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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROGRAM DOCUMENT FOR A

PROPOSED LOAN

IN THE AMOUNT OF US$100 MILLION

TO

BARBADOS

FOR THE

BARBADOS GREEN AND RESILIENT RECOVERY DEVELOPMENT POLICY LOAN

DECEMBER 15, 2022

Environment, Natural Resources & The Blue Economy Global Practice
Latin America And Caribbean Region

Public Disclosure Authorized

GOVERNMENT FISCAL YEAR

April 1 – March 31

CURRENCY EQUIVALENTS

(Exchange Rate Effective as of date)

Currency Unit

BBD$2.00 = US$1.00

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ABBREVIATIONS AND ACRONYMS

AAL	Average Annualized Losses
AM	Accountability Mechanism
BBD	Barbados Dollar
BERT	Barbados Economic Reform and Transformation
BESF	Barbados Environmental Sustainability Fund
BWA	Barbados Water Authority
C&I	Commercial & Industrial
CARICOM	Caribbean Community
CBB	Central Bank of Barbados
CCCCC	Caribbean Community Climate Change Centre
CDEMA	Caribbean Disaster Emergency Management Agency
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPF	Country Partnership Framework
DPF	Development Policy Financing
DPL	Development Policy Loan
DRM	Disaster Risk Management
EE	Energy Efficiency
EFF	Extended Fund Facility
EPD	Environmental Protection Department
ES	Energy Storage
EV	Electric Vehicle
FATF	Financial Action Task Force
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FIT	Feed-In Tariff
FX	Foreign Exchange
FY	Financial Year
GCRF	Global Crisis Response Framework
GDP	Gross Domestic Product
GFN	Gross Financing Needs
GHG	Greenhouse Gas
GoB	Government of Barbados
GNI	Gross National Income
GNP	Gross National Product
GRID	Green, Resilient, Inclusive Development
GRS	Grievance Redress Service
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IFI	International Financial Institution
IMF	International Monetary Fund
IUCN	International Union of Conservation of Nature
kWh	Kilowatt hour
LBS	Protocol Concerning Pollution from Land-Based Sources and Activities
LCU	Local Currency Unit
MMABE	Ministry of Maritime Affairs and the Clue Economy
MOE	Ministry of Energy, Small Businesses and Entrepreneurship
MOF	Ministry of Finance, Economic Affairs and Investment
MPCA	Marine Pollution Control Regulations Act
MTEF	Medium-Term Expenditure Framework
NDC	Nationally Determined Contribution
NIS	National Insurance and Social Security
NPL	Non-Performing Loan
NSP	National Strategic Plan
PA	Prior Action
PD	Program Document
PDO	Project Development Objective
PER	Public Expenditure Review
PFM	Public Financial Management
RE	Renewable Energy
SDR	Special Drawing Rights
SIDS	Small Island Developing States

SOE	State Owned Enterprise
TNC	The Nature Conservancy
USD	United States Dollar
UWI	University of the West Indies
UWI - CERMES	Centre for Resource Management and Environmental Studies, University of the West Indies
VAT	Value Added Tax
WB	World Bank
WBG	World Bank Group
WCR	Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region
WEEE	Waste Electrical and Electronic Equipment

BARBADOS

BARBADOS GREEN AND RESILIENT RECOVERY DPL

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SUMMARY OF PROPOSED FINANCING AND PROGRAM

BASIC INFORMATION

Project ID	Programmatic
P179112	No

Proposed Development Objective(s)

To support the Government of Barbados' strategic reforms to promote low carbon economic development and resilience to the deepening global crises, including climate change.

Organizations

Borrower: Barbados

Implementing Agency: Ministry of Finance, Economic Affairs and Investment

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Financing	**100.00**

DETAILS

International Bank for Reconstruction and Development (IBRD)	100.00

INSTITUTIONAL DATA

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Overall Risk Rating

Substantial

DPL Results Indicators

#	Indicator Name	Baseline	Target
Pillar A: Green and Blue Resilient Recovery			
A1	Number of reclaimed water reuse permits approved by the Environmental Protection Department under the Water Reuse Act. Estimated flows for water reuse from at least five wastewater treatment plants.	0 (2022) 0 (2022)	5 (2023) 174,000 US gallons per day (2023)
A2	Amendment to the Water Protection Bill and Water Order 2022. New Water Protection Zoning System adopted.	NA (2022) NA (2022)	Amendment to the Bill completed (2023) Water protection zoning system is incorporated in the physical development plan (2023)
A3	Amount of funds mobilized from the Government of Barbados to Barbados Environmental Sustainability Fund.	US$0 (2022)	US$2.5 m (2023)
A4	Companies within the source category identified in Section 4(11) of the Marine Pollution Control (Amendment) Act, Cap. 392 with direct discharges to the marine environment, complete the Discharger Form by December 2023 and Register with the Environmental Protection Department.	0 (2022)	3 (2023)
A5	Operationalization of the agriculture information management system as measured by: a) Percentage of agricultural land that is mapped in line with the parameters identified in the Climate Change and Agriculture Policy by end 2023. b) Gender disaggregated data is used to improve planning and decision-making: Conduct a gender analysis of the mapped farms and use it to develop a gender-sensitive action plan for assisting farms in upgrading to digital agriculture technologies.	0 (2022) NA (2022)	60 (2023) Preparation and adoption by Ministry of Agriculture (2023)
Pillar B: Low Carbon and Resilient Infrastructure			
B1	a) Standards and template established for ministry and agency level disaster management plans. b) Percentage of national emergency management offices and organizations that have completed an institutional review of their technical, financial, and administrative capacities.	NA (2022) 0 (2022)	Standards and Templates prepared (2023) 10 (2023)
B2	Renewable Energy capacity under development or operation (in MW).	30 (2022)	60 (2023)
B3	Percentage of budget programs tagged for climate change.	0 (2022)	25 (2023)

IBRD PROGRAM DOCUMENT FOR A PROPOSED LOAN TO BARBADOS

1. INTRODUCTION AND COUNTRY CONTEXT

1. This program document proposes a Green and Resilient Recovery Development Policy Loan (DPL) in the amount of US$100 million. The Development Objective is to support the Government of Barbados' strategic reforms to promote low carbon economic development and resilience to the deepening global crises, including climate change. This stand-alone DPL is designed to strengthen climate resilience and low carbon economic development through the adoption of a comprehensive package of strategic policy reforms that address Barbados' significant climate and environmental sustainability challenges. The DPL supports two core pillars reflective of the Government's priorities for resilient recovery, specifically: (i) Pillar A: Green and Blue Resilient Recovery; and (ii) Pillar B: Low Carbon and Resilient Infrastructure.

2. **Since graduating from the International Bank for Reconstruction and Development (IBRD) in 1994, Barbados has received exceptional IBRD financing on three occasions and is currently requesting a second DPL.** In FY21, a US$100 million DPL was approved to help the Government of Barbados (GoB) meet its financing needs resulting from the impact of the COVID-19 pandemic and to support subsequent economic recovery. The Board approved a Graduation Policy Waiver[1] for this loan. In addition, on two previous occasions Barbados received the same Graduation Policy Waiver[2]. Given the lingering impact of the pandemic, compounded by multiple external shocks, including natural disasters, the GoB has requested a stand-alone green and resilient DPL in the amount of US$100 million focused on: (i) scaling up resilient recovery efforts with a dedicated focus on climate adaptation and mitigation; (ii) promoting low carbon economic development; and (iii) strengthening climate and disaster resilience.

3. **In recent years, Barbados has implemented a series of important economic reforms addressing growth-constraining structural weaknesses.** Since 2018, Barbados has been proactively working with international partners, including the International Monetary Fund (IMF), to improve its fiscal position by developing and implementing a fiscal program that includes a restructuring of domestic and external public debt that has enhanced debt transparency and strengthened overall debt sustainability. Despite the challenges posed by the pandemic, the Government has continued to implement the comprehensive Barbados Economic Recovery and Transformation (BERT) Plan, launched in 2018. The onset of the pandemic led to a steep decline in economic activity. Per capita gross national income (GNI, Atlas method) declined from US$17,380 in 2019 to US$14,350 in 2020 as the economy contracted by 13.7 percent in 2020. Growth in 2021 remained sluggish at 0.7 percent, dragged down by two natural disasters: the volcanic ashfall from neighboring St. Vincent and the Grenadines in April 2021 and the Category 1 Hurricane Elsa in July 2021. Despite these challenges, the government took decisive action to put public debt on a downward trajectory and continued to implement its fiscal reform plans, along with support from International Financial Institutions (IFIs). At this juncture, the main risks to the economy include: prolongation of the

[1] In accordance with the Policies and Procedures Framework, an "exception" means a deviation from the policy's requirements that is provided for in the policy itself. However, there is no such provision in the graduation policy for continued lending to graduates after graduation. Therefore, any departure from the policy requires a waiver.
[2] Two loans were approved for Barbados to finance HIV/AIDS (multi-country) investment projects in FY2001 and FY2008. The case for the 2001 loan policy waiver was presented in the Program Appraisal Document. In 2008, the Bank's Managing Director approved the policy waiver.

COVID-19 crisis coupled with the emerging global crises; climate change impacts; global inflationary pressures (due to high food, fuel, and fertilizer prices); tightening global financial conditions, including increasing interest rates in the United States; the energy crisis in Europe; and the slowing economic growth in China.

4. **Paradoxically, Barbados' energy sector simultaneously presents one of the biggest challenges and opportunities for the country's green and resilient recovery agenda.** Despite championing clean energy development in the Caribbean with its pioneer solar water heating industry, Barbados remains heavily dependent on fossil fuel imports as 90 percent of its electricity and 98 percent of its transport rely on fossil fuels (Figures 1 and 2).

Figure 1: Barbados Energy Demand by Source

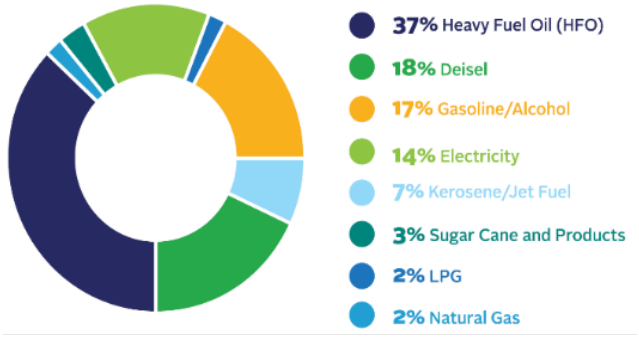
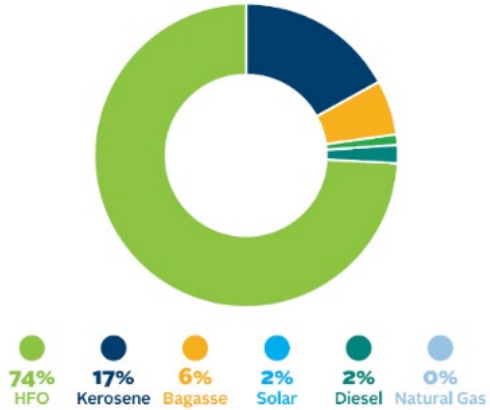


Figure 2: Electricity Generation by Fuel



Source: BNEP 2019

5. **This heavy reliance on fossil fuel imports exposes Barbados to international price fluctuations, which. impact the competitiveness of productive sectors**. Electricity tariffs in Barbados fall within the average range of those observed in the Caribbean – between 0.3 US$/kWh and 0.4 US$/kWh in 2021 – but are three times higher than average global electricity prices. Similarly, the high price of fuel for transport – gasoline and diesel retail prices exceeded US$2 per liter in 2022 – is emblematic of the vulnerability of Small Island Economies (SIE) caught between the short term vital need to import fuels and the long-term goal of transitioning to greener energy sources. Rising fuel prices exacerbate the increasing vulnerability of Barbados' economic recovery. The Barbados' National Strategy Plan (NSP) and revised Nationally Determined Contributions (NDC) aim to achieve 100 percent clean energy use by 2030 to minimize the impact of future fuel price shocks.

6. **This dependency on oil products also hampers the country's emissions reduction objectives**. Oil products adversely affect the local environment and the Blue Economy through fuel leakage and storage hazards, as well as increasing carbon dioxide emissions. The electricity and transport sectors of Barbados represent 74 percent of national Greenhouse Gas (GHG) emissions[3] and reducing dependency on imported oil products would also contribute to achieving the country's emission

[3] Source: UNFCCC[3], 2018

reduction objectives. Implementing the GoB's energy transition plan would improve, economic resilience while contributing to its climate mitigation efforts with local clean energy resourcing.

7. **The war in Ukraine and its impact on global oil and food prices has had a significant impact on households. Higher costs of basic foodstuffs, rising electricity bills and fuel costs at the pump, as well as higher import costs have affected all households.** The GoB has taken steps to ease this burden on its citizens. In July 2022, the Prime Minister announced a series of fiscal measures[4], including: (i) a Value Added Tax (VAT) reduction on households' electricity bills, from 17.5 to 7.5 percent, up to the first 250 kWh; and (ii) a VAT cap on fuel when the oil price is over US$85/barrel. The cost to the government of this initiative is BBD$1.5 million/month (estimated at BBD$10.5 million from August 01, 2022, to January 31, 2023).

8. **Exacerbating these risks are the rapidly increasing multi-dimensional impacts of climate change.** Barbados is highly vulnerable to climate change and faces severe socio-economic risks related to the increased frequency and intensity of climate-induced natural disasters (Box 1). The most severe of such impacts include sea level rise and increased intensity and frequency of tropical storms and hurricanes. The impact of these extreme weather events will dampen growth and lead to higher levels of public debt and increased poverty.

Box 1: The most significant climate challenges affecting Barbados include:

Disruption of Fisheries and Agricultural Industries: Drought, flooding and storm damage, saline intrusion, and pest and invasive species outbreaks disrupt agricultural production and the integrity of coastal fisheries, threating food security. In addition, increased marine pollution reduces marine species' resilience, such as coral reefs, increasing the vulnerability of coastal ecosystems to climate change.

High dependency on Fossil Fuels: Despite having significant potential for solar energy, electricity generation remains heavily dependent on fossil fuels, leading to higher emissions, while also resulting in high electricity tariffs and increased exposure to import price fluctuation.

Water Resources and Public Health Challenges: Limited and declining water resources and increased groundwater contamination from flooding, soil, and pollutant infiltration, as well as saline intrusion, leads to further reduction of water availability and increased health-related water stress as well as increased prevalence of water and vector-borne diseases.

Vulnerability of Population to Natural Disasters: Low-lying areas along the west and south coast, where approximately 25 percent of the population resides, are prone to flooding caused by torrential rainfall, storm surge, and sea level rise. Small-scale landslides have also occurred in the northeast portion of the country.

[4] Other measures included: (i) extension of the school feeding program during the summer 2022 and until back to school; a list of food items on which no VAT will be charged; and implemented by the private sector, through a compact with the Government, a price reduction on 45 key items for a period of six months from July 21, 2022.

9. **High debt and limited fiscal space weaken the country's capacity to address climate-induced disaster risks, and climate change-related costs and disruptions are expected to increase and become more severe.** Average annualized losses due to tropical cyclones have totaled US$47.7 million with an additional US$13.2 million for earthquakes[5]. To address these risks, the GoB has begun to build fiscal resilience by establishing a contingency fund, leveraging insurance products, and integrating climate resilience considerations into its public investment program. However, it not yet developed a comprehensive nor institutionalized approach to proactively address adverse weather and mounting climate impacts.

10. **Deteriorating freshwater availability, due to the effects of climate change is having an impact on socio-economic development.** Barbados is the 15th most water scarce country in the world and its water stress level is the highest of all Small Island Developing States (SIDS) (Figure 3). In 2018, the water stress level was 87.5 percent, indicating that the country is very close to withdrawing all of its renewable freshwater resources of 80 million m^3/year (Figure 4). Climate change is worsening this situation as it increases the severity of tropical storms and hurricanes, lengthens seasonal dry periods, and increases the frequency of droughts. As a result, the country is experiencing rapid depletion of freshwater aquifers, an increase in saline intrusion, and pollution of groundwater resources and coastal seawater. The Food and Agriculture Organization (FAO) estimates that the agriculture sector uses 67 percent of available water supply, municipalities 25 percent, and industry 8 percent. Declining water availability for irrigation adversely affects the island's agriculture production, causes environmental degradation by groundwater over-abstraction, and stormwater runoff is negative affects the tourism sector upon which the economy is heavily reliant. Barbados is in urgent need of improved regulation for groundwater abstraction and the protection of marine-based ecosystems primarily from agriculture and sewage runoff, which are the main sources of nitrate pollution. The Government has resorted to construction of desalination plants to meet the water demand, but the associated costs are high and aging infrastructure, pipes, and reservoirs are in dire need of rehabilitation. The COVID-19 pandemic has impacted the already vulnerable financial health of the country's sole water service provider, the Barbados Water Authority (BWA), as it has continued to supply water despite declining revenues and increased costs. Water is a cross-cutting theme that contributes to the country's human development, environmental sustainability, resilience, and economic growth objectives. As such, it is imperative for Barbados to strengthen its policy and regulatory framework to reduce water stress and better manage its water resources.

[5] Barbados Comprehensive Disaster Risk Profile, World Bank, 2021 (not published yet)

Figure 3: Water stress in SIDS, with available data (2018)

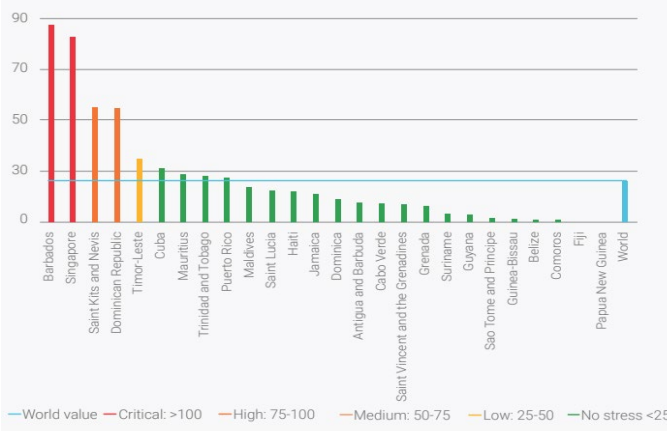
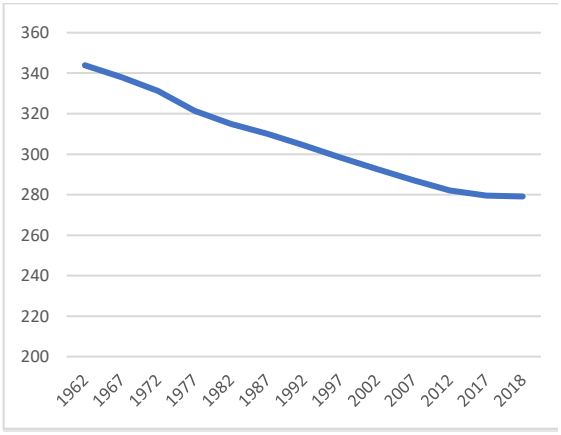


Figure 4: Barbados Renewable Freshwater Resources Per Capita, 1962-2018



Source: FAO IMI-SDG6 adapted from FAO (2021a), UN Cartographic Section (2018)[6,7]

11. **Women have been hard hit by the effects of the pandemic and the numerous external shocks adversely affecting Barbados' tourism-dependent economy.** Job losses disproportionately affect low-income women, 62 percent of whom reported job losses during the pandemic compared to 38 percent for men[8]. The tourism sector accounted for the largest share of laid-off workers, of which women comprise the majority. Although tourism is expected to continue to create employment opportunities for women, investment in targeted skills training for women, particularly in climate-smart agriculture practices can provide women with important alternate employment opportunities. In addition, coastal areas, where most tourism infrastructure is located, are increasingly vulnerable to climate-induced natural disasters, and women living in these areas are more vulnerable to such impacts given their limited access to financial and physical assets. Women-owned and women-led firms also face greater financial constraints than other firms, with 76 percent of such firms citing access to finance as a key barrier to ensuring resilience to climate-related shocks. Increasing access and participation of women in growth sectors such as climate-smart agriculture will enable women to better absorb and adapt to the impacts of climate change and natural disasters as well as future external shocks.

12. **Developing climate-smart agriculture will require increased participation and productivity of women in a sector where the gender-differentiated effects of climate change are prominent.** In the Caribbean region, women comprise less than 20 percent of agricultural land holders, which limits access to credit and hence opportunities to finance climate-smart agriculture innovations, acquisition of new technologies, and the adoption of more efficient practices which would allow them to build greater resilience to climate change.[9] In Barbados, the acreage of farms operated by

[6] "Progress on level of water stress GLOBAL STATUS AND ACCELERATION NEEDS FOR SDG INDICATOR 6.4.2 2021, Food and Agriculture Organization of the United Nations" page 27. Source: FAO IMI-SDG6 elaboration based on FAO. 2021.
[7] Renewable Internal Freshwater Resources per Capita (cubic meters). *https://databank.worldbank.org/source/world-development-indicators*
[8] Inter-American Development Bank (2020). The Consequences of COVID 19 on Livelihoods in Barbados: Results of a Telephone Survey: Job losses were higher for poor and vulnerable households as well as for women, compared to men.
[9] FAO, 2011

women represent just 6 percent of the total area under agricultural production and 25 percent of women farmers do not own the land they farm.[10] Building women's resilience in agriculture and augmenting women's contributions to developing climate-smart agriculture requires improving their access to productive resources, including land. Although agriculture represents a small share of GDP, women's participation and empowerment in developing and implementing new agriculture-related policies is critical.

