PUBLIC
SIMULTANEOUS DISCLOSURE

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

BARBADOS

SUSTAINABLE DEVELOPMENT POLICY PROGRAM

(BA-L1048)

LOAN PROPOSAL

This document was prepared by the project team consisting of: Robin Rajack (HUD/CBA), Project Team Leader; Gerard Alleng (CSD/CCS), Alternate Team Leader; Yuri Chakalall (RND/CJA), Alternate Team Leader; Gregory Watson and Camilo Santa Pena (CSD/CSD); Daniela Zuloaga (VPS/ESG); Juan Durante (IFD/CMF); Sandra Tovar and Gloria Visconti (CSD/CCS); Onil Banerjee (CSD/RND); Veronica Prado (ENE/CBA); Gilroy Lewis (WSA/CTT); Laura Giles Alvarez, Janette Archer Headley and Kimberly Waithe (CCB/CBA); Mario Vinicio Rodriguez (FMP/CBA); Louis-Francois Chrétien (LEG/SGO); Gilberto Chona, Beatriz Gonzalez and Dianela Avila (CSD/HUD).

In accordance with the Access to Information Policy, this document is being released to the public and distributed to the Bank's Board of Executive Directors simultaneously. This document has not been approved by the Board. Should the Board approve the document with amendments, a revised version will be made available to the public, this superseding and replacing the original version.

CONTENTS

ANNEXES	
Annex I	Summary Development Effectiveness Matrix (DEM)
Annex II	Policy Matrix
Annex III	Results Matrix

REQUIRED ELECTRONIC LINKS (REL)	
REL#1	Policy Letter
REL#2	Means of Verification Matrix
REL#3	Monitoring and Evaluation Arrangements

OPTIONAL ELECTRONIC LINKS (OEL)	
OEL#1	Bibliographical References

ABBREVIATIONS	
AMCECC	Adaptation Measures to Counteract the Effects of Climate Change
BAPE	Barbados Association of Professional Engineers
BWA	Barbados Water Authority
BERT	Barbados Economic Recovery and Transformation Program
CARICOM	Caribbean Community
CCA	Climate Change Adaptation
CCRIF	Caribbean Catastrophe Risk Insurance Facility
CDB	Caribbean Development Bank
CDEMA	Caribbean Disaster Emergency Management Agency
CDM	Comprehensive Disaster Management
COP-21 PARIS	Conference of the Parties – 21 Paris Agreement
CRF	Corporate Results Framework
CWP	Country Work Programme
CZM	Coastal Zone Management
CZMU	Coastal Zone Management Unit
DRM	Disaster Risk Management
EFF	Extended Fund Facility
ELPA	Electric Light and Power Act
EMAC	Emergency Management Advisory Council
EPD	Environmental Protection Department
ESCI	Emerging and Sustainable Cities Initiative
ESMR	Environmental and Social Management Report
ESS	Environmental and Social Strategy
GBA	Greater Bridgetown Area
GDP	Gross Domestic Product
GHG	Greenhouses Gases
ICZM	Integrated Coastal Zone Management
ICZMP	Integrated Coastal Zone Management Plan
IDB	Inter-American Development Bank
IDBG	Inter-American Development Bank Group
iGOPP	Institute for Governance of Private and Public Organizations
IMF	International Monetary Fund
ISWMP	Integrated Solid Waste Management Programme
MDB	Multilateral Development Banks
MENB	Ministry of Environment and National Beautification
MEWR	Ministry of Energy and Water Resources

ABBREVIATIONS	
MFEI	Ministry of Finance, Economic Affairs and Investment
MMABE	Ministry of Maritime Affairs and the Blue Economy
NCRIPP	National Coastal Risk Information Planning Platform
NCST	National Council of Science and Technology
NEMS	National Emergency Management System
OAS	Organization of American States
OVE	Office of Evaluation and Oversight
P&D	Planning and Development
PBP	Policy Based Programmatic Loan
PCR	Project Completion Report
PDP	Physical Development Plan
PIU	Public Investment Unit
PMCU	Project Management Coordinating Unit
PMO	Prime Minister's Office
PSSEP	Public Sector Smart Energy Program
POD	Proposal for Operation Development
R2RP	Roofs to Reefs Program
RDC	Rural Development Commission
RE	Renewable Energy
SBRC	Sustainable Barbados Recycling Centre
SDG	Sustainable Development Goals
SOE	State-owned enterprises
SM	Stormwater Management
SPF	Safeguard Policy Filter
SSA	Sanitation Services Authority
TCDPO	Town and Country Development Planning Office
UDC	Urban Development Commission
UNESCO	United Nations Educational, Scientific and Cultural Organization

