerable Nations", Statement by the V20 Presidency, *The Vulnerable Twenty*, 27 October 2021, page 2, Annex 502.

facilities.[273] In addition, if these clauses include accruing interest on the debt, the overall effect of this measure is likely only to bring short-term relief to vulnerable States and "it will do little to protect the country against the financial burden of dealing with natural catastrophes."[274]

j. States and international financial institutions may make 'non-recourse finance' available to vulnerable States. This means that those States and international financial institutions would lend money to vulnerable States and would only be entitled to specific payments, e.g., the profits of the projects the loan is funding. Unfortunately, however, this is a short-term solution as this decreases the ability of such vulnerable States to receive those payments themselves and therefore "the [State's] *capacity to service debt* decreases."[275]

k. International financial institutions may make insurance available to vulnerable States for sovereign debt. This insurance can be 'parametric', i.e., triggered by a climate event. The insurance would cover the costs of the sovereign debt, avoiding defaults as well as debt deferral.[276] This measure also has limitations. For example, insurance may be expensive (*see* **Section VI**) above) or may not cover the full debt.[277]

l. If climate-vulnerable States have natural assets such as natural carbon sinks or renewable energy sources, they can monetise these assets.[278] One example of this is when the World Bank helps States sell carbon credits generated from

---

273 *See* "Climate and Sovereign Debt Vulnerabilities: Some Practical Solutions", *Lazard*, February 2024 ("**Lazard Report**"), page 4, Annex 601. For example, the climate resilient debt clause offered by the UK Export Finance, the UK Government's export credit agency, is limited to direct loans to low-income countries and small island developing States to the exclusion of other developing States that are vulnerable to the adverse effects of climate change (*see* "Climate Resilient Debt Clauses", *Government of the United Kingdom*, 22 June 2023, Annex 496).

274 Lazard Report, page 4, Annex 601. *See*, e.g., "Climate Resilient Debt Clauses", *Government of the United Kingdom*, 22 June 2023, Annex 496.

275 Lazard Report, page 5, Annex 601.

276 *See* "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 14, Annex 597.

277 *See* "Protecting against sovereign debt defaults under growing climate impacts – Role for parametric insurance", Working Paper, *The International Institute for Environment and Development*, April 2023, page 17, Annex 597.

278 *See* Lazard Report, pages 5-6, Annex 601.

preserving their forests.[279] Of course, this measure is dependent on vulnerable States having assets that are available for monetisation.

m. States could assist vulnerable States in issuing "green bonds" (also termed "climate resilient bonds" or bonds linked to sustainability and climate initiatives).[280] These bonds could also include climate shock absorbing features, like the right to suspend repayments in the event of a climate event. However, issuing bonds increases vulnerable States' overall debt commitments and can be limited by various financial market forces, such as high transaction costs and a limited investor pool.[281] Therefore, these bonds are neither sufficient nor a long-term solution to the climate crisis for vulnerable States.

n. States could assist climate-vulnerable States at risk of falling prey to vulture funds by making participation in restructuring sovereign debt due to climate change mandatory in established legal systems like New York, London and Paris.

### C. Measures that would address the impact of the climate crisis on the availability of insurance

152. Below are examples of measures that would ameliorate the deleterious effects of the climate crisis on the availability of insurance for States vulnerable to the adverse effects of climate change (including middle-income but small, developing island States like Barbados):

a. Micro-level insurance, protecting low-income individuals and households. Micro-level insurance is designed to directly meet the policyholders' specific needs. Insurance schemes under this category are designed to protect low-income individuals and households. They usually involve small premium payments. An example of micro-level insurance in the Caribbean is the Livelihood Protection Policy ("**LPP**") which was developed by CRAIC. The

---

279 *See*, e.g., "World Bank Carbon Credits to Boost International Carbon Markets", *The World Bank*, 1 December 2023, Annex 579.

280 *See* "Sovereign Climate Debt Instruments: An Overview of the Green and Catastrophe Bond Markets", *International Monetary Fund*, July 2022, page 2, Annex 525.

281 *See* "Sovereign Climate Debt Instruments: An Overview of the Green and Catastrophe Bond Markets", *International Monetary Fund*, July 2022, page 14, Annex 525.