13. **Implementation of the recently approved Climate Change and Agriculture Policy provides an important opportunity to increase women's participation in and ownership of key resources in the agriculture sector.** This will ensure that land ownership by women will increase women's representation in the development of climate-smart agriculture. Increasing the adoption of climate-smart and climate-resilient agriculture practices and technologies on women-owned agricultural lands will increase the efficiency of these farms and their revenue-generating potential. The Policy will also strengthen the system for collection, monitoring, and communication of agriculture-sector related data critical for improved climate adaptation, including sectoral gender-disaggregated data.

14. **It is important to note that the World Bank has no active operations in Barbados.** The last Bank-financed operation, the COVID-19 Response and Recovery DPL (P175492), was exceptionally approved in 2021. Its prior actions helped tourism-related sectors receive vital support for employment and investment during the pandemic and included development of a national COVID-19 vaccination strategy. That first stand-alone DPL also included a strong set of actions that supported the post-crisis economic recovery process, including the adoption of an enhanced legal framework for customs, the new Central Bank law, payment system development, better regulation and supervision of the insurance industry's disaster risk exposure, and strengthening of the government's disaster risk financing and resilience policies.

15. **The proposed reform program under this DPL is consistent with the World Bank Group's (WBG) crisis response framework for supporting Green, Resilient and Inclusive Development (GRID) and its Global Crisis Response Framework (GCRF).** The four key Pillars of the GCRF are: (i) Responding to Food Insecurity; (ii) Protecting People and Preserving Jobs; (iii) Strengthening Resilience; and (iv) Strengthening Policies, Institutions and Investments for Rebuilding Better. Aligned with the GRID framework and pillars 1, 3 and 4 of the GCRF, this operation supports reforms that address immediate and long-term constraints to green, blue and climate resilient socio-economic recovery. Affording Barbados exceptional access to IBRD financing to support this agenda is critical to the country's resilient recovery and ensuring a healthy buffer to future shocks. This operation has been designed in close coordination with the IMF's recently approved EFF/RSF program that builds on the early upstream actions completed as part of this DPL. It is important to note that the eight policy measures, taken together, aim to increase climate resilience and reduce GHG emissions. The political risks to implementation of the program are limited by the fact that the ruling party holds the majority in both chambers of Parliament. A climate change and disaster risk screening exercise was completed during the preparation of this DPL, and the outcomes show that the selected policy actions will help to reduce climate change and disaster risks through policy development, capacity building, and outreach.

[10] FAO 2022. Gender, Agri-food Value Chains and Climate-Resilient Agriculture in Small Island Development States.

2. MACROECONOMIC POLICY FRAMEWORK

2.1. RECENT ECONOMIC DEVELOPMENTS

16. **In June 2018, in response to a worsening fiscal and external liquidity position, Barbados announced the BERT Plan aimed at restoring macroeconomic stability while safeguarding the financial and social sectors.** The BERT Plan included the suspension of debt payments to external commercial creditors and a comprehensive restructuring of domestic and external debt (public debt had reached 158.3 percent of GDP in 2017), as well as comprehensive measures in support of fiscal consolidation and economic growth. These measures combined with the fact that the debt restructuring translated into lower debt service payments, from 7.5 percent of GDP in 2017 to 3.8 percent in 2018, enabled the government to achieve the primary surplus target of 6 percent in 2019. On December 11, 2019, Standard and Poor's upgraded Barbados' foreign currency sovereign credit rating from Select Default to B-. The fiscal adjustment was interrupted by the COVID-19 pandemic, which resulted in a sharp reduction in revenues and additional spending. Yet, despite these challenges, further compounded by natural disasters and inflationary pressures, the authorities completed an IMF program under the Extended Fund Facility (EFF) that began in 2018 and supported the implementation of the BERT Plan.

17. **The pandemic plunged the tourism-dependent economy of Barbados into a deep recession.** After a decade of low growth and continued build-up of fiscal and external imbalances, high public debt and low reserves, the government of Barbados pursued a comprehensive debt restructuring in 2018. Real GDP contracted slightly in 2018 and 2019, led by the wholesale and retail sector, which employs the largest share of workers in Barbados (16 percent in 2018), in part due to fiscal adjustment. The COVID-19 pandemic led to a significant contraction of 13.7 percent of real GDP in 2020, largely driven by manufacturing, transport, accommodation, and financial services. Due to strong border safety restrictions that prevented travel, arrivals from the US and other countries plummeted. Tourism came to a virtual standstill. Inflation fell to 2.9 percent in 2020, attributable in part to weak economic activity, while unemployment reached 10.4 percent. Unemployment insurance claims increased six-fold during this period, requiring an estimated US$80 million (1.75 percent of GDP) in central government liquidity support in FY2020/21 for the National Insurance Scheme (NIS)[11]. In addition, the GoB implemented several large programs of targeted support to businesses and households to mitigate the impact of the pandemic. The fiscal deficit widened to 4.5 percent of GDP and public debt reached 139.8 percent of GDP (Table 1). As the economy contracted and poverty likely rose in tandem, the government placed stronger emphasis on provision of social safety nets to protect vulnerable groups and help displaced workers secure employment.[12]

18. **Despite these challenges, the GoB made steady progress on improving the business environment to support economic growth.** It implemented reforms at the Customs and Excise Department, such as the Trusted Trader program and Automated Systems for Customs Data (ASYCUDA) to facilitate

[11] NIS covers all employed and self-employed persons and offers five main types of social security benefits with payments from three separate funds,

[12] According to the latest Barbados Survey of Living Conditions fielded in 2016-2017, 17.2 percent of Barbadians were living below the national poverty line and 3.4 percent were extremely poor.

trading across borders, opened up the electricity sector to independent power producers, and introduced measures to ensure more reliable payments and digital identity systems. Several licensing and other services critical to the hospitality sector have been migrated online, reducing the time it takes to receive Government's response to an application.

19. **The economy is bouncing back from the pandemic**. As tourism is expected to reach 80 percent of 2019 pre-COVID arrivals, GDP is estimated to grow at 10 percent in 2022. However, due to high unemployment (estimated at 9.3 percent in June 2022), the increase in private consumption and fixed investment is expected to be modest. Inflation is projected to reach 9.4 percent in 2022 due to the global increase in international oil and food prices fueled by the war in Ukraine.

20. **The current account deficit climbed to 10.9 percent of GDP in 2021 and is expected to decline only slightly to 10.1 percent of GDP in 2022 despite the tourism recovery due to increasing domestic demand and high food and fuel prices.** Imports of goods and services are expected to increase from 40.3 percent of GDP in 2021 to 40.7 percent of GDP in 2022, as exports of goods and services climb from 30.7 percent of GDP in 2021 to 32.4 percent of GDP in 2022. These high current account deficits have been largely financed by continued IFIs loans and Foreign Direct Investment (FDI) in the tourism sector, which, however, remains subdued, at 5.3 percent of GDP In 2021 and 5.8 percent of GDP in 2022. Since the launch of the BERT Plan, gross international reserves have rebounded strongly, supported by loans from IFIs, FDI and the IMF's SDR allocation. They climbed to US$1.5 billion or 9 months of imports at end-2021 and remained at about 7 months of imports in September 2022. Over the medium term, the current account deficit is projected to decline steadily, financed primarily by increasing private sector investment, including into the tourism sector and renewable projects.

21. **The primary fiscal surplus is expected to reach 2.0 percent of GDP in FY2022/23 after a deficit of 0.9 percent in FY2021/22.** The positive balance is attributed to an increase in revenue due to the post-pandemic recovery and a decline in spending as a share of GDP, including on wages, public investment, and grants to public institutions. Domestic expenditure arrears are being gradually repaid. Government revenues are expected to increase to 29.3 percent of GDP in FY2022/23 due to new temporary tax measures. A one-off pandemic corporate retroactive levy of 15 percent to the past two-year period is expected to raise revenue about 1 percent of GDP in FY2022/23. Furthermore, a 1 percent levy on income was charged to high income individuals for 12-months, which is expected to raise revenues about 0.2 percent of GDP in FY2022/23, while revenues are expected to follow the rebound in economic activity. At the same time, the VAT was capped on oil products for intermediate consumption for six months, consistent with West Texas Intermediate (WTI) oil prices (US$ 85 per barrel), which will lead to some revenue losses. The overall fiscal deficit is expected to decline from 4.8 percent of GDP in FY2021/22 to 2.2 percent of GDP in FY2022/23.

22. **Public debt remains high at 135.1 percent in 2021 and 122.5 percent of GDP in 2022.**[13] The 2018-19 debt restructuring, provided a debt reduction of about 30 percent of GDP, and a swap of a large part of short-term debt with longer term debt significantly smoothed debt service. Around half of total public gross financing needs are covered by commercial bank debt with limited rollover risk, as local commercial banks have agreed to rollover the full stock of these claims for the first 10-year

[13] Public debt is defined as domestic and external central government debt, SOE debt guaranteed by the central government and domestic central government expenditures arrears.

period; the rest of the short-term debt is held by the Central Bank of Barbados (CBB). Principal payments associated with restructured external debt will resume only from 2025 onwards. After the domestic debt restructuring in 2018, the CBB claims on the central government declined and the T-bill rate decreased, while the deposit rate remained low.

23. **Conditions in the financial sector have remained stable**. The system's non-performing loans (NPL) ratio stood at 7.2 percent with provision coverage of just below 60 percent in 2021. However, private-sector lending remains very low due to a lack of bankable projects, leading to excess liquidity of commercial banks. Inefficiencies in financial intermediation are evident from the 6 percent spread of the rate between bank loans and deposits. Measures to support the credit market implemented by the central bank and commercial banks in March 2020, included a reduction in the discount rate for overnight loans from 7 percent to 2 percent and a reduction in the minimum statutory holding requirement for government securities from 17.5 percent to 5 percent of deposits. As expected, banks have not yet resorted to liquidity support from the CBB and are still holding excess bank reserves at the CBB. IMF staff assessed the measures taken by the CBB as appropriate to indicate to the banks that sufficient liquidity support is available. The effective banking regulatory framework in Barbados is Basel II, under which banks follow standardized approaches in the calculation of risk-weighted assets and prepare their financial statements according to International Financial Reporting Standards.

24. **The monetary transmission mechanism is weak due to abundant liquidity and excess reserves in the financial system.** While Barbados continues to maintain adequate foreign exchange buffers to buttress the credibility of its exchange rate peg against the US dollar that has been in place since 1975 and enjoys strong support by all domestic stakeholders, the Central Bank of Barbados (CBB) has few instruments at its disposal to tighten monetary conditions under the peg in response to the surge in inflation.

Table 1. Barbados: Key Macroeconomic Indicators (2019-2025)

			Est.	Projections			
	2019	2020	2021	2022	2023	2024	2025
	Annual percentage change						
Real sector							
Real GDP (market prices)	1.3	-13.7	1.1	10.0	4.8	3.9	2.8
Consumer price index (avg.)	4.1	2.9	3.1	9.4	5.8	3.9	3.3
Monetary							
Broad money (M2)	3.0	7.3	5.6	6.9	2.4	2.0	1.4
Credit to private sector	1.0	-1.2	-1.2	1.0	2.0	2.8	3.0
Fiscal[1]							
Revenue	30.6	28.4	28.9	29.3	28.9	29.1	29.6
Expenditure	26.9	32.9	33.7	31.5	29.8	29.6	28.9
Overall balance	3.7	-4.5	-4.8	-2.2	-0.9	-0.5	0.7
Primary balance	6.2	-0.9	-0.9	2.0	3.5	4.0	5.0
Public debt	123.0	139.8	135.1	122.5	114.6	107.9	101.1
External debt	33.5	46.4	48.6	46.1	46.2	45.8	43.4
	Percent of CY-GDP						
External							
Current account balance	-2.8	-5.9	-10.9	-10.1	-8.9	-7.9	-6.6
Exports (goods and services)	42.3	29.6	30.7	32.4	33.7	34.1	35.0
Imports (goods and services)	39.2	36.0	40.3	40.7	39.9	39.2	38.1
Foreign direct investment	4.6	8.1	5.3	5.7	5.5	5.4	5.2
Memorandum items							
Exchange rate (BD$/US$)	2	2	2	2	2	2	2
Nominal GDP, CY (BD$ million)	10,596	9,431	9,735	11,578	12,465	13,271	13,983

Sources: Barbados authorities; IMF; and World Bank staff estimates. 1/ Fiscal year is from April 1 to March 31.

Table 2. Barbados: External Financing Requirements and Sources

				Projections			
	2019	2020	2021	2022	2023	2024	2025
(In million US$)							
Gross Financing Requirements	**214**	**364**	**612**	**679**	**670**	**669**	**718**
Current Account Balance	147	278	528	582	558	527	459
Debt Amortization	67	86	84	97	113	142	259
Sources of Financing	**214**	**364**	**612**	**637**	**533**	**631**	**699**
Public Sector	253	578	465	206	374	251	251
o/w: WB	0	0	100	0	100	0	0
IDB	0	200	100	100	100	80	80
IMF	0	0	130	42	113	114	57
FDI and Long-term debt (net)	244	380	259	327	344	359	364
Change in Reserve (- increase)	-241	-590	-199	103	-85	21	84
Capital Account Balance	-3	-2	-3	0	0	0	0
Short-Term debt	-42	-38	-22	0	0	0	0
Net errors and omissions	2	36	112	0	0	0	0
Financing Gap	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Memorandum item							
Gross financing requirements, percent of GDP	4.0	7.7	12.0	11.5	10.6	11.2	10.3

Table 3. Barbados: Key Fiscal Indicators

		Est.	Projections				
	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
(In percent of GDP unless otherwise indicated)							
Total revenue	30.6	28.4	28.9	29.3	28.9	29.1	29.6
Current revenue	30.5	28.4	28.8	29.1	28.8	29.1	29.6
Tax revenue	28.6	26.6	27.1	27.5	27.2	27.3	27.8
Income and profits	7.4	9.7	8.2	8.4	7.5	7.5	7.6
Taxes on property	2.1	1.9	2	2	2	2	2.1
VAT	9.4	7.4	8.7	8.6	8.9	8.9	9
Social levy (NSRL)	0	0	0	0	0	0	0
Excise	2.4	1.6	2.1	2	2.1	2.1	2.2
Import taxes	2.2	2	2.2	2.3	2.3	2.3	2.4
Other taxes	5	3.9	4	4.2	4.5	4.5	4.5
Nontax revenue	2	1.8	1.7	1.6	1.6	1.8	1.8
Capital revenue and grants	0.1	0	0.1	0.2	0.1	0.1	0.1
Total expenditure	**26.9**	**32.9**	**33.7**	**31.5**	**29.8**	**29.6**	**28.9**
Current expense	25	30	29.5	28.1	26.9	26.5	25.8
Wages, salaries, and SSC	7.8	8.5	8.2	7.9	7.7	7.6	7.6
Goods and Services	3.6	4.2	4.8	4.7	3.8	3.7	3.6
Interest Payments	2.4	3.6	3.9	4.2	4.4	4.5	4.3
Transfers	11.1	13.7	12.6	11.3	10.9	10.7	10.3
o/w Subsidies	1	1.7	1.9	1.3	1.1	1.1	1
o/w Grants to public institutions	6.7	8.4	7.4	6.5	6.3	6	5.7
o/w Retirement benefits	3.5	3.7	3.3	3.6	3.5	3.5	3.5
Capital expenditure and net lending	1.9	2.9	4.2	3.4	3	3.1	3.1
Overall Balance	3.7	-4.5	-4.8	-2.2	-0.9	-0.5	0.7
Primary Balance	6.2	-0.9	-0.9	2	3.5	4	5
Memorandum items							
Central government debt	123	139.8	135.1	122.5	114.6	107.9	101.1
Nominal GDP, FY (Bds$ millions)	10,305	9,507	10,193	11,817	12,672	13,446	14,139

Sources: Barbados authorities; IMF; and World Bank staff estimates.

1/ Fiscal year is from April 1 to March 31.

3/ Privatization proceeds.

4/ Net of domestic expenditure arrears repayment.

5/ Insurance companies and other non-bank private sector.

2.2. MACROECONOMIC OUTLOOK AND DEBT SUSTAINABILITY

25. **Growth is expected to strengthen as tourism rebounds but is expected to remain relatively low in the medium term due to continued fiscal consolidation.** Assuming that resumption of travel will be sustained and tourist arrivals will return to pre-pandemic levels, GDP growth is expected to reach 4.8 percent in 2023. Once tourism reaches pre-pandemic levels, growth is expected to slow to 2.4 percent during 2024-27, significantly above the pre-pandemic rate, supported by growth-enhancing structural reforms. Unemployment is expected to decrease gradually. Inflationary pressures are expected to moderate, with the average annual inflation rate dropping to 3.5 percent in the medium term.

26. **The current account is expected to decline over the medium-term**. The current account deficit is expected to decrease to 8.9 percent of GDP in 2023 mainly due to the continued increase in travel related revenues and higher exports of services. It is projected to come down to about 5 percent of GDP in the medium term, primarily financed by FDI, which is expected to increase modestly in the medium term, averaging about 5.5 percent of GDP.[14] Barbados has a relatively large diaspora (114,000) compared to its resident population (290,000). Remittances are assumed to remain elevated but to decline in line with the expected economic slowdown in source markets. Import growth is expected to remain subdued due to the effects of fiscal consolidation.

27. **The government is expected to run a primary surplus over the medium term.** The primary fiscal surplus is expected to reach 3.5 percent of GDP in FY 2023/24. The increase in the fiscal balance is attributable to government curbs on current expenditures and implementation of fiscal measures in line with the IMF program. Government revenues are expected to remain in the vicinity of 29 percent of GDP in FY 2023/24, but expenditures are expected to decrease from 31.5 percent of GDP in FY 2022/23 to 29.8 percent of GDP in FY 2023/24 as pandemic-related support is fully wound down and a reduction in State Owned Enterprise (SOE) subsidies is resumed. The overall fiscal deficit is expected to decline to 0.9 percent in FY 2023/24.

28. **Public debt is assessed to be sustainable but subject to high risks.** The public-debt-to-GDP ratio is expected to decline to 114.6 percent of GDP in 2023. The debt anchor of 60 percent of GDP by FY2035/36 may be reached with primary surpluses of 5-6 percent of GDP from FY2022/23 onwards. The credibility of this anchor is supported by the fact that the fiscal adjustment measures implemented by the government helped to achieve a primary surplus of 6 percent of GDP prior to the COVID-19 pandemic. Higher primary surpluses in subsequent years are key to ensure that Barbados can continue its progress in reducing its debt-to-GDP ratio, which was interrupted by the COVID-19 pandemic (Figure 5), and meet its target, although public debt will likely be assessed as sustainable even before the target is met. Market perceptions of country risk improved, with sovereign spreads standing at about 400 basis points in November 2022, although rising policy rates in the advanced countries may increase the risk in addition to having a direct effect on the government's costs of borrowing. Although gross financing needs (GFN) are projected to stay below the risk assessment threshold, three stress tests suggest that real GDP, contingent liability, and combined shocks may temporally move the GFN to GDP ratio above the 15 percent threshold. These

[14] FDI in the tourism sector may increase once the COVID-19 pandemic fully recedes. In this sense, the projection of the level of FDI is conservative.

risks are mitigated by the track record of the GoB in implementing the recent fiscal consolidation in the context of an IMF program. The composition of public debt is presented in Figure 6.