PROJECT SUMMARY
BARBADOS
SUSTAINABLE DEVELOPMENT POLICY PROGRAM
(BA-L1048)

<table>
<tr><th colspan="5">Financial Terms and Conditions</th></tr>
<tr><td colspan="3">Borrower</td><td colspan="2">Flexible Financing Facility [a]</td></tr>
<tr><td colspan="3">Government of Barbados</td><td>Amortization Period:</td><td>20 years</td></tr>
<tr><td colspan="3">Executing Agency</td><td>Disbursement Period:</td><td>1 year</td></tr>
<tr><td colspan="3">Ministry of Finance, Economic Affairs and Investment (MFEI)</td><td>Grace Period:</td><td>5.5 years [b]</td></tr>
<tr><td>Source</td><td>Amount (US$)</td><td>%</td><td>Interest rate:</td><td>LIBOR Based</td></tr>
<tr><td rowspan="2">IDB (Ordinary Capital):</td><td rowspan="2">80,000,000</td><td rowspan="2">100</td><td>Credit Fee:</td><td>[c]</td></tr>
<tr><td>Inspection and supervision fee:</td><td>[c]</td></tr>
<tr><td rowspan="2">Total:</td><td rowspan="2">80,000,000</td><td rowspan="2">100</td><td>Weighted Average Life (WAL):</td><td>12.75 years</td></tr>
<tr><td>Currency of Approval:</td><td>Dollars of the United States of America</td></tr>
<tr><th colspan="5">Project at a Glance</th></tr>
<tr><td colspan="5">Project Objective/Description: The objective of the programmatic policy-based loan series is to improve the country's governance for sustainability through the strengthening and modernization of the regulatory framework. The specific objectives of the first policy-based programmatic loan (PBP) are to advance the ongoing regulatory reform efforts to improve: (i) the efficiency and sustainability of spatial planning, development control, and water resource management; (ii) natural asset management; and (iii) disaster risk management and resilience.

To meet this objective, the Bank has structured a programmatic policy-based loan series consisting of three technically related and financially/contractually independent operations, as per document Policy-Based Loans: Guidelines for Preparation and Implementation (CS-3633-2).</td></tr>
<tr><td colspan="5">Special Contractual Condition prior to single loan disbursement of the PBP: The single disbursement of loan resources will be subject to the Borrower's compliance with the policy conditions of the first operation summarized in the Policy Matrix (Annex II), and the Policy Letter, as well as the compliance with the conditions contained in the Loan Contract (¶3.2)</td></tr>
<tr><td colspan="5">Exceptions to Bank Policies: None.</td></tr>
<tr><th colspan="5">Strategic Alignment</th></tr>
<tr><td colspan="2">Challenges[d]:</td><td>SI ☑</td><td>PI ☑</td><td>EI ☐</td></tr>
<tr><td colspan="2">Cross-Cutting Themes[e]:</td><td>GD ☐</td><td>CC ☑</td><td>IC ☑</td></tr>
</table>

[a] Under the Flexible Financing Facility (FN-655-1), the borrower has the option to request modifications to the amortization schedule, as well as currency, interest rate and commodity conversions. In considering such requests, the Bank will take into account operational and risk management considerations.

[b] Under the flexible repayment options of the Flexible Financing Facility (FFF), changes in the grace period are possible as long as the Original Weighted Average Life (WAL) and the last payment date, as documented in the loan agreement, are not exceeded.

[c] The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors during its review of the Bank's lending charges, in accordance with the relevant policies.

[d] SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

[e] GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. PROJECT DESCRIPTION AND RESULTS MONITORING