LPP is a parametric microinsurance product and is "designed to help protect the livelihoods of vulnerable individuals such as smallholder farmers, tourism workers, fishers, market vendors and day labourers by providing quick cash payouts following extreme weather events (specifically, extreme winds and excess rainfall)."[282] The LPP is not limited to protecting individuals but also protects community groups, such as credit unions, who can purchase policies on behalf of their members. The policyholders under this insurance scheme consist of mainly small-hold farmers. An example of its success is the payouts received in Jamaica and Saint Lucia after Hurricane Matthew in 2016. The payouts received in Saint Lucia totalled USD 102,000. The success of the LPP makes it an effective mechanism for closing the insurance protection gap.[283]

b. Meso-level insurance, protecting intermediaries such as credit unions, microfinance institutions and non-governmental organisations from losses, which may be incurred by their clients or members, involving lower administration costs and providing coverage for large groups of people. Meso-level insurance schemes are used, for example, in Peru. In Peru, microfinance institutions utilise an index-based insurance scheme. These schemes are used to ensure that payouts are made when loan defaults occur due to rainfall damage and flooding by El Niño. As with most index-based insurance schemes, the payouts are determined by a "predetermined strike value, and they are commensurate with by how much the strike value is exceeded."[284] In the Caribbean region, the Loan Portfolio Cover ("**LPC**") protects loan portfolios in Jamaica, St. Lucia, and Grenada. The policies in place protect loan portfolios from climate-related risks and subsequent loan defaults. As with Peru, the payouts are made when "specified values for wind speed and/or rainfall are exceeded."[285]

---

282 Climate Risk Insurance in the Caribbean, Annex 591.

283 *See* Climate Risk Insurance in the Caribbean, pages 11-12, Annex 591.

284 "Climate Risk Insurance: New Approaches and Schemes", Working Paper, *Allianz*, September 2016, page 10, Annex 588.

285 "Climate Risk Insurance: New Approaches and Schemes", Working Paper, *Allianz*, September 2016, page 10, Annex 588.

c. Macro-level sovereign insurance, provided to States or entire regions to fund recovery measures for both insured and uninsured individuals. Macro-level insurance has been utilised in Central American countries which are highly exposed to hurricanes and earthquakes. The CCRIF SPC provides coverage to 16 Caribbean States. The Bahamas, Barbados, Haiti, Jamaica and Nicaragua are a part of the States that "pay membership fees and receive immediate payouts to cover parts of the costs incurred by a natural disaster."[286] The scheme is based on the parametric insurance model where payouts are triggered by an index for hurricanes as measured by windspeed and an index for earthquakes, as measured by ground shaking.

d. Use of so-called "catastrophe bonds" to bring natural disaster risks into capital markets. Issuers of catastrophe bonds fund payments if a specific catastrophic event occurs, in which case buyers can lose the entire principal. In return, investors receive regular interest payments, reflecting the probability of loss of the capital invested, i.e. the probability for a catastrophic event to occur. One example of a catastrophe bond is the World Bank's 2021 USD 185 million catastrophe bond to Jamaica which provided disaster relief insurance against hurricanes until December 2023. The World Bank issued a bond to investors with a fixed yield, which was paid by Jamaica. A catastrophe bond would be triggered by a pre-determined criterion. That bond serves as an insurance premium for Jamaica by providing a quick release of payouts in the event of a disaster. As a result, Jamaica would not suffer a loss to their public debt, and investors enjoy stronger returns in comparison to bond markets.[287]

---

286 "Climate Risk Insurance: New Approaches and Schemes", Working Paper, *Allianz*, September 2016, page 11, Annex 588.

287 *See* "Climate Change And Sovereign Risk: A Regional Analysis For The Caribbean", Working Paper Nº IDB-WP-01574, *Inter-American Development Bank*, April 2024, page 13, Annex 504.

12 August 2024

Ms Donna Forde, Director of Foreign Service

Agent for Barbados

Professor Robert G Volterra, Partner at Volterra Fietta and Visiting Professor of International Law at University College London

Co-Agent for Barbados