Figure 5: Barbados: Expected evolution of the level of public debt and gross financing needs

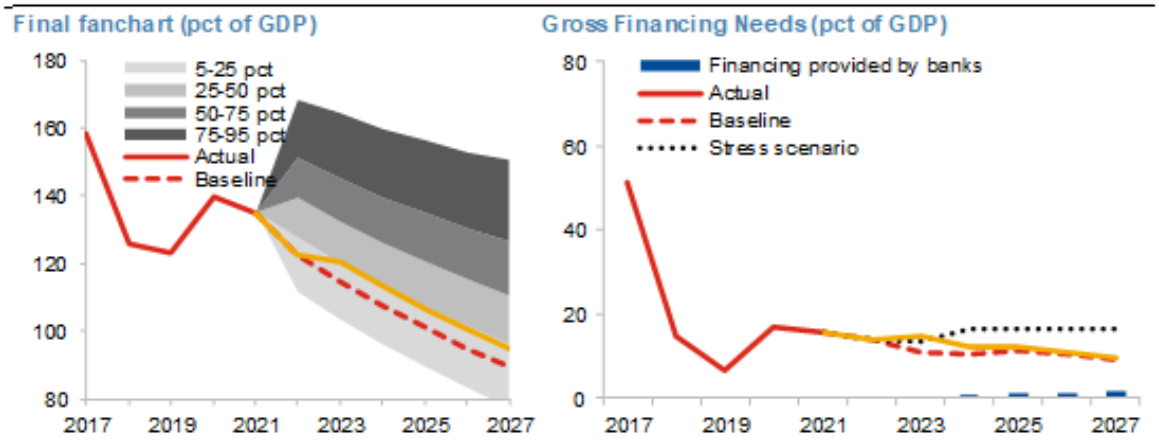
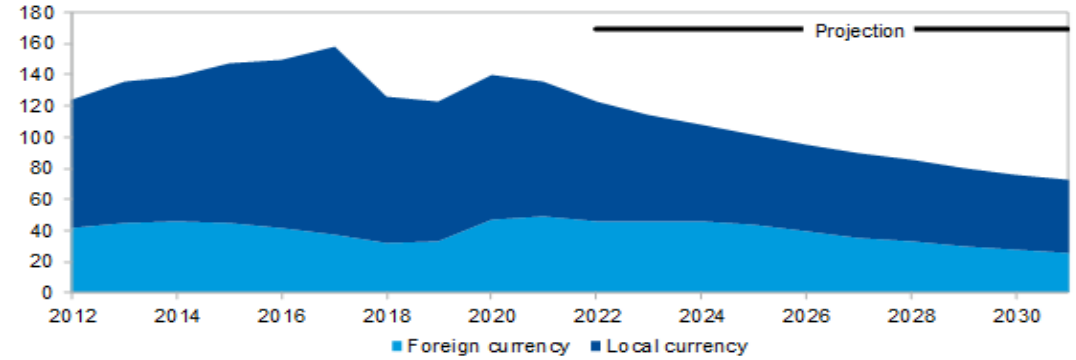


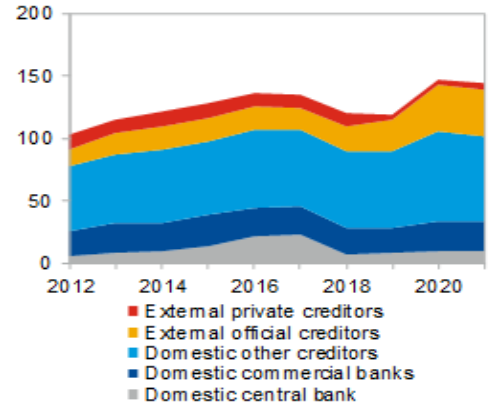
Figure 6: Barbados: Composition of public debt

Debt by currency (percent of GDP)



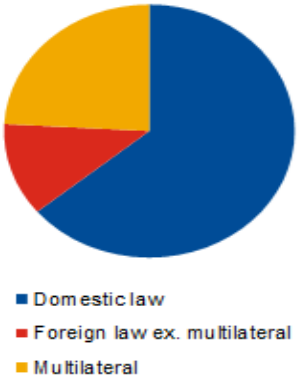
Note: The perimeter shown is central government.

Public debt by holder (percent of GDP)



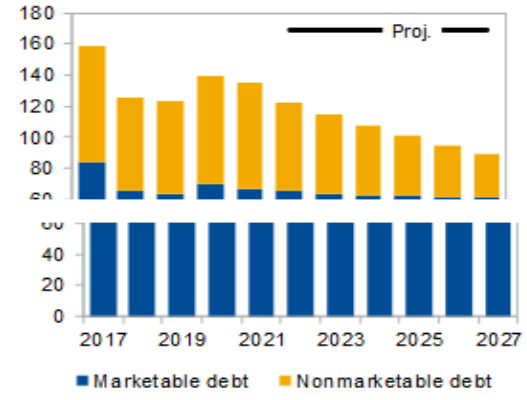
Note: The perimeter shown is general government.

Public debt by governing law, 2021 (percent)



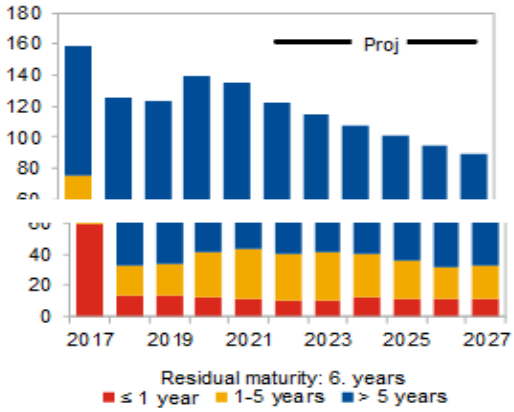
Note: The perimeter shown is general government.

Debt by instruments (percent of GDP)



Note: The perimeter shown is general government.

Public debt by maturity (percent of GDP)



Note: The perimeter shown is general government.

29. **SOE reform plays an important role in accelerating economic growth and securing fiscal space.** Continuation of SOE reforms during FY 2022/23 seeks to reduce transfers to SOEs and government dependence by eliminating inefficiencies, decreasing expenditures, and boosting investments for a green economy. Although the reduction in transfers to SOEs began during the first year of implementation of the BERT plan, it was paused during the COVID-19 pandemic. However, it is expected to be resumed in FY 2023/24, and several changes have already been implemented including: borrowing by SOEs needs to receive approval of the Minister of Finance; and loans by SOEs are being guaranteed by the Central Government. In addition, SOE reforms will also seek to improve reporting tools, to analyze their financial performance and assess risks. It will seek to adjust cost structures, revenue frameworks, and institutional adjustments, such as merging and streamlining SOEs.

30. **The government intends to enhance the sustainability of the pension system, introducing the civil pension law that was completed in November 2020, but delayed due to COVID-19.** This law will help to achieve better fiscal outcomes by costing different pension systems for new entrants to the public service, hardening the extension of service for new public servants, and requiring contributions for income above the maximum limits established by the NIS. It is expected to be submitted to Parliament in 2023. On the other hand, Government is seeking to transition the NIS from a Government Department to an independent statutory corporation by the end of 2022, to improve operational flexibility to achieve its core functions.

31. **Recovery of economic activity, consumer price pressures and maintaining liquidity of domestic markets will be the CBB's priorities in the immediate term.** In December 2020, Barbados enacted a new Central Bank Act to enhance the CBB's autonomy, mandate, and decision-making structures. The main objective of the CBB is to maintain the value of the currency and promote financial stability. The Act redefines this mandate to focus on core central bank activities, with the objective of maintaining the value of the currency and promoting financial stability. The CBB is not allowed to conduct quasi-fiscal activities, and CBB's advances to the government have been limited to short term advances to permit the Government to manage its cash flow. The new Act limits financing of the government to 7.5 percent of an average of government revenue observed in the preceding three years, or in exceptional emergency situations, such as hurricanes (up to 3 percent of GDP). The Act also redefines the governance structure of the CBB to limit potential interference in policy formulation. The mandate of the CBB Board will be limited to overseeing the Executive Committee. The Executive Committee will formulate and implement policies, and oversee daily management of the CBB. The Act includes a double veto procedure for the appointment of the Governor and members of the CBB Board and limits the circumstances under which the Governor of the CBB and Board members can be dismissed. The Act also includes an escape clause to allow the CBB to purchase a limited amount of government securities on the primary market in the event of a public emergency declared by Parliament.

32. **It is expected that the financial system will remain liquid.** Private-sector credit remains subdued due to weak domestic demand. However, credit to the private sector is expected to recover in the near term, in line with higher consumer confidence and lower unemployment. As of the end of 2021, the system-wide capital adequacy ratio (CAR) stood at 16.8 percent. Liquid assets to total assets were at 34.2 percent in June 2022 and the NPLs declined from 7.2 percent at the end of 2021 to 6.5 percent in June 2022. Provisions have reached 51.3 percent of NPLs. Banks are also liquid in Foreign Exchange (FX) acquired from clients and, as such, have been able to meet the FX demand

without resorting to CBB reserves. The CBB has few instruments at its disposal to tighten monetary conditions under the peg in response to the surge in inflation given weak monetary transmission.

33. **Barbados is still on the FATF grey list but undertook significant efforts in revising its legislative framework to be removed from the list.** Improvements regarding transparency of information, supervision of the nonfinancial sector business, and an increase in financial intelligence are still needed. Nevertheless, Barbados was removed from the EU list of third-country jurisdictions in February 2022. Barbados made a high-level political commitment to work with FATF and the Caribbean Financial Action Task Force (CFATF) to strengthen the effectiveness of its Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) regime in February 2020. Since completion of its Mutual Evaluation Report (MER) in November 2017, Barbados has made progress on several actions recommended by MER to improve technical compliance and effectiveness, including updating of the National Risk Assessment and developing mitigating measures. Barbados has committed to implement its action plan, including by: (i) demonstrating it effectively applies risk-based supervision for FIs and Designated Non-Financial Businesses and Professions (DNFBPs); (ii) taking appropriate measures to prevent legal persons and arrangements from being misused for criminal purposes, and ensuring that accurate and up-to-date basic and beneficial ownership information is available on a timely basis; (iii) increasing the capacity of the financial intelligence unit to improve the quality of its financial information to further assist law enforcement authorities in investigating money laundering or terrorist financing; (iv) demonstrating that money laundering investigations and prosecutions are in line with the country's risk profile and reducing the backlog to complete prosecutions that result in sanctions when appropriate; and, (v) pursuing confiscation in money laundering cases, including by seeking assistance from foreign counterparts.

34. **Recapitalization of the CBB and the NIS has been underway and will continue in the medium to long term.** The CBB and NIS combined held 54 percent of unrestructured domestic debt and suffered high NPV losses in the debt restructuring process, 75.7 percent, and 41.3 percent, respectively. As a result, the CBB moved into negative capital, estimated at negative BBD$ 1.6 billion. In the meantime, the income stream from exchanged securities in the CBB is sufficient to satisfy operational expenses. In turn, the NIS lost 26 percent of its reserves in the restructuring but will face lower debt services payments over the medium term. The IMF estimates that the CBB's operating balance will become negative around 2028 and reserves will be exhausted by 2045. The authorities have considered different options for addressing the problem (with IMF's technical assistance) and opted for a gradual recapitalization based on profit retention. The process can be accelerated over the medium term if fiscal space allows. T The recapitalization of the NIS will be initially focused on restoring the Unemployment Benefit Account over the next three to five years.

35. **The GoB recognizes the importance of continuing to enhance the ease of doing business as key to achieving inclusive and sustainable growth**. In the aftermath of the COVID-19 crisis, it will continue to work towards strengthening company law to protect minority shareholders, digitizing property records in the land registry, increasing access to credit by strengthening credit registries, and enforcing contracts and establishing a faster and cheaper registry of properties. Government plans to introduce a Fair Credit Reporting Act and an online credit collateral registry will be critical to enhancing access to credit for small businesses. The GoB will also continue its efforts to enhance trade, including through the implementation of a customs reform.

36. **As Barbados slowly recovers from the lingering effects of the pandemic, risks to growth remain high as the protracted war in the Ukraine is raising uncertainty about future global economic prospects.** This is especially true for Barbados which remains a net fuel and food importer. The tourism sector accounts for 17 percent of GDP directly, and indirectly for upwards of 40 percent. The key tourism source markets are the United Kingdom (with a market share of approximately 33 percent), the US (30 percent) and Canada (13 percent). A deteriorating global outlook, new waves of COVID-19 variants, and a further US dollar appreciation could slow the tourism recovery. A prolongation of the war in Ukraine could lead to a slower than expected decline in inflation.

37. **Barbados' macroeconomic policy framework is deemed adequate.** Over the last three years, authorities have enhanced the consistency of macroeconomic policies and improved debt sustainability and transparency through implementation of the BERT Plan. These efforts remained on track despite multiple shocks. Successful debt restructuring increased the country's fiscal space and continued fiscal consolidation will help to ensure the stability of the pegged exchange rate. Structural reforms will support economic growth and increase foreign direct investment. Remaining key risks are related to the possibility of a prolonged impact of the COVID-19 crisis on the tourism sector and the possibility of slow recovery. The proposed operation will help mitigate some of these risks and, along with financing provided by other IFIs, will support the Government's efforts to implement an ambitious reform agenda.

2.3 IMF RELATIONS

38. **Barbados has recently completed a four-year program with the IMF and negotiated a new one on December 7, 2022, which includes a significant Resilience and Sustainability Facility (RSF) component.** The seventh and final review under the EFF was completed in June 2022. Total disbursements under the program amounted to SDR 322 million (equivalent to US$435 million). Performance of the program, which supported implementation of the BERT plan, aimed at restoring fiscal and debt sustainability and increasing reserves and growth, was assessed by the IMF Board as strong despite significant economic shocks associated with the COVID-19 pandemic, natural disasters, and the war in Ukraine.

39. **A new EFF/RSF program was approved by the Board on December 7, 2022.** The combined RSF and EFF program aims to strike a balance between enhancing resilience to climate change while also focusing on Barbados' continued efforts to reduce public debt and facilitate capital expenditure to boost growth. The EFF component will help the country to maintain and strengthen macroeconomic stability in a more shock-prone environment by enhancing fiscal sustainability, continuing, and broadening the implementation of the structural reform agenda including domestic revenue mobilization, public sector and SOEs reforms, and improvements in monetary policies and business environment. Reforms under the RSF include the mainstreaming of climate change in the budget and enhancement of risk management, including for the financial sector; the introduction of "green Public Financial Management"; and adoption of measures that would incentivize private sector investments in climate resilient infrastructure and into renewable energy projects; the latter two which dove tail closely with this operation. The World Bank and the IMF teams worked closely to coordinate preparation of the proposed operation and the RSF/EFF program.

3. GOVERNMENT PROGRAM

40. **The overarching objective of the NSP of Barbados, 2005–2025, is to realize, by 2025, the country's goal of becoming a society that is prosperous, socially just, and globally competitive.** The Ministry of Finance and Economic Affairs is responsible for implementing and monitoring the NSP, which is comprised of the following stated goals:

- To create a culture of equity and social justice, while building an inclusive society with opportunities for all;
- To improve governance and realize a constitution free of all vestiges of colonialism; a modernized parliamentary and electoral system; enhanced political participation; and empowerment of all communities;
- To revolutionize education in order to unlock the productive potential of all Barbadians; ensure a well-developed public health system; and support the eradication of poverty;
- To support sustainable social and economic development ensuring adequate water and energy supplies; a good transport system; and protection of the environment; and
- To develop the economy with greater diversity and competitiveness, focusing on services such as tourism and international business.

41. **Complementing the NSP, with endorsement of the Barbados National Energy Policy 2019-2030 (BNEP), the GoB has adopted a bold strategy and ambitious targets building on its prior commitments to the Paris Agreement.** The 2030 Vision outlined in the BNEP includes the following core objectives: (i) 100 percent of Barbados electricity produced from Renewable Energy (RE) by 2030 (target was 65 percent at the UNFCCC COP15); (ii) elimination of the use of diesel and gasoline for local transport over the next decade[15]; and (iii) development of an energy sector that offers reliable and affordable energy products and services, enabling local entrepreneurship and international investment in Barbados' energy sector.

42. **In addition, Government's priority areas and policies to strengthen climate change adaptation, involve the following:** The *2021 Physical Development Plan* (PDP) sets out policies and strategies to guide land use, settlement patterns, infrastructure and environmental management that seek to enhance resilience under changing climate conditions. The *2021 Roofs to Reefs Programme* (R2RP) operationalizes the PDP and directs public investment, including by making low- and middle-income homes more resilient to extreme weather events; increasing freshwater storage capacity and water use efficiency; making critical utility, water and sanitation and road infrastructure climate resilient; and restoring vulnerable coral reef ecosystems. In addition, Barbados has adopted or is in the process of adopting several sector policies and regulations that involve climate change adaptation considerations, including the Water Reuse Policy, Integrated Coastal Zone Management Plan,

[15] Barbados has currently approx. 300 electric vehicles in circulation, on over 100,000 vehicles in the island (source: BNEP 2019).

Comprehensive Disaster Risk Management Policy and Climate Change and Agriculture Policy, among others, several of which have been curated for inclusion in this operation. Barbados is also operating a Catastrophe Fund designed to provide financial aid to eligible stakeholders in need as a result of climate-induced natural disasters. The GoB has also taken steps to enhance the resilience of the insurance industry by requiring all domestic insurers to run annual natural disaster stress tests.

43. **Furthermore, government policies and commitments with respect to improving climate mitigation are as follows:** The GoB is making important strides toward a sustainable and low carbon transformation of its economic and social systems. In its updated NDC, Barbados has committed to 20 percent reduction relative to business-as-usual emissions in 2025 without international support (unconditional) and 35 percent reduction relative to the business-as-usual emissions in 2025 conditional upon international support. By 2030, Barbados has also committed to a 35 percent reduction relative to business-as-usual emissions without international support (unconditional) and up to 70 percent reduction relative to business-as-usual emissions in 2030 conditional upon international support. Barbados' updated conditional mitigation contribution for 2030 consist of: (i) 95 percent share of renewable energy in the electricity mix; (ii) 100 percent electric or alternatively fueled vehicles in the passenger fleet; (iii) 20 percent increase in energy efficiency across all sectors as compared to BAU; (iv) 29 percent decrease in industrial, commercial, and residential fuel consumption as compared to BAU; and (v) 20 percent decrease in waste emissions. With the 2019 BNEP, the GoB has signaled its clear commitment to a clean energy future by setting the target of a fossil fuel-free electricity sector by 2030. However, significant additional investments are needed for the BNEP goal of 100 percent renewable energy to be attained by 2030. To this end, a draft Integrated Resource and Resilience Plan (IRRP) to guide implementation of the BNEP in the electricity sector is currently undergoing extensive consultations. Government is also committed to a fossil fuel-free transport sector. Effective April 2021, the Government's procurement policy was set to prioritize the purchase of electric or hybrid vehicles, where possible. Lastly, the GoB is ensuring that climate change mitigation and adaptation policies are aligned, as illustrated in the R2RP. Not only will actions in the R2RP result in a more resilient housing stock, through roof fortification and retrofitting aimed at withstanding Category 4 hurricanes, distributed electricity generation will shorten recovery time post-disaster. Similarly, under R2RP, protocols and standards for rooftop solar PV installation will be developed and include recommended options for energy storage technology.

4. PROPOSED OPERATION

4.1. LINK TO GOVERNMENT PROGRAM AND OPERATION DESCRIPTION

44. **Given the rapidly increasing, significant, and adverse impacts of climate change, the Government has committed to delivering an integrated package of strategic policy reforms that catalyze the transition to green and resilient economic recovery.** Barbados' low-carbon and climate resilient

development plans are detailed in its BERT Plan, NSP and NDC Update and call for dedicated and immediate finance to attend to the climate crisis deeply affecting all sectors of the economy.

45. **Two key lessons learned from implementation of the first DPL** were: (i) Even in an emergency operation, it is possible to make important strides in reforms that have medium and long-term impacts. While Barbados faced a succession of crises and had to address the immediate needs of its citizens, the WBG supported reforms tackling longer term issues that would make the country more resilient to future crises. The effort to achieve this progress was enhanced because the reforms selected for the first DPL were already in motion in government's program and the WBG was able to offer advice that sharpened the reforms and ensured better implementation; and, (ii) Measuring results in an emergency operation may necessitate using results indicators that are shorter-term in nature and rely on completed actions, but that are still closely linked to more impactful outcomes. Given the emergency nature of the first operation and the fact that it was a stand-alone DPL, it was appropriate to select results indicators that could be measured within the timeframe of the operation.

46. **This DPL is comprised of two pillars emphasizing the Government's priority of ensuring a green and resilient recovery, as follows:**

- **Pillar A: Green and Blue Resilient Recovery,** policy areas include:
    - Support Climate Resilient Water Resources Management, Water Protection Zones, and Climate Smart Agriculture
    - Advancing Marine Pollution Control for Environmental and Tourism Resilience
    - Support improved Environmental Conservation and Climate Change Management and Finance
- **Pillar B: Low Carbon and Resilient Infrastructure**, policy areas include:
    - Support Comprehensive Disaster Risk Management
    - Low Carbon Transition with Scaling-up of Renewable Energy
    - Introduction of Climate Budget Tagging for Resilient Infrastructure and Operating Systems

4.2. PRIOR ACTIONS, RESULTS AND ANALYTICAL UNDERPINNINGS

Pillar A: Green and Blue Resilient Recovery

Prior Action A1: To reduce the Borrower's water stress levels, the Borrower has submitted for parliamentary approval a law on water reuse, which incorporates key aspects of the National Water Reuse Policy, such as promotion of safe use of reclaimed, storm and non-potable water in urban, agriculture and industrial sectors.

As evidenced by: (a) Bill for the Water Reuse Act, 2022, dated February 7, 2022; and (b) Order Paper of the Honorable the House of Assembly, First Session of 2022-2027, October 28, 2022.

47. **Rationale:** Climate change impacts, including changing precipitation patterns and prolonged periods of droughts and heavy rainfall, are worsening Barbados' water stress level as it causes extreme fluctuations in high and low rainfall periods which leads to both floods and droughts. Moreover, the intensity and frequency of both extremes have increased in the last decade, and coupled with rising sea levels, are causing significant saltwater intrusion. Higher intensity storms of very short duration are causing increased runoff and reduced recharge, and higher ambient temperature is leading to greater evaporation rates. As a result, renewable freshwater availability in Barbados has declined from 344 cubic meters per person in 1962 to 279 cubic meters per person in 2018[14]. This is very low compared to the world average of 5,658 cubic meters per person and Latin America and the Caribbean regional average of 21,672 cubic meters per person. As a result, Government has resorted to the construction of desalination plants to meet the water demand. Water contamination triggered by chemical use and disposal from agriculture and industrial development exacerbate already existing water shortage problems. Improving water resources management and climate resilience of the sector is critical at this juncture, because declining water availability is adversely affecting agricultural production, and environmental pollution and degradation, caused by groundwater over-abstraction and stormwater runoff, is impacting the tourism sector upon which the country relies. While Government is adopting multiple measures to improve water resources management, financial and operational efficiency of the sector, and the economic and environmental regulatory framework, the myriad impacts of climate change are exacerbating the underlying stressors faced by the sector.