A. Background, problem addressed, and justification

1.1 **Macroeconomic context.** Barbados has been facing severe macroeconomic challenges, which have led to an ambitious fiscal reform program. Slowing economic growth, which declined from an average of 1.4% (2000–2009) to 0.0% (2010–2018), coupled with recurring fiscal deficits, resulted in a quick escalation of debt. By FY2017/18, the debt-to-GDP ratio reached 158.3% of GDP. In response, the Barbados Economic Recovery and Transformation Program (BERT) was launched by the Government in August 2018. BERT sets a debt-to-GDP target ratio of 60% of GDP by 2033 and became the underlying framework for a US$290 million four-year International Monetary Fund (IMF) Extended Fund Facility (EFF) program, signed in October 2018. Following the first year of implementation of the reforms, including the completion of the debt exchange, gross public sector debt declined to 125.6% in FY2018/19, and is expected to further reduce to 115.9% in FY2019/20 [9]. The fiscal balance has improved from -4.3% of GDP in FY2017/18 to -0.3% of GDP in FY2018/19, whereas the primary fiscal balance increased from 3.3% to 3.5% of GDP during the same period. The Government is undergoing a comprehensive reform, which will span at least the next 4 years. This operation will thus contribute to these efforts, offering multiyear financing that supports a gradual regulatory reform process.

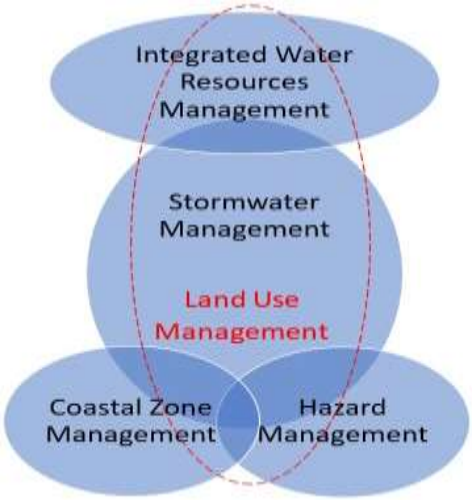
1.2 **The importance of sustainable development in Barbados.** Sustainability implies adequately considering medium-term and long-term economic and financial, environmental, social, and institutional impacts and feasibility when planning, designing, constructing, operating, and decommissioning systems and investments.[1] In Barbados, sustainability is particularly important for three major reasons. Firstly, most of the productive assets and attractive prospective development opportunities are coastal in location,[2] requiring a careful approach to coastal zone land management on one hand and the assessing and managing environmental risks on the other. Secondly, the island is a water-scarce territory with most of its potable water supply derived from groundwater, requiring strategic management of stormwater and groundwater contamination risks associated with human activity. Thirdly, the country is exposed, as other Caribbean countries, to increasing natural hazard and climate change risks, requiring deliberate attention to resilience and disaster risk policies to safeguard lives, investments, and the economy (see Figure 1). As underscored in the IMF-EFF October 2018 report, risk-based coastal planning, long-term shoreline planning and beach enhancement, including the promotion of hazard-resilient coastal infrastructure will be important.

---

1 Adapted from the definition of Sustainable Infrastructure in reference [7].

2 Specifically, the contribution of Travel and Tourism to GDP was, 40.6% of GDP in 2017 when considering indirect effects.

Figure 1. Sustainable Development Intersections in Barbados



Source: Adaptation Measures to Counter the Effects of Climate Change with a Focus on Water Resource Management and Flood Resilience (AMCECC), Comprehensive Final Report. Baird Associates, 2017

1. Program Strategy

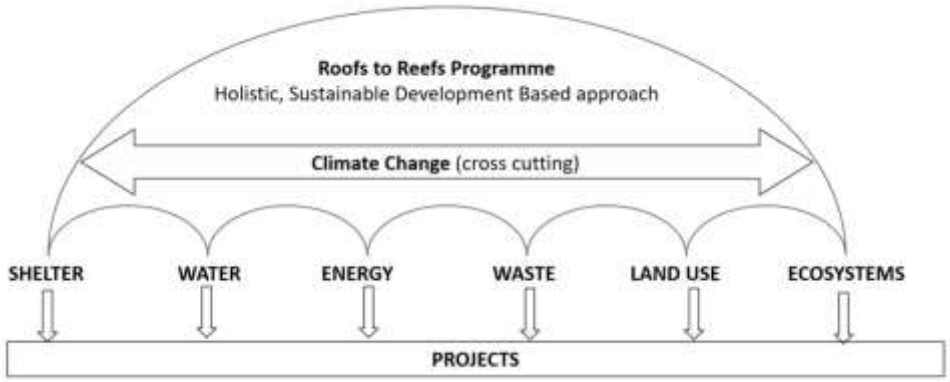
1.3 **The Government of Barbados policies aim at transitioning the economy to a more sustainable path.** Barbados has been actively pursuing the transition to a more sustainable economic path over the years, as evidenced by emblematic programs on coastal zone management, solid waste management, and sustainable energy. The Barbados Sustainable Development Policy (2004) had set a robust goal "to ensure the optimization of the quality of life for every person by ensuring that economic growth and development does not occur to the detriment of our ecological capital." The intent, areas of focus, policy objectives and achievement of the outcome of this overall goal are still relevant, are being actively promoted and are the basis of this operation.

1.4 The current stage of transitioning to a more sustainable path, is being operationalized through the Government's flagship Roofs to Reefs Program (R2RP), which is a holistic, integrated, national initiative based on the principles of sustainable development and climate change resilience. There are two (2) main elements of the program: (i) investments in increasing resilience and sustainability in the built environment and coastal zone, water resource management, and other natural capital systems, as well as measures to improve the country's ability to recover quickly post-disaster; and (ii) a shift to 100% renewable energy and carbon neutrality by 2030 – an agenda that is being actively supported by the Bank outside of this Policy Based Programme (PBP) operation. The R2RP, whose Concept Note was formally approved by the Cabinet in December 2019, provides an overarching framework to address the country's major challenges in key sectors as a response to the impacts of climate change.

1.5 The R2RP, for example, aims to improve the resilience of the housing stock and access to water and sanitation; eradicate pit toilets; use solar and other green energy options to reduce dependence on fossil fuels and direct line electricity transmission; improve water quality; and reduce the volumes and impacts of waste

(both solid and liquid). This will lead to improvements in living conditions as well as in the terrestrial and marine environments, including gullies and coral reefs (see Figure 2). To create an enabling environment for the accomplishment of the R2RP agenda, a range of regulatory provisions need to either be created or amended. This PBP operation focuses on the most critical parts of that reform agenda.

Figure 2. Overview of the Roofs to Reefs Programme



Source: Government of Barbados, 2020

1.6 In this context, ensuring the sustainability of spatial development patterns, particularly in coastal areas, and the appropriate use of the natural and built environments is of strategic importance for increasing the country's resilience. From a public policy perspective, the regulatory framework needs to be strengthened in three critical areas outside of the energy sector that is being addressed elsewhere, for the success of the R2RP: (i) spatial planning, development control, and water-resource management, with an emphasis on land use management, stormwater management, and groundwater zoning; (ii) natural asset management with an emphasis on coastal zone and natural capital management, and solid waste management; and (iii) disaster risk management and resilience, with an emphasis on disaster risk management programming, disaster risk financing and financial protection, disaster risk identification and assessment, and increasing the resilience in the housing stock.

2. Sustainability in the Context of Spatial Planning, Development Control and Water Resource Management

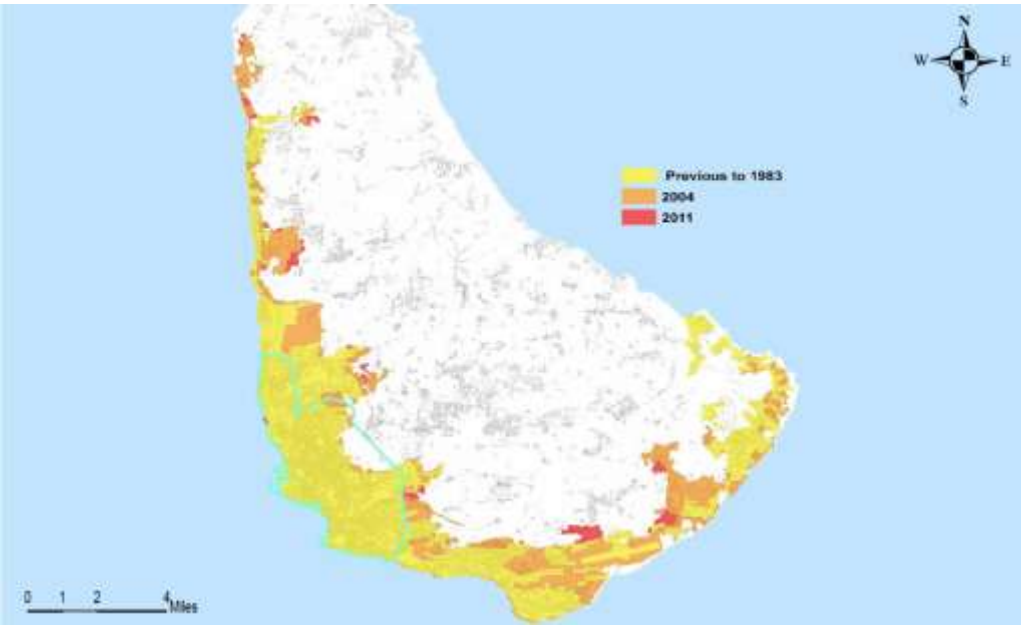
(a) Land use management and development control