48. **Substance:** The GoB is applying multiple measures to maximize efficient use of all available water resources and make the sector climate resilient. Among these is adoption of the National Water Reuse Policy approved by Cabinet on April 18, 2019. Other efforts include amendment of the Barbados Water Authority Act incorporating the water protection and land use zoning policy of 2020 and Prevention of Floods Act incorporating the new stormwater management plan. Government's vision for the water sector is that, as a vital national resource, it will be used to improve the quality of life for its citizens, maintain the natural biodiversity of the land, and promote domestic, agricultural, and industrial activities in support of sustainable development and a climate resilient and green economy. The objective of the National Water Reuse Policy is to promote safe use of reclaimed, storm and non-potable water in urban, agriculture and industrial sectors, such that health outcomes and environmental quality are not compromised. The Prior Action under this operation is Parliamentary submission of the Water Reuse Bill which took place in February 2022.

49. **Expected Outcome:** Enactment of the Water Reuse Bill will facilitate and increase issuance of reclaimed water reuse permits to be approved by the EPD, which will enhance use of rainwater, stormwater, and treated wastewater for agricultural purposes, domestic and commercial consumption, and groundwater recharge. Water reuse also generates important climate benefits. Treating sewage allows for better sludge management, such as methane capture and energy generation, which helps mitigate GHG emissions from plant operations. Moreover, rainwater

capture and use of treated wastewater can significantly reduce the country's dependence on groundwater supplies that are negatively affected by climate change impacts, in turn, contributing to Barbados' ability and improved capacity to adapt to climate change.

Results Indicator: Number of reclaimed water reuse permits approved by the Environmental Protection Department under the Water Reuse Act. Baseline (2022): 0; Target (2023): 5 Results Indicator: Estimated flows for water reuse from at least five wastewater treatment plants. Baseline (2022): 0. Target (2023): 174,000 US gallons.

Prior Action A2: To adapt to climate change's impact on water stress, the Borrower, through the Cabinet, has approved the amendment of the Groundwater and Land Use Zoning Policy 2020 and the Water Protection Bill, Water Order 2022 to enable the creation of a new Desalination Water Protection Zone.

As evidenced by an extract from minutes of a meeting of the Cabinet held on November 3, 2022, issued by the Cabinet Secretary, dated November 11, 2022.

50. **Rationale:** In Barbados, groundwater is the main source of water, serving 86 percent of total demand, followed by desalination (14 percent). Climate change is exacerbating the island's water scarcity. Increased variability in precipitation and more extreme weather events caused by climate change led to longer periods of droughts and floods, which directly affect availability and dependency on groundwater. Effective management of groundwater offers a number of opportunities, such as enhanced storage for improved water security, and adaptation to the impacts of climate change. The ability of groundwater resources to buffer short-term changes and shocks can also help mitigate the impacts of climate-induced natural disasters and emergencies, such as droughts and floods, when surface water supply systems are directly affected. Barbados is therefore in urgent need of improved regulation of groundwater that will address the identified climate change risks and protect the country's marine-based ecosystems from land-based sources of pollution such as surface run-off and ground water discharge into the sea. The country's new Groundwater Protection and Land Use Zoning Policy 2020 aims to protect all of the island's water resources, including coastal waters. In addition, the policy will address both agriculture and sewage, which are the main sources of nitrate pollution, and promote creation of an appropriate regulatory and legislative structure, as well as strengthened sectoral capacity to protect the country's water resources in the context of climate-related water stress. In this context, the role of the BWA is enhanced through the legislative amendments to include, among other responsibilities, management and protection of groundwater resources in the public interest. One key element is the creation of a new Desalination Water Protection Zone for the location of existing and future desalination plants because the existing water protection policy of 1963 does not include the conditions and criteria for the regulation of such desalination water protection zone.

51. **Substance:** In order to manage its scarce water resources which is worsening due to climate change impacts, the Cabinet approved the Green Paper on 2020 Groundwater Protection and Land Use Zoning Policy in 2020 and the proposed amendment to the BWA Act was submitted to the

parliament in February 2022. This reform is designed to address the climate resilience of groundwater resources and it is intended to serve as a planning tool that will ensure the necessary steps to improve adaptive capacity of a groundwater system as climate conditions continue to change. In addition, a Cabinet Decision was made on November 3, 2022, to create a New Water Protection Zone which will have specific regulations and practices that are designed to reduce the load of specific substances that can damage the membranes[16] used in the desalination processes. The regulatory approach for implementing the management and control practices will require the amendment to the Marine Pollution Control (Discharge) Regulations, which fall under the Marine Pollution Control Ac, CAP 392A. The new policy also mandates the preparation of environmental management plans for each industrial facility and the mandatory reporting by the facilities in the way of environmental audits. Particular attention should be paid to the storage of hazardous materials and substances that can affect the desalination membranes, the drainage design, and the spill management processes and procedures. Environmental management plans prepared for the facilities will minimize the exposure and enhance the assets' resilience to climate impacts. The paper noted that the amendment will be made to the Groundwater and Land Use Zoning Policy 2020 and the attendant Water Protection Bill, Water Order 2022 which includes the amendment to BWA Act. Once the amendments to the Acts are completed, the new water protection order and zoning system will be incorporated into the physical development plan by the planning and development department. A communication plan is being developed by BWA and EPD to ensure smooth implementation of these policies.

52. **Expected Outcome:** The creation of a Desalination Water Protection Zone, as an amendment to the Groundwater and Land Use Zoning Policy 2020, Water Protection Bill, Water Order 2022, BWA Act are likely to generate, among others, the following benefits; (i) stricter control of chemical usage and disposal (including agrochemicals) which reduces pollution; (ii) reduction in methane that produces greenhouse gases, through expansion of sewerage connections to the communities around the Belle public supply well (which supplies almost one-third of the island's drinking water); and, (iii) establishment of requirements for developers to protect ground water and coastal waters whether by sewage treatment, wetlands, or other acceptable means. An improved policy, institutional, and regulatory environment to manage the country's valuable water resources and the use of desalination will lead to climate change adaptation which include better conservation of groundwater and enhanced protection of marine ecosystems from land-based sources of pollution.

Results Indicator: Amendment to the Water Protection Bill and Water Order 2022.
Baseline: NA (2022). Target: Amendment to the Bill completed (2023)

Result Indicator: New Water Protection Zoning System is adopted. Baseline: NA (2022). Target: Water protection zoning system is incorporated into the physical development plan (2023)

Prior Action A3: To further scale-up financing options for improved environmental management and climate action, the Borrower, has established the Barbados Environmental Sustainability Fund.

[16] The type of membranes include cellulose and non-cellulose membranes, polyamides, polyurea, sulfonated polysulfone, sulfonated polyfuran, polypiperazides, polyvinyl alcohol derivatives, and other composites. The list of pollutants that impact membranes should be included in the table of prohibited concentrations with specific limits to protect the marine environment, groundwater, and the membrane with the associated annual loads limits for facilities.

As evidenced by: (a) an extract from the minutes of a meeting of the Cabinet held on June 3, 2021, issued by the Cabinet Secretary, dated June 10, 2021; (b) By-law of the Barbados Environmental Sustainability Fund, enacted on July 28, 2022; and (c) Articles of Incorporation (Form 2) duly completed and with a seal from the Corporate Affairs and Intellectual Property Office confirming registration, dated May 6, 2022.

53. **Rationale:** Barbados possesses rich natural capital, including marine, coastal, and terrestrial ecosystems and a wealth of environmental assets, such as coral reefs, mangroves, beaches, and forests. These natural assets are vital for economic growth since the tourism sector - the main driver of Barbados' economy – depends heavily on the services provided by this natural resource base. However, the integrity of these assets is increasingly at risk, seriously jeopardizing the long-term well-being and sustainable development of the country. Climate change is posing an additional and significant risk to the already deteriorated natural capital through observed and anticipated impacts, in terms of increasing ambient and sea surface temperatures, sea level rise and increased frequency and intensity of climate change-induced natural disasters. At the same time, Barbados is faced with significant fiscal constraints, arising in part from extreme weather events and slow onset events impacting national income flows, as well as from increasing indebtedness and slower economic growth -– all of which have a negative impact in terms of availability of funding for environmental and climate change programs. This situation, coupled with COVID-19 related impacts on the fiscal space, further exacerbate the already challenging situation of financing activities and projects that address environmental degradation and the myriad impacts of climate change. Lastly, current efforts at implementing activities and projects often remain fragmented across various sectors, which in turn presents an obstacle for securing significant sources of finance for conservation, climate change and sustainable development and for achieving impact at scale.

54. **Substance:** Against this backdrop, Barbados is assessing viable options to ensure a reliable, long-term flow of financial resources to support critical environmental and climate-related sustainable development outcomes central to the development agenda of the GoB, including through creation of the Barbados Environmental Sustainability Fund (BESF). The aim of the BESF is to serve as an effective means for introducing a more coherent mechanism for mobilizing and channeling significant financing for biodiversity conservation from the GoB, international donors (development financing institutions, non-governmental institutions, philanthropy, global funds), as well as from the institutional investors and the private sector who are increasingly looking for investment opportunities in conservation and climate change, as more companies establish climate targets, determine supply chain goals and look for more specific nature-based and climate-informed interventions to engage in.[17] To facilitate this effort, the BESF was established as an independent grant-making institution to provide sustainable financing for biodiversity conservation and climate change mitigation and adaptation actions which will offer grants to non-profit organizations, community-based organizations, government agencies and the private sector to finance projects in

[17] Considering the different types of potential contributors to the BESF, its sources are expected to include revenues generated by sustainable finance mechanisms, income generated from endowment funds, public and private donations from national and international sources, budgetary allocations from the Government of Barbados, etc.

biodiversity conservation, disaster risk management, climate change adaptation and mitigation, and green and blue economy initiatives, among others. The BESF was approved by Cabinet in June 2021, following which, and as part of its operationalization, its Board approved bylaws to regulate its operations on September 29, 2022.[18] The Board is currently refining the set of criteria that will be used for selecting future investments. The criteria will be focused on supporting efforts in those areas that provide multiple benefits and generate social returns in the spirit of global public goods (e.g., improving livelihoods, enhancing the integrity of the country's natural capital, and tackling the most pressing impacts of climate change). In addition, its monitoring and evaluation framework, which is currently being developed, will ensure that the grants design is solid, their impact is maximized, and that environmental and social risks are avoided, minimized, and, where residual impacts remain, offset, or compensated using robust criteria and assessments during the preparation and implementation.

55. **Expected Impacts:** The BESF is designed to directly reduce Barbados' vulnerability to climate change and other related environmental pressures. On the financial side, the BESF is expected to serve as a long-term source of finance for conservation and climate change, an effective mechanism for leveraging additional resources from external and in-country sources, and a cost-effective instrument for managing funds. By channeling government and investor funding, the BESF is expected to supplement government financing, and help fill major funding gaps to respond at scale to the country's environmental, climate change and sustainable development challenges. [19] In terms of expected environmental and climate change benefits, the BESF is expected to finance national environmental and climate change priorities in a coordinated manner, while strengthening the capacity of local environmental organizations regarding projects' development and implementation. The BESF will serve as a vehicle to implement Barbados' NDC which calls for new, scaled-up and predictable financial resources, including for country-driven adaptation measures and increased support for green recovery packages. Lastly, by creating a new financing mechanism and ensuring establishment of a robust governance structure that includes the Ministry of Maritime Affairs and the Blue Economy (MMABE), University of the West Indies-Centre for Resource Management and Environmental Studies (UWI-CERMES) (Non-government), and The Nature Conservancy (TNC) (Non-government), the BESF is expected to be a critical coordination mechanism for financing environmental and climate change initiatives in Barbados which would be in line with the GoB's priorities.

Results indicator: Amount of funds mobilized from the GoB to the Barbados Environmental Sustainability Fund. Baseline: US$0 (2022). Target: US$2.5 million (2023)

[18] The Founder Members of BESF are The Nature Conservancy, The Government of Barbados (represented by the Ministry of Maritime Affairs and the Blue Economy), and The University of the West Indies: Centre for Resource Management and Environmental Studies. The Non-Government Members of the Company are as follows: the Barbados National Union of Fisherfolk Organization, the Barbados National Trust, the Barbados Chamber of Commerce & Industry, the Caribbean Youth Environment Network, and Any other person admitted to membership under By-Law Article 5.2.4 to replace any of the foregoing Non-Government Members.

[19] During the process of the BESF establishment, preliminary discussions were held with prospective donors. While the funds mobilization is expected to take place following the full operationalization of the BESF, an indication of positive response can be demonstrated by the first investment made which was utilized to support the BESF establishment.

Prior Action A4: To increase climate resilience while tackling marine pollution from land sources, the Borrower, through the Cabinet, has approved a Marine Pollution Control (Discharge) Regulation.

As evidenced by: (a) Bill for the Marine Pollution Control (Discharge) Regulations, 2022, dated September 29, 2022; and (b) an extract from minutes of a meeting of the Cabinet held on September 29, 2022, issued by the Cabinet Secretary, dated October 7, 2022.

56. **Rationale:** Marine pollution and climate change significantly impact the integrity and stability of ocean life and communities whose livelihoods depend on the health of marine and coastal biodiversity.[20] Increased climate impacts, through increases in temperature and ocean acidification, are exacerbating the integrity of marine resources and leading to loss of marine habitats and species. At the same time, increased marine pollution reduces marine ecosystem resilience (e.g., coral reefs), in turn, increasing the vulnerability of such ecosystems to climate change[21]. As is the case with neighboring SIDS, marine pollution in Barbados is mainly borne from mismanaged terrestrial sources and represents a critical threat to the health of marine species and coastal ecosystems.[22,23]. As such, regulating and reducing terrestrial pollution and discharge is essential to strengthening the resilience of the country's coastal and marine ecosystems and combating the effects of climate change on those ecosystems. To prevent, reduce and control marine pollution, in 1998, the country issued the *Marine Pollution Control Act* (MPCA CAP. 392A) that incorporates principles from the United Nations Convention of the Law of the Seas (UNCLOS). More recently, the GoB has further strengthened the country's resilience by investing heavily in climate adaptation measures and addressing its main marine pollution challenges (as also stipulated in the Barbados NDC Update). Pollution abatement is also addressed through the country's *Roofs to Reefs Program (R2RP)*, which aims to decrease land-based sources of marine pollution by promoting sustainable land use practices. Barbados also ratified the Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (WCR), known as the *Cartagena Convention*, in 1985, but acceded to the Protocol Concerning *Pollution from Land-Based Sources and Activities* (LBS) in 2019[24]. The Land-based Sources (LBS) protocol sets effluent limits for domestic wastewater and requires development of plans to address agricultural non-point sources of pollution. Overall, Barbados has been a leader in the Caribbean blue agenda, protecting its rich marine biodiversity[25], while at the same time combating climate change and is often hailed as a champion of the Commonwealth *Blue Charter*. Despite these strong efforts, providing greater pollution control and abatement by updating the 1998 Marine Pollution Control Act (MPCA) framework is required to bring conformity with new legislation concerning pollution, particularly the LBS protocols of the Cartagena Convention, and to address the growing concerns with the impacts of climate change.

[20] See https://www.iucn.org/our-work/oceans-and-coasts
[21] Veron et al. 2009
[22] *Fiertz, Yozell, et al. (2022) Climate Risk Summary Report.* Southern and Western Urban Corridor, Barbados
[23] *Irvine, Richard Suckoo & Hazel A.Oxenford (2020). Barbados coral reef report*
[24] See https://www.unep.org/cep/who-we-are/cartagena-convention
[25] Barbados is house of fifty hard corals and almost six hundred fish species recorded. https://biodiversity.gov.bb/biodiversity/

57. **Substance:** Barbados has been significantly impacted by extreme climate events such as hurricanes, marine heat waves, and sea level rise[26]. Moreover, increased terrestrial pollution leakage into coastal environments and rising ambient and sea surface temperatures are degrading the health and structure of its valuable coastal and marine environments,[27] (i.e., by smothering coral reefs structures and speeding growth of damaging algae) in turn, reducing resilience of the country's marine ecosystems. To reverse this trend and attend to the climate emergency and reduce marine pollution while at the same time increasing the climate resilience of its marine resources, the GoB (i) issued the Marine Pollution Control (Amendment) Bill, 2022 to modify the 1998 MPCA to bring conformity with new protocols concerning pollution and (ii) issued regulations that elaborate on the Amendment Act and incorporate the latest regulatory developments. The new Act Amendment seeks to increase control and reduce pollution by (i) creating a Register of Sources Categories (such as domestic sewage, sugar factories and distilleries) and collecting information that identifies each source in terms of quantity, conditions, and concentrations; and (ii) listing Source Categories[28]; and (iii) increasing penalties imposed for those who contravene the Act regulation. The Marine Pollution Control Regulations (the Regulations) elaborates on the Act and sets out the reporting requirements, monitoring, notice, sampling, analysis methodology, penalties and includes provisions for establishing Compliance Agreements. The new Regulations also establish the obligation to dischargers of predefined sources (i.e., domestic wastewater) to register with the EPD; places limits on pollutants in accordance with the Cartagena Convention; and sets ambient quality standards. Such limitations are particularly relevant since they allow the EPD to exercise enforcement by bringing these standards into national law along with establishing ambient standards for a wide range of pollutants that impact marine biodiversity.

58. **Expected results**: The recently approved reform is expected to prevent and control point source marine pollution, in turn decreasing Barbados' marine and coastal ecosystem vulnerability to the effects of climate change. Decreased marine pollution is expected to improve the country's resilience and adaptation to future climate events and promote biodiversity conservation. Currently, Barbados has three main companies operating within the Source Categories identified under Section 4(11) of the Marine Pollution Control Act. Those companies, which fall under the domestic sewage (water treatment plants), sugar, and distilleries' Source Categories, are directly discharging to the marine environment. According to the GoB, one company's discharge (the water treatment plants) is solely responsible for 8 percent of domestic and commercial sewage generated on the island.[29] Collecting and registering information from these companies will greatly contribute to pollution reduction. Reducing such discharge, which contain nutrients, antimicrobial-resistant organisms, and a variety of pharmaceutical residuals, is expected to reduce eutrophication in zones

[26] See Barbados NDC. https://unfccc.int/sites/default/files/NDC/2022-06/2021percent20Barbadospercent20NDCpercent20updatepercent20-percent2021percent20Julypercent202021.pdf

[27] Rising sea temperatures coupled with increasing solid and chemical waste pollution from the land continue to plague the water quality and over 70percent of the island's coral reefs have suffered significantly from coral bleaching. Barbados Environment https://barbadosenvironment.org/areas-of-interest/marine-conservation/

[28] According to the proposed regulation Section 4(11) of the Marine Pollution Control (Amendment) Act, Cap. 392, there are a total of nine categories: domestic sewage, agricultural non-point sources, chemical industries, extractive industries, food processing, liquor, oil refineries, sugar and distilleries, and intensive animal operations.

[29] The Bridgetown and south Coast Sewage treatment plants combine to collect and treat 8percent of the domestic and commercial sewage generated on the island.

around the marine outfall and decrease bleaching. Lastly, registering direct discharge by completing the Discharger Form from such companies will allow the EPD to put in place a formal agreement that aims to minimize pollution progressively over a certain period of time as well as collect more detailed information on discharge levels.

Results Indicator: Companies within the source category identified in Section 4(11) of the Marine Pollution Control (Amendment) Act, Cap. 392 with direct discharges to the marine environment, complete the Discharger Form by December 2023 and Register with the Environmental Protection Department. Baseline (2022): 0. Target (2023): 3.

Prior Action A5: To increase climate resilience of the agriculture sector by operationalizing the agriculture information management system, the Borrower, through the Cabinet, has approved a Climate Change and Agriculture Policy.

As evidenced by: (a) Agriculture and Climate Change Policy, issued by the Ministry of Agriculture, Food and Nutritional Security; and (b) an extract from minutes of a meeting of the Cabinet held on September 29, 2022, issued by the Cabinet Secretary, dated October 7, 2022.

59. **Rationale:** Although agriculture represents only 1.5 percent of GDP, it has a significant impact on the country's natural resource base and is highly vulnerable to climate change. Agriculture utilizes 23 percent of the country's land area and is a major user of the country's scarce freshwater resources. Half of all agricultural land is equipped with irrigation infrastructure, and competition for freshwater resources continues to be a challenge along with the potential for increased saline intrusion. The sector is highly vulnerable to climate change and experiences substantial losses during droughts and other natural disasters; the most recent being Hurricane Elsa and the La Soufriere volcanic ashfall in 2021. Climate change is expected to lead to increased temperatures and frequency of drought events, which will reduce yields and increase pest and disease pressures on the agriculture sector.

60. Women and men active in the agriculture sector experience vastly different impacts given the accelerated pace of climate change. These impacts exacerbate existing inequities in gender roles, responsibilities, access to assets and key services in the sector (e.g., extension, information, financial) that grossly disadvantage women. Currently, women are estimated to comprise 18 percent of the agricultural labor force (FAOSTAT) and 6percent of all agricultural land in Barbados is women owned. Women's domestic work and care burden reduces their capacity and resilience which reduces their ability and uptake of response options that require labor input, and can affect yield, food security and nutritional outcomes. Gendered livelihood activities along the food value chains are also differently exposed to shocks and require different responses as it affects food supply, safety, and ability to purchase high quality diets.

61. Recognizing the sector's vulnerability to climate shocks, Barbados has scaled up efforts to promote climate smart agriculture practices and identified use of improved technologies as a high priority. The Ministry of Agriculture is actively engaged in promoting high efficiency irrigation, improved water management practices and drought resilient farming practices (e.g., mulching, use of drought

resistant varieties). The Ministry of Agriculture is targeting modest growth in the livestock subsector and has developed measures to adopt low emission practices. A key challenge facing the sector, however, has been poor data and information systems and an inability to provide adequate services and risk mitigation options to producers. As a result, producers have a reduced capacity to adapt and re-orient investments to more resilient options.

62. **Substance:** As part of the revision of the 2013 Agricultural Policy, the new Climate Change and Agriculture Policy, approved on September 29, 2022, has a dedicated focus on climate resilience and adaptation. The Policy is based on Climate Smart Agriculture principles, which are oriented around three inter-related elements: (i) increasing agricultural productivity to produce more and better food to improve nutrition security and boost incomes; (ii) enhancing resilience by reducing vulnerability to drought, pests, diseases and other climate-related risks and shocks and improving the capacity to adapt and grow in the face of longer-term stresses like shortened seasons and erratic weather patterns; and, (iii) reducing emissions by pursuing lower emissions for each calorie or kilo of food produced, avoiding deforestation from agriculture and identifying ways to absorb carbon out of the atmosphere. The new policy lays out a climate adaptation agenda for the sector focused on promoting resilient technologies and practices and strengthening systems for collection, monitoring, and communication of agriculture data; critical to guide producer decision making and generate the detailed data needed to develop more robust agricultural insurance instruments, including collection of gender-disaggregated data, which is important to inform further policy design. Currently, gender disaggregated data is only partially available, and therefore cannot be used to develop more effective and sustainable interventions addressing gender issues in the context of wider societal and environmental change in the agriculture sector. The new policy will expand the scope and frequency of agriculture-related data collection and analysis through improvements to the agro-meteorology network, deployment of remote sensing technology, and adoption of digital tools to facilitate improved access to data by users**.**

63. **Expected Results**: In the near term, the approved policy will strengthen the system for collection, monitoring, and communication of agriculture sector-related data crucial to climate adaptation. The proposed results indicator for this Prior Action measures an early outcome of the policy, which will improve delivery of data and information services to producers. The new policy will also guide financing allocations under the BADMC-administered Agriculture Development Fund, which provides rebates and incentive payments to agricultural producers for technology adoption and over the longer term, the policy is expected to result in improved resilience and productivity of farms and agri-businesses and an increase in the intensity of technology adoption using climate smart and climate resilient practices. Increased availability of gender and age disaggregated data is expected to support the development of interventions such as improving the adoption of climate-smart technologies and climate resilient practices to yield more revenue. Increased resilience in the sector is also expected to contribute to the country's broader goal of maintaining domestic food production levels and ongoing low-carbon and resilient transformation of the sector.

Results Indicator: Operationalization of the agriculture information management system as measured by: a) Percentage of agricultural land that is mapped in line with the parameters identified in the Climate Change and Agriculture Policy by end 2023. Baseline: 0 (2022). Target: 60 (2022).

b) Gender disaggregated data is used to improve planning and decision-making: Conduct a gender analysis of the mapped farms and use it to develop a gender-sensitive action plan for assisting farms in upgrading to digital agriculture technologies. Baseline: NA (2022). Target: Preparation and adoption by Ministry of Agriculture (2023).

Pillar B: Low Carbon and Resilient Infrastructure

Prior Action B1: To strengthen the Borrower's resilience and business continuity after climate change-induced natural disasters, the Borrower, through the Cabinet, has approved a National Comprehensive Disaster Management Policy.

As evidenced by: (a) the Comprehensive Disaster Management Policy for Barbados; and (b) an extract from minutes of a meeting of the Cabinet held on September 29, 2022, issued by the Cabinet Secretary, dated October 7, 2022.

64. **Rationale:** Barbados is a SIDS with high exposure to hydrometeorological and geophysical hazards, such as hurricanes, floods, droughts, and tsunamis. Barbados' vulnerability is exclusively driven by observed and anticipated climate change impacts. Due to its low terrain, coupled with poor drainage and lack of adequate storm water infrastructure, Barbados is susceptible to flooding. Torrential rainfall often causes flooding in areas along the west and south coast of the country where approximately 25 percent of the population reside. Storm surges lead to flooding in low-lying areas, causing damage to coastal infrastructure crucial to the tourism sector and beach erosion, which can have a significant impact on the economy, especially the tourism sector. Landslides caused by heavy rainfall are also common in the northeast portion of the country. Key infrastructure, particularly for the tourism sector, is located close to sea level around the coast which is prone to flooding. As a result, coastal inundation from storm surge, storm and tsunamis poses the greatest risk to the structural integrity of tourism infrastructure as well as local housing infrastructure. Women, who form most of the tourism workforce, are therefore vulnerable to effects of such climate-induced natural disasters. The Government has made significant progress in building fiscal resilience, but there remains a lack of communication and coordination across ministries to prepare for and respond strategically and cost-effectively to climate-induced natural disasters. Currently, key ministries and agencies involved in DRM actions do not have operations continuity plans nor do they have plans consistent with the new DRM legislation.

65. **Substance:** This prior action supports approval and implementation of a comprehensive and modern Disaster Risk Management Policy, with the primary objective to address climate change risks and to anchor climate resilience in Barbados and consolidate existing DRM-related efforts. The recently approved National Comprehensive Disaster Management (NCDM) Policy follows the regionally endorsed Comprehensive Disaster Management approach from the Caribbean Disaster Emergency Management Agency (CDEMA), which uses hazard risk information for decision-making on physical and financial planning for disasters. It also authorizes the Department of Emergency Management (DEM) to organize DRM activities. The new NCDM policy includes features from the

recently updated Public Financial Management (PFM) legislative framework to contain fiscal disruptions associated with climate-induced disasters. Relevant features of the recently approved policy include a focus on governance, disaster mitigation, operational readiness, mainstreaming climate resilience, ensuring communities are central to the disaster management strategy, building the knowledge base and organizing for recovery. This policy will help modernize Barbados' legal and institutional framework to reduce vulnerability to climate-induced hydrometeorological hazards and reduce increased exposure to the impacts of climate change. By taking a holistic approach, the policy will be aligned with a more complex risk management environment, including seismic risks and, more recently, the disruptive potential of global pandemics and conflicts.

66. **Expected Impacts:** Noting that Barbados' vulnerability primarily stems from climate change risks, active streamlining of the strengthened DRM principles into all sectors, community readiness and an improved knowledge base will support Barbados' resilience to climate change and natural hazards, minimizing disruptions and enhancing protection of the most vulnerable citizens and coastal infrastructure. The Government is expected to strengthen protocols and government-wide cooperation on climate resilience and DRM interventions. These efforts will be reflected in the increased percentage of ministries and agencies that have an Operations Continuity Plan, in accordance with the new DRM Policy and regulations.

Results Indicator: Standards and template established for ministry and agency level disaster management plans. Baseline (2022): NA. Target (2023): Standards and Templates prepared.

Results Indicator: Percentage of national emergency management offices and organizations that have a completed an institutional review of their technical, financial, and administrative capacities. Baseline (2022): 0. Target (2023): 10.

Prior Action B2: To scale-up private sector-financed renewable energy, the Borrower, through the Cabinet, has approved an Electricity Supply Bill which aims to: (i) enhance competition in the electricity market; and (ii) enable local companies' participation in renewable energy investment.

As evidenced by: (a) Draft Bill of the Electricity Supply Act, 2022; and (b) an extract from minutes of a meeting of the Cabinet held on November 10, 2022, issued by the Cabinet Secretary, dated November 18, 2022.

67. **Rationale:** Barbados has been an early adopter of clean and renewable energy (RE) technologies, with development of locally produced solar water heaters in the 1990s' and strong policies that equipped a quarter of the island's households over a ten-year period. But the scale-up of RE in Barbados has suffered from systemic hurdles similar to most SIDS. That is, the limited capacity to attract adequate investment for capital-intensive RE infrastructure, an inadequate policy framework to align the needs within the international context and the difficulty to transition from a fossil fuels centric energy sector without hampering economic development in the short and medium term. However, with acceleration of climate-related disasters (both in number and severity) and Government commitments to decarbonize the economy, updating the policy framework has become a high priority for the administration.

68. **Substance:** The GoB is firmly committed to becoming a carbon neutral island by 2030, moving away from its heavy dependence on imported fuel oil. Formal endorsement of the BNEP in 2019 has been a concrete step in this direction, as the plan contains a bold strategy and even more ambitious targets than those committed to with the Paris Agreement. The 2030 Vision embedded in the BNEP includes several critical objectives, namely: (i) 100 percent of Barbados' electricity produced from RE by 2030 (target was 65 percent at COP15); (ii) elimination of the use of diesel and gasoline for local transport over the next decade[30]; and (iii) development of an energy sector that offers reliable and affordable energy products and services, by enabling local entrepreneurship and international investments in the sector. To realize the vision outlined in BNEP and implement a strategy that is well aligned with the country's 2021 NDC Update (2021), the GoB is preparing a set of targeted policies that support the transition to use of cleaner energy and contribute to the country's green and resilient economic recovery. The Electricity Supply Bill is an essential pillar of this enabling regulatory framework.

69. **Expected Outcome:** The New Electricity Supply Act will bring substantial changes to Barbados' electricity sector, including: (i) clarification of the sector's institutional framework to streamline processes and oversight of RE development; (ii) enabling environment for the development of RE generation capacity and adequately sequenced phase down of the thermal power generation; and, (iii) opening for further instruments and policies to incentivize financing of clean energy projects, with a specific emphasis on locally financed projects. Direct measurement of these outcomes will be the number of applications registered and licenses granted for new RE projects between 1 and 10 MW, and overall capacity under development from these projects in the next twelve months.

Results Indicator: Renewable Energy capacity under development or operation (in MW)
Baseline (2022): 30. Target (2023): 60.

Prior Action B3: To identify and manage expenditures and activities to improve socio-economic and infrastructure resilience to climate change, the Borrower, through the Ministry of Finance, Economic Affairs and Investment, has issued a budget circular instructing its ministries, departments, and agencies to develop and adopt a robust climate and disaster budget tagging methodology.

As evidenced by Circular No. 3/2022, M.P. 5001 Vol. 81, issued by the Ministry of Finance, Economic Affairs and Investment, dated October 25, 2022.

70. **Rationale:** To enhance Barbados' climate change resilience, the GoB wants to have comprehensive information on the nature, quantity, and quality of public expenditures related to climate change mitigation and adaptation. By developing, adopting, and implementing a methodology for tagging climate-relevant expenditures, the Government will be able to identify and better manage these expenditures and activities to improve its resilience to climate change and disasters. It will also aid the Government to better understand to what extent public resources are aligned with the Barbados National Energy Policy 2019-2030 and related climate change mitigation and adaptation

[30] Barbados has currently approximately 300 electric vehicles in circulation, on over 100,000 vehicles in the island (source: BNEP 2019).

targets. Information on climate-related spending can also help the Government in its efforts to mobilize additional, domestic, and international, resources for climate change activities. Following the recent hurricanes and considering observed and anticipated climate change risks, the reform also intends to support efforts to integrate climate change resilience into budget and policy decision-making.

71. **Substance:** The PA entails the development and adoption of the GoB's climate-related budget tagging methodology. This would allow for a central-level budgeting and expenditure analysis by introducing a climate change tagging system in Barbados. The Ministry of Finance is leading this reform and is coordinating with the Ministry of Environment, which supports implementation efforts and provides feedback and guidance. The methodology integrates recent updates to Barbados' national climate change-related policies, budgeting system, chart of accounts, financial management information systems, and budget documents, as well as global experience with climate tagging methodologies. It specifies coverage and weighting mechanisms, defines institutional arrangements, and outlines the integration of climate tagging into budgeting, reporting, validation, and evaluation mechanisms.

72. **Expected Outcome:** The PA on climate tagging will contribute to Barbados' mainstreaming of the monitoring, planning, and budgeting of climate-related public expenditure and is expected to improve its ability to prioritize climate-smart and resilient hard and soft investments towards national objectives and international commitments. Following this initial reform, the country is expected to further establish and institutionalize the tagging system across ministries, including identifying recommendations for any potential changes required in the budget process and the financial management system. This will in turn help raise awareness of and showcases efforts to tackle climate change and foster better cooperation between government ministries. Lastly, the GoB is also expected to be able to improve its access to and mobilization of domestic and international climate finance by enabling the tracking of the allocation of resources while enhancing transparency and demonstrating its commitment to climate action. L

Results Indicator: Percentage of budget programs tagged for climate change. Baseline: 0 (2022). Target: 25 (2023).

DPF Prior Actions and Analytical Underpinnings

Prior Actions	Analytical Underpinnings
Pillar A: Green and Blue Resilient Recovery	
To reduce the Borrower's water stress levels, the Borrower has submitted for parliamentary approval a law on water reuse, which incorporates key aspects of the National Water Reuse Policy, such as promotion of safe use of reclaimed, storm and non-potable water in urban, agriculture and industrial sectors.	Ruxandra Burdescu, Caroline van den Berg, Nils Janson, Oscar Alvarado (2020), A benchmark for the Performance of State-Owned Water Utilities in the Caribbean, World Bank Group. This report points out the importance of building smart and resilient water utilities, and the need to look beyond conventional water that include wastewater technologies and approaches. Everson J. Peters (2015), University of the West Indies, St. Augustine. Wastewater reuse in the Eastern Caribbean: a case study, Institution of Civil Engineers. This paper discusses the potential of wastewater reuse in the main tourism-dependent islands in the Eastern Caribbean. The nexus between desalination and wastewater reuse allows the hotels and resorts sector to reduce the overall costs of water supply, overcome shortages in the dry season and meet stringent wastewater disposal requirements, as it was found that wastewater reuse can meet up to 38percent of total needs. Green Climate Fund (2019), Approved Project Preparation Funding Application for The R's (Reduce, Reuse and Recycle) for Climate Resilience Wastewater Systems in Barbados. This proposal is based on the Regional Strategic Framework – Achieving Development Resilience to Climate Change (2009-2015) and its implementation plan (2011-2021) and related policy advice and guidelines to the Caribbean Community (CARICOM) Member states. Specific measures to minimize waste and maximize water resources for Barbados have been identified as rainwater harvesting, non-revenue water reduction, energy efficiency measures, and development of a master plan. The Caribbean Water and Wastewater Association (2021), The Regional Strategic Action Plan for the Water Sector in the Caribbean to develop resilience to the impacts of climate change. This document, through its five pillars identifies possible actions that could optimize efficient use of water resources to adapt to climate related water scarcity including effective management of recycled wastewater and water from other sources such as rainwater and untreated surface water etc. Green Paper on the 2020 Water Protection and Land Use Zoning Policy (2020) points out the need to amend the Groundwater Protection Policy developed in the 1960s. The new policy would adopt an integrated approach that seeks to protect the groundwater, stormwater, and coastal water quality which have been impacted by the housing densities, changes in agricultural practices, and industrialization. The proposed new policy would address the sources of pollution, use the best technology and practices, strengthen capacity, and create the appropriate regulatory and legislative structure. Guidance for Preparing Regulation for Standards for Reclaimed Water Use (February 2022) provides the reclaimed water quality standards for potable and non-potable aquifer. The guidance is categorized into; (i) minimum treatment; (ii) monitoring of reclaimed water; (iii) minimum setback distances; (iv) minimum travel time; and (v) use of reclaimed water. It also includes the parameters, level of reclaimed water quality, basis for standards, and considerations.

	Development of a National Licensing and Permitting System for Wastewater Management and a Guidance Document for Wastewater Regulations, Draft Plan to Implement the Proposed Licensing and Permitting System, Guidance Manual Inspection of Wastewater Treatment Plants, Inspection Forms, and Information Guidebook for Development of a National Licensing and Permitting System for Wastewater Management (2015) highlight the proposed regulatory framework and monitoring arrangements for the implementation of Water Reuse Policy.
To adapt to climate change's impact on water stress, the Borrower, through the Cabinet, has approved the amendment of the Groundwater and Land Use Zoning Policy 2020 and the Water Protection Bill, Water Order 2022 to enable the creation of a new Desalination Water Protection Zone.	Green Paper on the 2020 Water Protection and Land Use Zoning Policy (2020) points out the need to amend the Groundwater Protection Policy developed in the 1960s. The new policy would adopt an integrated approach that seeks to protect the groundwater, stormwater, and coastal water quality which have been impacted by the housing densities, changes in agricultural practices, and industrialization. The proposed new policy would address the sources of pollution, use the best technology and practices, strengthen capacity, and create the appropriate regulatory and legislative structure. Guidance for Preparing Regulation for Standards for Reclaimed Water Use (February 2022) provides the reclaimed water quality standards for potable and non-potable aquifer. The guidance is categorized into; (i) minimum treatment; (ii) monitoring of reclaimed water; (iii) minimum setback distances; (iv) minimum travel time; and (v) use of reclaimed water. It also includes the parameters, level of reclaimed water quality, basis for standards, and considerations. Development of a National Licensing and Permitting System for Wastewater Management and a Guidance Document for Wastewater Regulations, Draft Plan to Implement the Proposed Licensing and Permitting System, Guidance Manual Inspection of Wastewater Treatment Plants, Inspection Forms, and Information Guidebook for Development of a National Licensing and Permitting System for Wastewater Management (2015) highlight the proposed regulatory framework and monitoring arrangements for the implementation of Water Reuse Policy.
To further scale-up financing options for improved environmental management and climate action, the Borrower, has established the Barbados Environmental Sustainability Fund.	Recommendation Paper on the formation of The Barbados Environmental Sustainability Fund (BESF): Establishment, Governance and Operations (December 2020)
To increase climate resilience while tackling marine pollution from land sources, the Borrower, through the Cabinet, has approved a Marine Pollution Control (Discharge) Regulation.	*Veron et al. (2009) and David Obura & Gabriel Grimsditch (2009).* Coral Reefs, Climate Change and Resilience correlates increased marine pollution and decrease of marine species resilience-such as coral reefs, increasing its vulnerability to climate change. *Diez, S.M., et al. (2019). Marine Pollution in the Caribbean: Not a minute to waste, elaborates on how e*xtreme weather events will compound the impacts of marine pollution and will weaken the resilience of some marine species. *Fiertz, Yozell, et al. (2022) Climate Risk Summary Report.* Southern and Western Urban Corridor, Barbados. Elaborates on climate risk in Barbados and combines empirical data, expert interviews, surveys, and desk research to analyze how climate and ocean risks are being *impacted.* *Irvine, Richard Suckoo & Hazel A.Oxenford (2020). Barbados coral reef report* elaborates on the status of Barbadian coral reefs and its deterioration factors. *Barbados National Biodiversity Plan (2020)* inform about marine biodiversity and drivers of the biodiversity loss. The report mentions three endangered species of marine turtles' nest in

	Barbados (IUCN, 2008). All three of these species are listed on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and that 4 species of seagrass, 10 species of soft coral and 31 species of hard coral have been recorded around the island. The seagrasses have been impacted by coastal and land-based sources of pollution while there has been little change in the coral populations. Also, named pollution as a major threat to biodiversity in Barbados. Daltry, J.C. 2016. *Phyllodactylus pulcher*. Provide an assessment on the IUCN Red List of Threatened Species for Barbados 2016: e.T48443321A115401286. *The Legal and Institutional Framework Governing Ocean-Based Economic Sectors in Barbados*, (2019) from United Nations Conference on Trade and Development describes the regulatory and institutional of Barbados MPCA stating that overall, the MPCA is enforcement oriented, providing also for the designation of marine pollution control inspectors to assist the Director and empowering them (as extensions of the Director) with the approval of the Minister and by order to, inter alia, require of persons deemed responsible for sources of pollution to take such measures as may be required to reduce the level of concentration of the pollutant to acceptable levels.
To increase climate resilience of the agriculture sector by operationalizing the agriculture information management system, the Borrower, through the Cabinet, has approved a Climate Change and Agriculture Policy.	Caribbean Community Climate Change Centre (CCCCC) 2015 "A Vulnerability and Capacity Assessment of the Food Zone of Barbados" assessed climate change vulnerabilities in the country's agriculture sector. Food and Agriculture Organization and Caribbean Development Bank. 2018 "State of Food and Agriculture in the Caribbean" identified key challenges and investment gaps facing the region and climate smart agriculture technology options. World Bank 2020 "What's Cooking: Digital Transformation of the Agri-food System" identifies potential digital technologies and information systems that support climate resilience. World Bank 2021. "Future Foodscapes: Re-imagining Agriculture in Latin America and the Caribbean" which identifies how agri-food systems in the region can evolve and contribute to growth, employment, and food and nutrition security, while sustaining natural capital endowments.
Pillar B: Low Carbon and Resilient Infrastructure	
To strengthen the Borrower's resilience and business continuity after climate change-induced natural disasters, the Borrower, through the Cabinet, has approved a National Comprehensive Disaster Management Policy.	Caribbean Disaster Emergency Management Agency, "Regional Comprehensive Disaster Management Strategy and Results Framework" *https://cdema.org/CDM_Strategy_2014-2024.pdf* *The Barbados Comprehensive Disaster Management (CDM) Country Work Programme (CWP) 2019 – 2023, DEM, Government of Barbados, 2019* Climate Change Knowledge Portal: *Barbados - Vulnerability | Climate Change Knowledge Portal (worldbank.org)* Think Hazard: *Think Hazard - Barbados* *360 Resilience, A Guide to Prepare the Caribbean for a New Generation of Shocks, World Bank, 2021* *Barbados Country Disaster Risk Profile, World Bank, 2021*

To scale-up private sector-financed renewable energy, the Borrower, through the Cabinet, has approved an Electricity Supply Bill which aims to: (i) enhance competition in the electricity market; and (ii) enable local companies' participation in renewable energy investment.	The BNEP: 2030 masterplan elaborated by the GoB in 2021-2022. Sustainable Energy Paths for the Caribbean (IDB, 2020). Integrated Resource and Resiliency Pan for Barbados (Mott McDonald, 2021). Caribbean Renewable Energy Private Sector Diagnostic (IFC, 2022).
To identify and manage expenditures and activities to improve socio-economic and infrastructure resilience to climate change, the Borrower, through the Ministry of Finance, Economic Affairs and Investment, has issued a budget circular instructing its ministries, departments, and agencies to develop and adopt a robust climate and disaster budget tagging methodology.	World Bank. 2021. Climate Change Budget Tagging: A Review of International Experience. Equitable Growth, Finance, and Institutions Insight - Governance. World Bank, Washington, DC.

4.3. LINK TO CPF, OTHER BANK OPERATIONS AND THE WBG STRATEGY

73. **As an IBRD graduate, Barbados does not have a Country Partnership Framework (CPF) with the World Bank.** However, this DPL will support Government's commitment to strengthen the country's economic recovery and longer-term economic and climate resilience in line with the World Bank's COVID-19 crisis response and GRID approach[31]. The prior actions of this operation also link directly to the GCRF as follows: PA A5 aligns with Pillar 1 and attends to a critical gender gap, PAs A1, A2, A3 and B1 align with Pillar 3, and PAs A4, B2 and B3 align with Pillar 4. The operation is closely aligned with the Bank's climate change policy commitments and functions to strengthen Barbados' overall resilience to climate, health, and economic shocks. The operation is also designed to support Government's efforts to tackle poverty exacerbated by the multiple system shocks and crises and promote shared prosperity and inclusion during and following the recovery process.

74. **The Bank does not have an active lending portfolio in Barbados given its graduation status; with the last Bank loan approved on an exceptional basis being the Barbados COVID-19 Response and Recovery DPL (P175492) that fully disbursed and closed on June 30, 2022.** This first DPL, also in the amount of US$100 million, was designed as a standalone operation and executed to support Barbados' response to the COVID-19 crisis and promote the post-crisis economic recovery. It was designed to support the GoB by: (i) strengthening the economic response to COVID-19, (ii) improving fiscal management, transparency, and business environment, and (iii) enhancing resilience to disasters.

4.4. CONSULTATIONS AND COLLABORATION WITH DEVELOPMENT PARTNERS

75. **The proposed DPL supports government's comprehensive reform agenda, which was developed in consultation with a wide range of stakeholders.** As with all legislative measures and reforms in Barbados, government's program on both the ongoing COVID-19 response measures and more recent reforms included in this second DPL were all subject to a thorough consultative process involving the private sector, civil society, and other key groups likely to be impacted by the proposed policy changes. The consultative process is an important institutional feature of GoB. The Prime Minister chairs regular meetings of the Social Partnership, which includes the private sector, labor unions, entrepreneurs, government officials, churches, and nongovernmental organizations. The Social Partnership discusses issues affecting the economy and assesses possible solutions. When viable, these suggestions are incorporated in policies, laws, and strategies. Other consultative methods include public hearings, ad-hoc meetings on specific topics, citizen panels, surveys, Internet forums, and media outlets. Specifically, with regard to the policies supported by the proposed operation, the design and implementation of the indicated policy reforms have involved and continue to involve ongoing consultations with key stakeholders, and various committees at the sector and program level have been established with a broad range of stakeholders to oversee implementation going forward.

[31] "Saving Lives, Scaling-up Impact and Getting Back on Track: World Bank Group COVID-19 Crisis Response Approach Paper" (June 2020). *http://documents1.worldbank.org/curated/en/136631594937150795/pdf/World-Bank-Group-COVID-19-Crisis-Response-Approach-Paper-Saving-Lives-Scaling-up-Impact-and-Getting-Back-on-Track.pdf*

76. **Specifically, Government-led consultations have been ongoing throughout preparation of this operation in close partnership with the IMF to synchronize selected Prior Actions with the overall aim, scope, and structure of the IMF's RSF**. Specific reforms under the RSF include introduction of green public financial management and mainstreaming of climate change into the budget as well as adoption of targeted measures that incentivize private sector investments in climate resilient infrastructure and renewable energy which are closely aligned with this DPL. The Government is also holding dedicated consultation sessions on climate-tagging and renewable energy with the representatives of the private sector and civil society who sit on the committee overseeing implementation of the BERT Plan as well as with the Barbados Social Partnership given the shift in focus of this DPL. Additional consultations have also been organized around the Water Reuse Bill and groundwater protection and land use zoning for key sector stakeholders, including domestic and commercial users, landscapers, farmers, and hotels. Relevant associations, including groups of hotels and commercial establishments that have their own wastewater treatment plants, are among other major stakeholders being consulted. In addition, the Government is consulting with the Barbados Agricultural Society that represents farmers (program beneficiaries), and which serves as the umbrella group for seven commodity-specific producer groups. With respect to the marine pollution PA, the GoB is consulting with the Caribbean Conservation Association as well as the three private sector companies that will be affected by the policy. The DRM PA consultations are inter-ministerial and ongoing with the Chamber of Commerce, the Hospital and Tourism Association and the Barbados Association of NGOs. For the BESF, consultations are taking place with the Ministry of Environment, Ministry of Maritime Affairs, and the Blue Economy (MMABE), the University of the West Indies-Centre for Resource Management and Environmental Studies (UWI-CERMES) (Non-government), and The Nature Conservancy (TNC).

5. OTHER DESIGN AND APPRAISAL ISSUES

5.1. POVERTY AND SOCIAL IMPACT

77. **The prior actions supported by the operation are expected to have mostly neutral poverty, social or distributional effects, with some having potential positive effects in the medium to long term, one being expected to be pro-poor, and one requiring consideration of potential regressive distributional effects.** This section summarizes the expected poverty and social impact of the prior actions for this operation. A detailed assessment can be found in Annex 5.

78. **Prior actions under Pillar A are expected to have mostly neutral effects with potential for effects in the medium to long term, including strengthened food security and livelihoods in rural areas, and protection of income from fishing and tourism. One prior action is expected to be pro-poor.** The Water Reuse Bill as such (PA A1), by establishing the Water Reuse Committee and defining matters related to permits, including application and administration, is expected to have neutral poverty, social or distributional effects. Nevertheless, it is expected that, as a result of the bill, the availability of water for agricultural purposes, domestic and commercial consumption, and groundwater recharge will increase, positively impacting agricultural production, including edible plants. Thereby, this prior action can contribute to strengthening food security, which is of greater

concern to poor and vulnerable households. It can also contribute to fostering resilience of rural livelihoods and generating employment in agriculture. Prior action A2, Cabinet Approval of the Creation of New Water Protection Zone for Desalination Plant Locations to Provide for Groundwater Protection and Land Use Controls, is expected to disproportionately benefit the population at the bottom of the welfare distribution, who have the lowest access to improved sanitation, water, and basic hygiene services, through improved quality of groundwater and public health. Regarding prior action A3, without further elaboration of the criteria for the selection of projects and provision of grants, the establishment of the BESF at this point can be considered as having neutral poverty, social or distributional effects. In the medium to longer term, by strengthening biodiversity conservation and management, disaster risk management, climate change adaptation and mitigation, the BESF can have positive effects, by mitigating the impact of climate change on poverty[32] and benefiting the poor and vulnerable population who are disproportionately affected by climate change. Approval of the Marine Pollution Control (Discharge) Regulations under prior action A4 is expected to have neutral poverty, social or distributional effects. In the medium to longer term, it can have positive impacts by protecting income from fishing and tourism and lead to improved health incomes, especially when combined with participatory policies.[33] Prior action A5, the approval of the Climate Change and Agriculture Policy, is likewise expected to have neutral poverty, social or distributional effects. In the longer term, if the policy results in improved resilience and productivity of farms and agri-businesses, it can contribute to the country's broader goal of maintaining domestic food production levels. This can strengthen food security with a disproportionally positive effect on the poor and vulnerable. By increasing resilience and productivity of farmers, the prior action can also contribute to protect and expand employment in the agricultural sector.

79. **Prior actions under Pillar B are expected to have neutral to unclear poverty, social, or distributive effects.** Prior action B1, the NCDM Policy, in particular through priority area 4 (Community resilience enhanced for the most vulnerable with gender concerns addressed at all stages and levels), lays the foundations for improving resilience of the poor and vulnerable to natural disasters. While approval of the policy itself is considered to have neutral effects, depending on targeting of particular interventions, it has the potential to mitigate the impact of such disasters on poverty, allowing to benefit the poor and vulnerable population disproportionately. The poverty, social or distributional effects of prior action B2 will depend on the concrete implementation of the Electricity Supply Act and consideration will should be given to potential regressive effects. Prior action B3, issuance of a Budget Circular instructing the Borrower's Ministries, Departments, and Agencies to employ Climate and Disaster Budget Tagging Methodology, is expected to have neutral poverty, social or distributional effects, with some potential for positive effects in the medium to longer term. By contributing to Barbados' mainstreaming of the monitoring, planning, and budgeting of climate-related public expenditure, this prior action is expected to improve the country's ability to prioritize climate-smart and disaster-resilient investments. This can strengthen the country's resilience to

[32] Bramka et al. (2020) estimate that between 32 and 132 million people will fall into poverty due to climate change.
[33] Participatory policies are the best channel for poverty alleviation in natural resource dependent communities, in this case coastal regions which are vulnerable to hazards that come with pollution *(Fiertz, Yozell, et al., 2022)*.

climate change and natural disasters, which can contribute to mitigating the impact of climate change on poverty and benefiting the poor and vulnerable population who are disproportionately affected by climate change.

5.2. ENVIRONMENTAL, FORESTS, AND OTHER NATURAL RESOURCE ASPECTS

80. **The Prior actions supported through the Barbados Green and Resilient Recovery DPL are likely to cause significant positive effects on Barbados' environment, forest, and other natural resources.**

81. **Pillar A: Green and Blue Resilient Recovery is primarily focused on promoting robust and resilient green recovery.** Prior actions under this Pillar are expected to generate significant positive environmental effects on the environment, forest, and other natural resources (prior actions A1, 2, 3, 4, and 5). Prior action A1 deals with use of treated wastewater for use in agriculture, domestic and commercial consumption, and groundwater recharge to reduce the countries' water stress. While water reuse presents a number of potential risks, including for human health when used for agricultural irrigation or potable water, Barbados has in place strict standards based on international good practice (in particular the USEPA Guidelines for Water Reuse (2004) and the World Health Organization Guidelines for Drinking Water Quality (GDWQ) such that no significant risks to human health or the environment are expected. The updated Barbados Water Authority Act (Prior action A2) is expected to have a significant positive impact on the environment since it regulates the water protection zones and use of wells and strengthens control of the environmental authority, reducing the country's water stress. Potential negative effects from the operation of desalinization facilities, will be adequately managed by Barbadian EIA legal framework, particularly through the *Planning Development (Environmental Impact Assessment) Regulations, 2021*. Positive impact is also expected from Prior Action A3 which seeks to create a Barbados Environmental Sustainability Fund to mobilize much needed financial resources to support achievement of Barbados' environmental and climate change goals. Prior action A4 relates to enactment of regulations to prevent, reduce, and control marine pollution that will eventually lead to a healthier and more resilient marine and coastal ecosystems. Likewise, Prior action A5 promotes adoption of climate-smart and climate resilient agriculture practices expected to reduce vulnerability to climate-related risks while lowering emissions.

82. **Pillar B: Low Carbon and Resilient Infrastructure. The environmental analysis found that prior actions B1, B2, and B3 are likely to cause significant positive effects on Barbados' environment, forest, and other natural resources.** Prior action B1 seeks to enact a DRM Policy that is expected to contribute to increased resilience. Environmentally positive impacts are also expected from prior action B2 that aims to introduce regulations to allow private sector investment in clean energy infrastructure. Potential negative impacts may result from the increased waste that could be generated from creation of generation facilities due to the new Electricity Supply Act (PA B2). However, Barbados has established robust legislation to ensure proper disposal and mitigation actions of any adverse impacts that could result from such interventions, including through appropriate provisions in its legal framework to ensure environmentally sound disposal, through for

example the environmental levy to defray the cost of the disposal of motor vehicle waste (Environmental Levy Act). In addition, Barbados has a quality Solid Waste Management *Program* that promotes recycling of automotive batteries and electronic components used in energy facilities. Lastly, Barbados is a signatory to the Basel Convention, committed to ensuring control of transboundary movements of such wastes and their disposal. Likewise, positive long-term impact is expected from Prior Action B3 related to tagging of expenditures in total expenditures of the Ministries, Departments, and Agencies to identify, mitigate and manage climate change and disaster risks. **Prior actions that may generate adverse environmental impacts are A1, A2, B1 and B2, however the national legal framework incorporates the necessary mitigation measures for their adequate management such that no significant adverse impacts are expected, as reflected in Annex 4.** In addition, Barbados has a quality Solid Waste Management *Program* that promotes recycling of automotive batteries and electronic components used in energy facilities. Lastly, Barbados is a signatory to the Basel Convention, committed to ensuring control of transboundary movements of such wastes and their disposal. Likewise, positive long-term impact is expected from prior action B3 related to tagging of expenditures in total expenditures of the Ministries, Departments, and Agencies to identify, mitigate and manage climate change and disaster risks. **Prior Actions that are likely to generate adverse environmental impacts are A1, A2, B1 and B2, however the national legal framework incorporates the necessary mitigation measures for their adequate management such that no significant adverse impacts are expected, as reflected in Annex 4.**

5.3. PFM, DISBURSEMENT AND AUDITING ASPECTS

83. **The GoB has made significant strides to enhance its Public Financial Management (PFM) system in the recent years.** Since 2018, the GoB has implemented an ambitious fiscal reform program, the BERT Plan with substantial PFM aspects. To identify potential risks that may affect achievement of the DPL's development objectives, the Bank reviewed the GoB's PFM systems and foreign exchange control environment and concluded that they do not pose material risks to the development objective of the operation.[34]

84. **Current State of the PFM environment and reforms.** The GoB has demonstrated its commitment to addressing PFM challenges and strengthening its PFM systems to achieve greater transparency, accountability, and long-term fiscal sustainability. These reforms have been supported by the IMF, through its Caribbean Regional Technical Assistance Centre (CARTAC). This is evidenced by recent reforms improving the legislative and regulatory framework for PFM, including implementation of the 2019 PFM Act which is advancing, albeit slowly.

85. **The GoB adopted an action plan for PFM reforms to implement the new PFM Act** and is taking steps to: (i) strengthen the strategic phase of the budget formulation process through annual

[34]The GoB's latest Public Expenditure and Financial Accountability Assessment of 2013 was not made public and there is no recent Country Procurement Assessment, Public Expenditure Review, or Country Policy and Institutional Assessment. The World Bank's review benefited from published assessments and reports by the IMF, the GoB's PFM reform plan and activities, annual independent audited financial statements of public accounts from 2019, 2020 and 2021, and the Central Bank's audited financial statements for the years 2019, 2020, and 2021, as published on the respective websites.

updates of the government's fiscal strategy, setting of multi-year expenditure ceilings in accordance with the updated fiscal strategy, provision of clear instructions by Cabinet for budget submissions based on a comprehensive discussion of the needs and priorities of each Ministry and program, including on spending ceilings; (ii) reform the Budget Documentation to provide more policy-oriented information to decision makers and enable more transparent budget execution; (iii) establish monitoring processes to enhance fiscal risk management. Additionally, the GoB is working to increase the efficiency and quality of the public procurement process and the effectiveness of the Public Accounts Committee (PAC) has been strengthened to allow the public to monitor in real time its oversight role, thereby ensuring full transparency. Government has created separate sub-programs to track COVID-19 related expenditures in the budget and presents to Parliament all contracts that have been awarded for BDS$1 million or more.

86. **The GoB publishes its proposed and approved annual budget on the Parliament's website[35]and are also made available to the public in printed form.** GoB is further strengthening budget formulation process by ensuring that the budget calendar is aligned to the requirements of the new PFM Act, and the budget circular is issued soon after the fiscal framework has been tabled in Parliament. The budget circular will be accompanied by expenditure ceilings approved by Cabinet for each financial year covered by the medium-term budget planning horizon. Annual Budget Documentation (Budget Estimates) provides a comprehensive narrative describing the public finances.

87. **Public money is credited to the Consolidated Fund and banked into the Treasury Single Account at the CBB.** The Treasury Account is the principal bank account of the government; and is operated by the Accountant General. No public entity can open a bank account in respect of public money, whether in or outside of Barbados, without the prior written authorization of the Director of Finance and Economic Affairs. A ministry or department which receives loan or grant funding must transfer the funds to the Consolidated Fund. In addition, each public entity that administers a donor project is expected to use the accounting and auditing procedures of the government. Treasury systems have been assessed as reliable. Nevertheless, there is room for improvement in the Internal Audit function which have been identified as a priority for further improvement and is expected to benefit from IMF's technical assistance. Secondly, based on the reports issued by the Auditor General, the timeliness and comprehensiveness of the annual government financial statements needs improvement to bring them in full compliance with International Public Sector Accounting Standards (IPSAS).

88. **Considerable effort has been directed in recent years towards improving the quality and comprehensiveness of the accounts and financial reports.** The Accountant General is responsible for preparing public financial statements in accordance with the IPSAS based on accrual accounting; and prepares monthly in-year budget execution reports using Cloud Suite data (Smart Stream formerly), showing disaggregated revenue collections and expenditures. However, challenges in complying with the accrual principles including appropriately classifying information on revenues, expenditures, financial assets, and preparing balance sheet reconciliations in a timely manner, have

[35] https://www.barbadosparliament.com/

resulted in financial information that is not relevant to decision makers. Audited public financial statements are available on the GoB's Audit Office website up to the year 2021.

89. **The Auditor General prepares and delivers audit opinions on the annual financial statements of the Government, in accordance with Section 88 (1) of the PFM Act.** The Audit Office has a broad mandate for conducting audits on Government agencies derived from the Constitution of Barbados, and the PFM Act. The latest audit report on the financial statements is available online up to the financial year 2021. In this audit report, the Auditor General presented an adverse opinion on the financial statements and revealed material errors and omissions which rendered the financial statements unreliable. The GoB's financial statements did not represent all entities owned and controlled by the government; and therefore, the financial statements did not fully comply with IPSAS and misstated the financial position of the GoB. The GoB has developed and published a detailed action plan addressing the audit findings. The Public Accounts Committee of Parliament is to review the annual audited Financial Statements of the government and report to Parliament on the results of such reviews no later than the first week of the tenth month of the financial year following the financial year under review and such report shall include recommendations on the actions to be taken. However, currently, there is no Chairman of the PAC, and there is some uncertainty on how the PAC can function.

90. **Public procurement is governed by the 2021 Public Procurement Act which was approved but not proclaimed.** The Act seeks to strengthen the fairness, integrity, and transparency of the procurement process and provide a framework to facilitate the audit of crisis expenditures and publication of contracts and names of successful bidders. However, the Act did not incorporate best practice procurement principles, and some possible integrity issues remain. There are potential conflicts of interests in the roles and responsibilities of the Chief Procurement Officer, and there is relatively limited delegation of decisions to the procuring entities, which may delay procurement to respond to emergencies. Barriers to entry from the supplier registration process have been identified and the process to approve contracts and amendments is highly centralized, potentially resulting in additional bottlenecks. The Act should also explicitly cover the adoption of sustainable, emergency, and 'pooled' procurement. On implementation related aspects, there is a lack of detailed procedural guidelines, standard documents, and clear processes. The system is heavily centralized and there is no cadre of professional procurement staff.

91. **Foreign Exchange (FOREX) internal control environment does not pose risks to the development objectives of this operation.** The most recent Safeguards Assessment of Barbados was completed by the IMF in 2018. On December 14, 2020, the Parliament of Barbados repealed and replaced the former Act with the CBB Act 2020-30. The purpose of the new Act is to strengthen the CBB's governance and independence while maintaining accountability. Another purpose of the new Act is to ensure the compliance of the CBB with internationally recognized accounting standards and other related matters. As part of the fiduciary due diligence conducted by the World Bank, the CBB's published audited Annual Financial Statements (AFS) for the years 2019, 2020, 2021 were reviewed. These financial statements present reliable financial information aligned with International Financial Reporting Standards. The audit was conducted by an independent internationally

recognized audit firm and contained unqualified audit opinions of the AFS. Unmodified opinions from the external auditors did not reveal any significant issues related to the internal control environment.

92. **Disbursement and reporting arrangements.** The proposed loan will follow the World Bank's standard disbursement procedures for development policy support. Upon approval of the operation, effectiveness of the Financing Agreement, and submission of a signed withdrawal application, the proceeds of the loan will be disbursed into an account at the CBB, which will form part of the country's Foreign Exchange Reserves. The Borrower shall, within thirty (30) after the withdrawal of the DPL proceeds report to the World Bank: (a) the exact sum received into the account; (b) details of the account to which the local currency equivalent of the loan proceeds was credited; and (c) confirm that an equivalent amount has been accounted for in the Borrower's budget management systems. This confirmation will include the applied rate of exchange and the date of transfer.

93. **The financial support provided under this operation is not intended to finance goods or services on the list of "Excluded Expenditures".** If any portion of the loan is used to finance ineligible expenditures as so defined in the Financing Agreement, the Bank shall require the Borrower to refund the amount and such payments made for excluded expenditures would be cancelled. No specific audit of the deposit of the credit proceeds will be required.

94. **Fiduciary risk is considered moderate.** On the basis of (i) analysis of the PFM environment; (ii) GoB commitment and support to PFM reforms; (iii) budget transparency; (iv) progress in implementing PFM reforms; (v) on-going technical assistance (provided by other development partners e.g. the IMF) to strengthen internal controls over budget expenditures; and (vi) satisfactory internal control environment over FOREX, overall fiduciary risk to the achievement of the operation's development objectives has been assessed as moderate.

5.4. MONITORING, EVALUATION AND ACCOUNTABILITY

95. **Monitoring and evaluation of the reform program will be undertaken jointly by the GoB and WB teams. The Ministry of Finance, Economic Affairs and Investment will be responsible for coordinating actions by other relevant ministries and agencies**. The WB has discussed the importance of the monitoring and evaluation process, including stocktaking exercises with the relevant institutions and stakeholders to ensure practical and useful feedback to policymakers. Result indicators have been specifically selected to reflect available data sources in Barbados and build on lessons learned from earlier policy-based lending operations that recommend the use of simple and manageable results frameworks using available sources of data. The results framework agreed to by the GoB and the Bank is presented in Annex 1 and will be used as a monitoring tool by both the government and the WB.

96. *Grievance Redress.* Communities and individuals who believe that they are adversely affected by specific country policies supported as Prior Actions or tranche release conditions under a World Bank Development Policy Financing may submit complaints to the responsible country authorities,

appropriate local/national grievance mechanisms, or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address pertinent concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit *http://www.worldbank.org/GRS*. For information on how to submit complaints to the Bank's Accountability Mechanism, please visit *https://accountability.worldbank.org*

6. SUMMARY OF RISKS AND MITIGATION

97. **The overall risk to achieving the PDO of this operation is deemed to be Substantial, with Macroeconomics, Sector Strategies and Policies, and Technical Design all rated as Substantial.**

98. **Sector Strategies and Policies, and Technical Design are both deemed Substantial due to the uncertainty of tackling the lingering challenges generated by the ongoing COVID-19 pandemic and the effectiveness of requisite actions necessary for a robust and resilient economic recovery.** Given the uniqueness of the continued shock and future disruptions posed by COVID-19, it is not yet possible to predict with any degree of certainty the level of effectiveness and efficiency of the Government's strategies and technical design. In addition, as the fourth operation to be requested under exceptional terms, given that Barbados is an IBRD graduate, there is limited experience in supporting new and innovative climate resilient policy programs with the GoB. This risk will be mitigated through dedicated and continuous engagement with GoB authorities during appraisal, as well as following Board approval.

99. **Macroeconomic risk is deemed Substantial.** The continued uncertainty associated with COVID-19 poses considerable risk to the macroeconomic framework, as growth, fiscal and debt outcomes could vary significantly depending on the pandemic's evolution. A global resurgence of the pandemic could have a lingering negative economic impact on the tourism sector, and hence on all key macroeconomic variables, putting at risk achievement of the part of the PDO related to promoting economic development. A natural disaster would also exacerbate this risk, as would the overall vulnerability to climate change. A worsening or prolonged external environment resulting from the global effects of the war in Ukraine and the possibility of economic slowdown in the major trade partners adds to this risk and makes the process of fiscal adjustment more difficult. The risk is mitigated through satisfactory performance under the recently completed IMF program, and by preparation of a new one.

Summary Risk Ratings

Risk Categories	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Moderate
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	
Overall	Substantial

ANNEX 1: POLICY AND RESULTS MATRIX

Prior Actions and Triggers	Results		
Prior Actions	**Indicator Name**	**Baseline**	**Target**
Pillar A: Green and Blue Resilient Recovery			
Prior Action A1: To reduce the Borrower's water stress levels, the Borrower has submitted for parliamentary approval a law on water reuse, which incorporates key aspects of the National Water Reuse Policy, such as promotion of safe use of reclaimed, storm and non-potable water in urban, agriculture and industrial sectors.	Number of reclaimed water reuse permits approved by Environmental Protection Department under the Water Reuse Act. Estimated flows for water reuse from at least five wastewater treatment plants.	0 (2022) 0 (2022)	5 (2023) 174,000 US gallons per day (2023)
Prior Action A2: To adapt to climate change's impact on water stress, the Borrower, through the Cabinet, has approved the amendment of the Groundwater and Land Use Zoning Policy 2020 and the Water Protection Bill, Water Order 2022 to enable the creation of a new Desalination Water Protection Zone.	Amendment to the Water Protection Bill and Water Order 2022. New Water Protection Zoning System adopted.	NA (2022) NA (2022)	Amendment to the Bill completed (2023) Water protection zoning system is incorporated into the physical development plan (2023)
Prior Action A3: To further scale-up financing options for improved environmental management and climate action, the Borrower, has established the Barbados Environmental Sustainability Fund.	Amount of funds mobilized from the GoB to the Barbados Environmental Sustainability Fund.	US$0 (2022)	US$2.5 million (2023)
Prior Action A4: To increase climate resilience while tackling marine pollution from land sources, the Borrower, through the Cabinet, has approved a Marine Pollution Control (Discharge) Regulation.	Companies within the source category identified in Section 4(11) of the Marine Pollution Control (Amendment) Act, Cap. 392 with direct discharges to the marine	0 (2022)	3 (2023)

	environment, complete the Discharger Form by December 2023 and Register with the Environmental Protection Department.		
Prior Action A5: To increase climate resilience of the agriculture sector by operationalizing the agriculture information management system, the Borrower, through the Cabinet, has approved a Climate Change and Agriculture Policy.	Operationalization of the agriculture information management system as measured by: a) Percentage of agricultural land that is mapped in line with the parameters identified in the Climate Change and Agriculture Policy by end 2023. b) Gender disaggregated data is used to improve planning and decision-making: Conduct a gender analysis of the mapped farms and use it to develop a gender-sensitive action plan for assisting farms in upgrading to digital agriculture technologies.	0 (2022) NA (2022)	60 (2023) Preparation and adoption by Ministry of Agriculture (2023)
Pillar B: Low Carbon and Resilient Infrastructure			
Prior Action B1: To strengthen the Borrower's resilience and business continuity after climate change-induced natural disasters, the Borrower, through the Cabinet, has approved a National Comprehensive Disaster Management Policy.	Standards and template established for ministry and agency level disaster management plans. Percentage of national emergency management offices and organizations that have a completed an institutional review of their technical, financial, and administrative capacities.	NA(2022) 0 (2022)	Standards and Templates prepared (2023) 10 (2023)

Prior Action B2: To scale-up private sector-financed renewable energy, the Borrower, through the Cabinet, has approved an Electricity Supply Bill which aims to: (i) enhance competition in the electricity market; and (ii) enable local companies' participation in renewable energy investment.	Renewable Energy capacity under development or operation (in MW).	30 (2022)	60 (2023)
Prior Action B3: To identify and manage expenditures and activities to improve socio-economic and infrastructure resilience to climate change, the Borrower, through the Ministry of Finance, Economic Affairs and Investment, has issued a budget circular instructing its ministries, departments, and agencies to develop and adopt a robust climate and disaster budget tagging methodology.	Percentage of budget programs tagged for climate change.	0 (2022)	25 (2023)

ANNEX 2: FUND RELATIONS ANNEX

IMF Executive Board Approves US$113 million under the Extended Fund Facility and US$189 million under the Resilience and Sustainability Facility for Barbados

- The Executive Board of the International Monetary Fund (IMF) approved a 36-month Extended Fund Facility (EFF) in the amount of US$113 million, in addition to a Resilient and Sustainability Fund (RSF) in an amount of US$189 million.
- The new IMF-supported program will build on the achievements of Barbados' 2018-22 EFF and draw on the authorities' updated economic reform program (BERT 2022), including on efforts focusing on building resilience to natural disasters and climate change as well as reducing greenhouse gas emissions and transition risks.
- Despite a series of global and regional economic shocks, Barbados continues its strong implementation of its ambitious economic reform program aimed at restoring fiscal sustainability, increasing reserves, and unlocking growth potential. Economic activity in Barbados is starting to recover from the COVID-19 pandemic but risks to the outlook remain elevated, with higher global commodity prices pushing up inflation.

Washington, DC – December 7, 2022: The Executive Board of the International Monetary Fund (IMF) approved a 36-month arrangement under the Extended Fund Facility (EFF) in an amount equivalent to SDR 85.05 million (about US$113 million) and an arrangement under the Resilience and Sustainability Facility (RSF) in an amount equivalent to SDR 141.75 million (about US$189 million) for Barbados to maintain and strengthen macroeconomic stability, support the structural reform agenda, and increase resilience to climate change.

Despite a series of economic shocks, Barbados continues its strong implementation of its comprehensive Economic Recovery and Transformation (BERT) plan aimed at restoring fiscal sustainability, increasing reserves, and unlocking growth potential. The new IMF-supported program will build on the achievements of Barbados' 2018-22 EFF and draw on the authorities' updated economic reform program (BERT 2022). The global coronavirus pandemic and higher global commodity prices, along with Barbados' exposure to climate change and natural disasters, are posing major challenges for the tourism-dependent economy. Reform efforts focus on building resilience to natural disasters and climate change as well as reducing greenhouse gas emissions and transition risks.

Following the Executive Board's discussion, Mr. Kenji Okamura, Deputy Managing Director and Acting Chair of the Board, issued the following statement:

1. "Barbados continues to make good progress in implementing its homegrown Economic Recovery and Transformation Plan, despite a very challenging global economic environment. Macroeconomic stability was restored in 2018 and 2019 with a combination of fiscal consolidation, comprehensive debt restructuring, and structural reforms to support growth. This created space for a countercyclical policy response to the COVID-19 pandemic in 2020 and 2021. Public debt was put back on a clear downward trajectory starting FY2021/22.

2. “While Barbados continues to confront challenges owing to the global pandemic and Russia’s invasion of Ukraine, the economic recovery is now well underway. Inflation has been rising since the second half of 2021 owing to supply chain disruptions and increasing global food and oil prices. The economic recovery is expected to continue over the medium term, but downside risks to the outlook remain high.

3. “Building on the successful completion of a 2018-22 Extended Fund Facility (EFF), the new EFF arrangement aims to maintain and strengthen hard-won macroeconomic stability and promote the unfinished structural reform agenda. Key elements of the program would be the gradual and sustained increase in primary surpluses and ambitious structural reforms, such as strengthening of tax and customs administration as well as Public Financial Management (PFM), adoption and implementation of pension reform, the rationalization and consolidation of State-Owned Enterprises (SOEs), and growth-enhancing measures, including additional steps to improve the business climate. The program targets a primary surplus of 2 percent of GDP in FY2022/23, up from minus 1 percent of GDP recorded in both FY 2020/21 and FY 2021/22.

4. “The arrangement under the RSF will provide financing to support the country’s climate change adaptation and mitigation efforts, and support Barbados’ ambitious goal of transitioning to a fully renewable-based economy by 2030. Reforms under the RSF include the mainstreaming of climate change in the budget, the introduction of ‘green Public Financial Management’, including in procurement, and measures that would incentivize private sector investments in climate resilient infrastructure and into renewable energy projects. These measures were identified in close coordination with the World Bank and other international partners.”

ANNEX 3: LETTER OF DEVELOPMENT POLICY

MINISTRY OF FINANCE, ECONOMIC AFFAIRS AND INVESTMENT
GOVERNMENT OF BARBADOS
Government Headquarters
Bay Street, St. Michael
BARBADOS

Fax: *(246) 535-5630* **Tel. No.:** *(246) 535-5300*

Our Ref.: 7045/79/1 Vol. 5 **Date:** December 06, 2022

Mr. David Malpass
President
The World Bank Group
1818 H Street N.W.
Mail Stop MC 13-1302
Washington, DC 20433
UNITED STATES OF AMERICA

Dear President Malpass,

On behalf of the Government of Barbados, I hereby submit Government's Letter of Development Policy for the Barbados Green and Resilient Recovery Development Policy Loan (DPL) in the amount of US$100 million.

This DPL is designed to support Barbados' green development and climate resilience to promote a sustainable, resilient, and inclusive recovery. The operation is expected to support the country's transition onto a climate resilient pathway.

This Letter presents a cogent summary of the central elements of the Barbados Economic Recovery and Transformation (BERT) Plan, and Government's firm commitment to swiftly pivot Barbados onto a long-term, sustainable green and resilient growth trajectory. The two pillars of this DPL are structured to align closely with Government's ambitious green and climate resilient reform program, in the following two areas: (i) Pillar 1: Green and Blue Resilient Recovery; and (ii) Pillar 2: Low Carbon and Resilient Infrastructure.

1. Economic and Social Context

Mr. President, the economy of Barbados is gradually recovering from the impact of multiple external shocks which it experienced over the last three years, including the COVID-19 pandemic, volcanic ashfall from neighboring St. Vincent and the Grenadines, and Hurricane

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Elsa. Shortly after forming our government in 2018, we announced the BERT Plan to boost growth and ensure fiscal consolidation, in response to the country's challenging fiscal position and following a decade of anemic growth that averaged close to 0 percent in real terms over the period 2009-2019. The plan has aimed at restoring macroeconomic stability while safeguarding the financial and social sectors and included a comprehensive and orderly restructuring of its public debt into 2019. Through BERT, we implemented key structural reforms, including thoughtful adjustment of taxes, imposition of new fees and broadening of the tax base, while reducing the burden of the country's state-owned enterprises (SOEs) on the budget through enhanced oversight, improved reporting, reduced operating costs and increased revenue. The 2019 Financial Management and Audit (FMA) Act empowered the Ministry of Finance to approve all SOE borrowing and sanction SOEs for non-compliance with enhanced reporting requirements. Following the deep structural reforms under the BERT Plan in 2018 and 2019, Barbados achieved primary fiscal surplus of 6 percent of GDP in 2019 and was poised in 2020 for the first period of sustainable growth in over a decade.

Mr. President, we recently completed a dedicated four-year program with the IMF and as you may know, we are currently negotiating a new one which includes a Resilience and Sustainability Facility (RSF) component. Performance of the program to date, which supported implementation of the BERT plan and was aimed at restoring fiscal and debt sustainability and increasing reserves and growth, was assessed by the IMF Board as strong despite significant economic shocks. The joint RSF and the Extended Fund Facility (EFF) program is designed to balance efforts to enhance resilience to climate change and support Barbados' continued efforts to reduce public debt and facilitate capital expenditure to boost growth. In particular, the EFF component will help the country to maintain and strengthen macroeconomic stability in a more shock-prone environment by enhancing fiscal sustainability, continuing and broadening the implementation of the structural reform agenda. The RSF will facilitate mainstreaming of climate change into the budget and strengthen risk management for the financial sector.

The COVID-19 pandemic temporarily interrupted these positive developments as it led to effective closure of our tourism industry. Tourism represents approximately 40 percent of our employment and GDP and there was a sharp decline in several other major sectors like restaurants, manufacturing, retail trade and transport. GDP fell by 13.7 percent in 2020. Inevitably, this led to the weakening of our solid fiscal position before COVID-19, significant increase in public debt to GDP ratio, and an implosion of the labour market. This also placed tremendous strain on the country's social security and welfare schemes which our government was able to adjust and support with assistance from international financial institutions. Following major vaccination campaigns in Barbados and around the world, the pandemic began to recede, but our country experienced two natural disasters last year which slowed down economic recovery and, in turn, delayed our return to international capital markets. In 2021, our economy grew by only 0.7 percent.

Mr. President, economic growth has now begun to accelerate in Barbados and is expected to exceed 10 percent this year. Growth acceleration is, in large part, due to the ease of lockdown, lifting of travel restrictions and to our renewed effort to implement structural reforms. We also resumed our fiscal consolidation effort and are rolling back pandemic-related fiscal support. We expect that primary fiscal surplus will reach 2 percent of GDP this year and plan to increase it to

5 percent of GDP by 2025. As of October 2022, 135 COVID-19 vaccination doses were administered per 100 people in Barbados. However, the numbers of stay-over-visitors are still at about 60 percent of their pre-pandemic levels, and the external environment remains challenging in myriad ways. Inflation started to increase in Barbados from the second half of 2021, largely fuelled by increasing global food and oil prices. Such increases are also placing strong upward pressure on the current account deficit likely to exceed 10 percent of GDP for the second year in a row.

These challenges notwithstanding, Barbados' socio-economic conditions are expected to improve over the medium term as our government is determined to continue its efforts to implement reforms and mitigate economic shocks, especially those related to climate change. Indeed, Barbados' macroeconomic and social resilience is expected to be strengthened through reforms supported by this DPL.

Components of Government's Reform Program and Commitment

Pillar 1: Green and Blue Resilient Recovery

Specifically, Mr. President, Barbados has recently adopted a number of significant and transformational policies that prioritize climate resilience and green/blue socio-economic recovery, including a Water Reuse Policy, Groundwater Protection, establishment of an Environmental Sustainability Fund, approval of a Marine Pollution Control (Discharge) Regulation designed to address marine pollution and increase climate resilience, and approval of a dedicated Climate Change and Agriculture Policy.

It is well recognized that the increased intensity and frequency of climate change impacts, including changing precipitation patterns and prolonged periods of droughts and heavy rainfall, are worsening Barbados' significant water stress levels. Government is adopting multiple measures to maximize efficient use of available water resources while ensuring the long-term climate resilience of the water sector. Specifically, Government's vision for the water sector is to improve the quality of life and promote agricultural and industrial activities in support of a sustainable economy. Through adoption of the 2019 National Water Reuse Policy, Government has been promoting safe use of reclaimed, storm and non-potable water in urban, agriculture and industrial sectors, such that health outcomes and environmental quality are not compromised. With recent approval (September 29, 2022) of the Water Reuse Bill, Government will now be able to facilitate and increase issuance of reclaimed water reuse permits to enhance use of rainwater, stormwater, and treated wastewater for agricultural purposes, domestic and commercial consumption, and groundwater recharge.

Indeed, half of all agricultural land is equipped with irrigation infrastructure, and competition for freshwater resources continues to be a serious challenge in tandem with increased saline intrusion. The agriculture sector is highly vulnerable to climate change and experiences substantial losses during droughts and other natural disasters; the most recent being Hurricane Elsa and the La Soufriere volcanic ashfall in 2021. Climate change is expected to lead to increased temperatures and frequency of drought events, which will reduce yields and increase pest and disease pressures on the sector. To address such challenges, Government is actively

promoting high efficiency irrigation, improved water management practices and drought resilient farming practices. For example, through its new Climate Change and Agriculture Policy, approved on September 29, 2022, Government will strengthen collection, monitoring, and communication of agriculture sector-related data vital for ensuring improved farmer resilience and increased farm and agri-business productivity through uptake of technologically advanced climate smart practices.

Furthermore, to address the gap in financing available for improved climate resilient and environmental sustainability, Government recently approved establishment of the Barbados Environmental Sustainability Fund (BESF). The BESF will mobilize much needed financing to support targeted biodiversity conservation and priority climate change mitigation and adaptation actions from international donors, the private sector and from Government resources. Barbados has also long been a leader in terms of protecting its rich coastal and marine biodiversity; an important asset for its tourism sector and overall climate resilience. Moving to halt land-based leakage of marine pollutants and improve resilience of Barbados' coastal ecosystems, Government has recently strengthened the country's resilience by investing in the country's *Roofs to Reefs Program* to decrease land-based sources of marine pollution. Barbados also acceded to the Protocol Concerning **Pollution from Land-Based Sources and Activities** (LBS) in 2019[1]. To provide greater control of pollution adversely affecting Barbados' coastal and marine environments, Government has just approved the Marine Pollution Control (Discharge) Regulation that will reduce eutrophication in critical coastal and marine habitats. By ensuring significant levels of marine pollution abatement, Barbados' resilience to future climatic events will be ensured.

Pillar 2: Low Carbon and Resilient Infrastructure

The Government of Barbados has also adopted a clear strategy to deliver on its Paris Agreement commitments, including through endorsement of the Barbados National Energy Policy 2019-2030 (BNEP). The main commitments outlined in this Policy, include: (i) 100 percent of Barbados electricity produced from Renewable Energy (RE) by 2030 (target was 65 percent at the UNFCCC COP15); (ii) elimination of the use of diesel and gasoline for local transport over the next decade[2]; and (iii) development of an energy sector that offers reliable and affordable energy products and services, enabling local entrepreneurship and international investment in Barbados' energy sector. Renewable energy will also contribute to lowering the cost of electricity generation and contribute to affordable access for our citizens and support private sector growth.

Government has also made important strides toward sustainable and low carbon transformation of its economic and social systems. In its updated Nationally Determined Contribution (NDC), Barbados' unconditional mitigation contribution for 2030 consists of: (i) 95 percent share of renewable energy in the electricity mix; (ii) 100 percent electric or alternatively fueled vehicles in the passenger fleet; (iii) 20 percent increase in energy efficiency across all sectors as compared to BAU; (iv) 29 percent decrease in industrial, commercial and residential fuel consumption as compared to BAU; and, (v) 20 percent decrease in waste emissions. With the

[1] See https://www.unep.org/cep/who-we-are/cartagena-convention
[2] Barbados has currently approx. 300 electric vehicles in circulation, on over 100,000 vehicles in the island (source: BNEP 2019).

2019 BNEP, Government has signaled its strong commitment to a clean energy future by setting the target of a fossil fuel-free electricity sector by 2030.

To realize the BNEP vision and implement a strategy aligned with the country's 2021 NDC Update, Government is preparing a set of policies that support transition to use of cleaner energy and contribute to the country's green and resilient economic recovery. In particular, the new Electricity Supply Act is an essential pillar of this enabling regulatory framework. The new Act will bring substantial changes to Barbados' electricity sector, including: (i) clarification of the sector's institutional framework to streamline processes and oversight of RE development; (ii) enabling environment for the development of RE generation capacity and adequately sequenced phase down of the thermal power generation; and, (iii) opening for further instruments and policies to incentivize financing of clean energy projects, with a specific emphasis on locally financed projects.

Government's priority actions to strengthen its climate resilience also involve the *2021 Physical Development Plan* that sets out policies and strategies to guide land use, settlement patterns, infrastructure and environmental management that enhance resilience under changing climate conditions. Government's *2021 Roofs to Reefs Programme* (R2RP) operationalizes the PDP and directs public investment, including by making low- and middle-income homes more resilient to extreme weather events; increasing freshwater storage capacity and water use efficiency; making critical utility, water and sanitation and road infrastructure climate resilient. Through recent approval of its Comprehensive Disaster Risk Management (DRM) Policy, Government has effectively created the enabling environment to streamline strengthened DRM principles across all core growth sectors, community readiness and afforded delivery of an improved knowledge base that will support Barbados' improved resilience to climate change and natural hazards; thereby enhancing protection of its most vulnerable citizens and coastal infrastructure.

Government is also working to improve its ability to prioritize climate-smart and disaster-resilient investments. Government developed a climate and disaster-related budget tagging methodology which introduces a climate-tagging system in Barbados that will mainstream monitoring, planning, and budgeting of climate-related public expenditures. The methodology integrates recent updates to Barbados' national climate and disaster risk policies, budgeting system, chart of accounts, financial management information systems, and budget documents, as well as global experience with climate tagging methodologies. Government has issued a Budget Circular instructing relevant Ministries, Departments, and Agencies to employ this methodology for FY2023/24 budgeting.

2. Conclusion

The Government of Barbados is committed to:

(i) completing all of the actions necessary to be considered for removal from the Financial Action Task Force grey list by December 30, 2023;

(ii) ensuring development of future desalination plants and further groundwater protection measures through appropriate zoning measures;

(iii)ensuring that Barbados strengthens its green/blue socio-economic resilience to myriad global crises, including climate-related shocks; and

(iv)meeting our sustainable development objectives by advancing on our robust resilient recovery reform agenda, important aspects of which are supported by this DPL.

The Government of Barbados appreciates the World Bank's support for our reform agenda; and we trust that our request will receive endorsement of the World Bank's Board of Executive Directors.

Yours Sincerely

Ian St. C. Cha[illegible]
Director of Finance and Economic Affairs

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ANNEX 4: ENVIRONMENT AND POVERTY/SOCIAL ANALYSIS TABLE

Prior Actions	Significant environmental effects	Significant poverty, social or distributional effects positive or negative
Pillar A: Green and Blue Resilient Recovery		
To reduce Barbados' water stress levels, the Borrower has submitted a law on water reuse for parliamentary approval, which incorporates key aspects of the National Water Reuse Policy, such as promotion of safe use of reclaimed storm and non-potable water in urban, agriculture and industrial sectors.	**Positive impact.** It is expected that reusing water will reduce water stress by augmenting availability because of the increased usage of reused water for purposes of domestic and commercial consumption, and groundwater recharge.	**Neutral effects**, in the absence of targeting, with the potential for positive effects in the medium to long term through strengthened food security and livelihoods in rural areas.
To adapt to climate change's impact on water stress, the Borrower, through the Cabinet, has approved the amendment of the Groundwater and Land Use Zoning Policy 2020 and the Water Protection Bill, Water Order 2022 to enable the creation of a new Desalination Water Protection Zone.	**Positive impact.** Regulating the water protection zones, use of wells, and strengthening control of the environmental Authority is expected to have a positive impact on the Barbadian environment. Potential negative effects from operation and management of desalinization facilities will be adequately managed by the Barbadian EIA legal framework, particularly through the *Planning Development (Environmental Impact Assessment) Regulations, 2021*.	**Some progressive effects** are expected, especially if targeted, as access to improved sanitation, water, and basic hygiene services is the lowest for the bottom quintile of the welfare distribution.
To further scale-up financing options for improved environmental management and climate action, the Borrower, has established the BESF.	**Positive impact.** The Barbados Environmental Sustainability Fund is expected to increase investment to achieve targets set in the climate and environmental agenda. In the long run, is expected to have a positive impact on the environment.	**Neutral effects**, with potential for positive effects in the medium to longer term, depending on the eventual design of the grant provision mechanism.
To increase climate resilience while tackling marine pollution from land sources, the Borrower, through the Cabinet, has approved a Marine Pollution Control (Discharge) Regulation.	**Positive impact.** Enhancing the regulation to increase marine pollution control by creating a Register of Sources Categories (such as domestic sewage, Agricultural, industries, oil, and sugar) identifying each source of pollution by quantity, conditions and concentrations is expected to reduce discharge from sources due to the increased control. Also, increasing penalties imposed for those	**Neutral effects**, with potential for positive impacts in the medium to longer term by protecting income from fishing and tourism and leading to improved

	who contravene the Act is expected to disincentivize discharge to the marine environment. In the long term, reducing pollution is likely to result in improved conservation, stability and integrity of coastal and marine ecosystems, better resilience to the effects of climate change, and increased carbon sequestration capacity.	health incomes.
To increase climate resilience of the agriculture sector by operationalizing the agriculture information management system, the Borrower, through the Cabinet, has approved a Climate Change and Agriculture Policy.	**Positive impact.** Adoption of climate-smart and climate resilient agriculture practices and technologies is expected to generate positive impacts because it will reduce vulnerability to drought, diseases, and other climate-related risks while lowering emissions and avoiding potential deforestation due to extension of the agricultural frontier.	**Neutral effects**, with potential for positive effects in the medium to longer term through strengthened food security, and by contributing to protecting and expanding employment in the agricultural sector.
Pillar B: Low Carbon and Resilient Infrastructure		
To strengthen the Borrower's resilience and business continuity after climate change-induced natural disasters, the Borrower, through the Cabinet, has approved a National Comprehensive Disaster Management Policy.	**Positive impact**. It is expected that the DRM Policy will positively impact Barbados' environment since it will contribute to increased climate resilient through mainstreaming DRM principles into administrative planning.	**Neutral immediate effects**, with potential for positive effects by laying the foundations for improving resilience of the poor and vulnerable to natural disasters and thereby having the potential to mitigate the impact of such disasters on poverty, and, depending on targeting of particular interventions, allowing to benefit the poor and vulnerable population disproportionately
To scale-up private sector-financed renewable energy, the Borrower, through the Cabinet, has approved an Electricity Supply Billwhich aims to (i) enhance competition in the electricity market; and (ii) enable local companies' participation in renewable energy investment.	**Positive impact.** Positive returns for the environment are expected from increased usage of RE in terms of decreasing emissions. Potential negative environmental impacts may result if the increased creation of generation facilities due to the New Electricity Supply Act, including increase of Waste Electrical and Electronic Equipment (WEEE)	

	generation. However, the Ministry of Environment has an appropriate program to prevent potential adverse environmental impacts and minimize the risk of environmental accidents.	
To identify and manage expenditures and activities to improve socio-economic and infrastructure resilience to climate change, the Borrower, through its Ministry of Finance, has issued a budget circular instructing its ministries, departments, and agencies to develop and adopt a robust climate adaptation and mitigation budget tagging methodology.	**Positive impact.** Positive environmental impact is expected from the improved environmental management resulting from tagging expenditures in total expenditures of the Ministries, Departments, and Agencies to identify, mitigate and manage climate change and disaster risks.	**Neutral effects**, with some potential for positive effects in the medium to longer term by contributing to increasing Barbados' resilience to climate change and natural disasters.

ANNEX 5: POVERTY AND SOCIAL ANALYSIS

1. **The eight Prior Actions selected for inclusion in this operation have been assessed to have the following poverty and social impacts:**

2. **Prior Action A1.** To reduce Barbados' water stress levels, the Borrower has submitted a law on water reuse for parliamentary approval, which incorporates key aspects of the National Water Reuse Policy, such as promotion of safe use of reclaimed storm and non-potable water in urban, agriculture and industrial sectors. The Water Reuse Bill establishes the Water Reuse Committee and defines matters related to permits, including application and administration. This should have neutral poverty, social or distributional effects. Nevertheless, it is expected that as a result of the bill, the availability of water for agricultural purposes, domestic and commercial consumption, and groundwater recharge will increase. Increased availability of water for agricultural purposes is, in turn, expected to have a positive impact on agricultural production, including edible plants, which is already affected negatively by declining water availability. Thereby, this prior action can contribute to strengthening food security, which is of greater concern to poor and vulnerable households. It can also contribute to fostering resilience of rural livelihoods and generating employment in agriculture. The Water Reuse Bill does not make any provisions for targeting specific areas of the country. This would be needed in order to address inequalities in quality and available quantity of water in the country.[36]

3. **Prior Action A2.** To provide for groundwater protection and land use controls, the Borrower, through the Cabinet has approved that the Groundwater and Land Use Zoning Policy 2020 and the Water Protection Bill, Water Order 2022 be amended to include the new Desalination Water Protection Zone. The creation of New Water Protection Zone, amendment to the Groundwater and Land Use Zoning Policy 2020, Water Protection Bill, Water Order 2022, BWA Act are intended to ensure; (i) stricter control of chemical usage and disposal (including agrochemicals); (ii) sewering of communities around the Belle public supply well, which supplies almost one-third of the island's drinking water; (iii) reduction in the use of suck wells as the primary method of domestic wastewater disposal; (iv) requirement by the developers to provide the means of protecting ground water and coastal waters whether by sewage treatment, wetlands, or other acceptable means as deemed appropriate. Together, these measures are expected to improve the quality of groundwater and public health and disproportionately benefit the population at the bottom of the welfare distribution. According to the latest information from the WHO-UNICEF Joint Monitoring Program for Water Supply, Sanitation and Hygiene, which is based on the 2012 Barbados Multiple Indicator Cluster Survey (MICS), access to improved sanitation, water, and basic hygiene services is the lowest for the bottom quintile of the welfare distribution (see Table A5.1). Therefore, it is expected that expanding sewage, especially if targeted to currently underserved communities, would be pro-poor. Through the inclusion of coastal waters into groundwater protection and land zoning, this prior action furthermore can have positive impacts in the medium to long-term by protecting the coral reefs in addition to benefits on health of the population through decreased pollution. This can contribute to securing income from tourism and fishing.

[36] Households in poorer remote regions of Barbados (St. Joseph and St. Lucy) often suffer daily interruptions of water and women bare the greater burden as they do household chores that require water *(Suchorski, 2009)*.

Table A5.1: Inequalities in access to improved sanitation, water, and basic hygiene services, 2012

2012		NATIONAL wealth index quintile (in percent)				
Percentage based on weighted population		Poorest	Poor	Middle	Rich	Richest
Use of sanitation facilities	Improved	97.2	99.9	99.9	100	99.9
	Unimproved	1.2	0.1	0.1	0	0.1
	Open defecation	1.6	0	0	0	0
Use of drinking water sources	Improved	98.9	100	100	0	0
	Not Improved	1.1	0	0	0	0
Access to hygiene facilities	Basic	78.7	87.9	92.2	92.1	90.9
	Limited	4.5	3.6	1.4	0.9	1.6
	No facility	16.8	8.5	6.4	7.0	7.6

Source: *WHO-UNICEF JMP Barbados Country File – Household - Inequalities*, based on 2012 MICS.
Note: Improved sanitation facilities are those designed to hygienically separate excreta from human contact and include flush/pour flush toilets connected to piped sewer systems, septic tanks, or pit latrines; pit latrines with slabs (including ventilated pit latrines), and composting toilets. Unimproved sanitation facilities include pit latrines without a slab or platform, hanging latrines or bucket latrines. Open defecation refers to disposal of human feces in fields, forests, bushes, open bodies of water, beaches, and other open spaces or with solid waste. Improved drinking water sources are those that have the potential to deliver safe water by nature of their design and construction, and include piped water, boreholes, or tube wells, protected dug wells, protected springs, rainwater, and packaged or delivered water. Unimproved drinking water sources are unprotected dug wells or unprotected springs. A basic hygiene service (SDG 1.4.1 & SDG 6.2.1) refers to the availability of a handwashing facility on premises with soap and water. Handwashing facilities may be fixed or mobile and include a sink with tap water, buckets with taps, tippy-taps, and jugs or basins designated for handwashing. Soap includes bar soap, liquid soap, powder detergent, and soapy water but does not include ash, soil, sand, or other handwashing agents. Limited hygiene service refers to a facility lacking water and/or soap. No facility means there is no handwashing facility on the household's premises. WHO/UNICEF JMP uses a customized wealth index to construct welfare quintiles, which excludes water, sanitation, and hygiene assets.

4. **Prior Action A3.** To further scale-up financing options for improved environmental management and climate action, the Borrower, has established the Barbados Environmental Sustainability Fund**.** The BESF is a financing mechanism for improved environmental management, aimed to mobilize significant financing for biodiversity conservation from international donors and the private sector. It intends to offer grants to non-profit organizations, community-based organizations, government agencies and the private sector to finance projects in the areas of biodiversity conservation and management, disaster risk management, climate change adaptation and mitigation, and green and blue economy initiatives, among others. The BESF aims to specifically support efforts in those areas that provide multiple benefits (e.g., improving livelihoods, enhancing the integrity of the country's natural capital, and tackling the most pressing climate change impacts). Without further elaboration of the criteria for the selection of projects and provision of grants, the establishment of the BESF at this point can be considered as having neutral poverty, social or distributional effects. In the medium to longer term, by strengthening biodiversity conservation and management, disaster risk management, climate change adaptation and mitigation, the BESF can have positive effects, by mitigating the impact of climate change on poverty[37] and benefiting the poor and vulnerable population who are disproportionately affected by climate change.

5. **Prior Action A4.** To increase climate resilience while tackling marine pollution from land sources, the Borrower, through the Cabinet, has approved a Marine Pollution Control (Discharge) Regulation. The Marine Pollution Control (Discharge) Regulations elaborate on the Marine Pollution Control Act and set out the reporting requirements, monitoring, notice, sampling, analysis methodology, and penalties, and includes provisions for establishing Compliance Agreements to increase control of and reduce pollution.

[37] *Bramka et al (2020)* estimate that between 32 and 132 million people will fall into poverty due to climate change.

The regulations also establish the obligation to dischargers of predefined sources (i.e., domestic wastewater) to register with the EPD; places limits on pollutants in accordance with the Cartagena Convention; and sets ambient quality standards. The regulations are expected to prevent and control marine pollution, primarily from terrestrial leakage, decreasing Barbados' marine and coastal ecosystem vulnerability to the effects of climate change. Reducing marine pollution is expected to improve the country's resilience and adaption to future climate events. Approval of the Marine Pollution Control (Discharge) Regulations is expected to have positive social effects in terms of control of fertilizers and pesticides. In the medium to longer term, it can have positive impacts by protecting income from fishing and tourism and lead to improved health incomes, especially when combined with participatory policies.[38]

6. **Prior Action A5.** To increase climate resilience of the agriculture sector by operationalizing the agriculture information management system, the Borrower, through the Cabinet, has approved a Climate Change and Agriculture Policy**.** The Climate Change and Agriculture Policy focuses on climate resilience and adaptation by promoting adoption of resilient technologies and practices. It places a strong emphasis on strengthening systems for collection, monitoring, and communication of agriculture data, which are critical to guide producer decision making and generate the detailed data needed to develop more robust agricultural insurance instruments. Approval of the Climate Change and Agriculture Policy is expected to have neutral poverty, social or distributional effects. In the longer term, adoption of the policy is expected to result in improved resilience and productivity of farms and agri-businesses and an increase in the intensity of technology adoption using climate smart or climate resilient practices. Increased resilience in the sector is also expected to contribute to the country's broader goal of maintaining domestic food production levels and ongoing green and resilient transformation of the sector. This can strengthen food security with a disproportionally positive effect on the poor and vulnerable. By increasing resilience and productivity of farmers, the prior action can also contribute to protect and expand employment in the agricultural sector.

7. **Prior Action B1.** To strengthen the Borrower's public institutions' resilience and business continuity after natural disasters by following agreed standards and processes, the Borrower, through the Cabinet, has approved a National Comprehensive Disaster Management Policy. **.** The objective of the NCDM Policy is to provide the strategic direction and supportive governance and accountability arrangements to guide the development and mainstreaming of CDM policies and programs for a safer, more resilient, and sustainable society. It further aims to guide the development and mainstreaming of CDM policies and programs for a resilient Barbados society, and ensure Barbados meets its regional and international disaster management obligations. It focuses on seven priority areas for action. These focus on governance, disaster mitigation, operational readiness, sector mainstreaming resilience building in sectors, enhancing community resilience for the most vulnerable with consideration of gender concerns, building the knowledge base, and organizing for recovery. The mainstreaming approach will integrate CDM in all national development plans and instruments, including poverty reduction strategies. Under each priority area, the NCDM Policy sets out a set of strategic interventions. The NCDM Policy, in particular through priority area 4 (Community resilience enhanced for the most vulnerable with gender concerns addressed at all stages and levels) lays the foundations for improving resilience of the poor and vulnerable to natural

[38] Participatory policies are the best channel for poverty alleviation in natural resource dependent communities, in this case coastal regions which are vulnerable to hazards that come with pollution *(Fiertz, Yozell, et al., 2022)*.

disasters, thereby having the potential to mitigate the impact of such disasters on poverty, and, depending on targeting of particular interventions, allowing to benefit the poor and vulnerable population disproportionately.

8. **Prior Action B2.** To scale-up private sector-financed renewable energy, the Borrower, through the Cabinet, has approved an Electricity Supply Act which aims to (i) enhance competition in the electricity market; and (ii) enable local companies' participation in renewable energy investment and financing. The New Electricity Supply Act will bring substantial changes to Barbados' electricity sector, including (i) clarification of the sector's institutional framework to streamline processes and oversight of RE development; (ii) enabling environment for the development of RE generation capacity and adequately sequenced phase down of the thermal power generation; and (iii) opening for further instruments and policies to incentivize financing of clean energy projects, with a specific emphasis on locally financed projects. The poverty, social or distributional effects of this prior action will depend on the concrete implementation of the Act and careful consideration will need to be given to potential regressive effects.[39] Targeted interventions, like exemptions for low-income households, smaller reductions for energy-intensive industries, and targeted financial programs can allow low-income households to profit from FIT.[40]

9. **Prior Action B3.** To identify and manage expenditures and activities to improve socio-economic and infrastructure resilience to climate change, the Borrower, through its Ministry of Finance, has issued a budget circular instructing its ministries, departments, and agencies to develop and adopt a robust climate adaptation and mitigation budget tagging methodology. The prior action will allow the GoB to capture and monitor information on the nature, quantity, and quality of public expenditures related to climate change mitigation and adaptation using a disaster-related budget tagging methodology. This is intended to allow the country to identify better and manage these expenditures and activities to improve its resilience to climate change and disasters. By contributing to Barbados' mainstreaming of the monitoring, planning, and budgeting of climate-related public expenditure this prior action is expected to improve the country's ability to prioritize climate-smart and disaster-resilient investments. While expected to have neutral direct poverty, social or distributional effects, by increasing the country's resilience to climate change and natural disasters, the prior action can contribute to mitigating the impact of climate change on poverty and benefiting the poor and vulnerable population who are disproportionately affected by climate change.

[39] The existing literature on distributional impacts of FIT mostly finds regressive effects: Lamb et al. (2020). What are the social outcomes of climate policies? A systematic map and review of the ex-post literature. Environmental Research Letters, 15(11), 113006.
[40] Lamb et al. (2020). What are the social outcomes of climate policies? A systematic map and review of the ex-post literature. Environmental Research Letters, 15(11), 113006.