1.7 A dated regulatory framework for spatial planning and development control has hindered the efficiency and sustainability of built development[3] and investments. Between 1983 and 2011, inefficient spatial expansion saw the density of Barbados' Urban Corridor decrease by 22% [6], with an expansion of built development into highly sensitive groundwater zones, particularly on the west coast (see Figure 3). This trend is associated with a hollowing-out of the Greater Bridgetown Area (GBA) -11% of dwelling units in St. Michael (the parish which contains Bridgetown)

[3] Commonly understood to include the construction of man-made features such as buildings, infrastructure, and public facilities that provide the setting for human activity.

were vacant in 2011, compared to 7% in 2000 [2,3]. In 2013, the per capita emissions balance (emissions minus removals) in the GBA was 5.5 tons of CO2e -relatively high by Latin America and the Caribbean standards [5]. The transportation sector contributed 33% of Greenhouses Gases (GHG) emissions due in part to the high reliance on personal vehicles– another feature of the inefficient spatial expansion. Under fiscal pressure, average infrastructure investment (gross fixed capital formation) declined from 18.4% of GDP (2005-2011) to 15.9% (2012-2018) [10], contributing to an aging infrastructure stock that hampers economic growth.

Figure 3. Evolution of the built footprint within the Urban Corridor, 1983-2011



Source: ESCI: Urban Growth Study for the Greater Bridgetown Area

1.8 Compared to a trend-scenario,[4] a smart-growth scenario associated with better spatial planning, densification of existing built-up areas, and more strategic development control, can cut total emissions of the GBA by 40% [5] by 2050 and result in a threefold reduction per capita expenditure on infrastructure [6]– a significant saving that could contribute to fiscal balance targets under the EFF. The regulatory framework, including the Town and Country Planning Act is not perceived as facilitating investments that could bolster economic growth and sustainable development. This is partly evidenced by Barbados' ranking of 154th out of 190 countries for Dealing with Construction Permitting [18], largely on account of the slowness of the approval process.

1.9 The current Town and Country Planning legislation was enacted in 1965 and no longer serves the needs of Barbados. The current system is neither efficient nor transparent and is seen as an impediment to the investment urgently needed to transform the island's economy and bring about sustainable economic recovery. It

[4] The trend scenario is based on continued physical expansion and decreases in population density according to historic rates.

lacks the policies and tools to protect the islands fragile environment and cultural heritage, which are vital assets. Following a public consultative process that included the preparation of a Green Paper, a new Planning and Development Bill was drafted. This legislation was passed by both houses of Parliament in January of 2019 but awaits proclamation to take the force of law. Since its passage in the Parliament, the Town and Country Development Planning Office (TCDPO) has been consulting with major government stakeholders about the impact that this legislation will have on their operations. Following the Act's proclamation, regulations to more precisely guide its application in some areas will be developed.

1.10 The Act aims to become more facilitative of sustainable growth and investment by changing the orientation and efficiency of the planning process; enhancing transparency, accountability, predictability, and public participation in development planning; and strengthening the ways in which development impacts, particularly environmental impacts, are considered.

1.11 **The orientation and efficiency of the planning process.** The most fundamental shift in the new legislation is a change in the orientation of the role of the TCDPO from primarily being a regulator to becoming a facilitator of sustainable development. In particular, the Act introduces the concept of "provisional refusal", where clear guidance will be given on the modifications to a refused application that would allow it to be approved. It also introduces the practice of consultation before applying for planning permission, allowing a prospective developer to have a formal consultation with the regulators about the likely acceptability of his proposed investment, without the higher costs associated with a full application. In addition, under the Act, all planning permission decisions shall give principal consideration and be guided by the approved Physical Development Plan (PDP). This too, creates less uncertainty for prospective developers and investors.

1.12 Under the new legislation, decisions to deny or require conditions to a planning application must be given in short and specific time frames. In addition, the technology-based E-Planning System introduced in February 2019 to facilitate more efficient consultation with regulatory stakeholders in the public sector, is to be expanded to allow for online submission of applications for planning permission. This will further reduce transaction costs.

1.13 **Transparency, accountability, predictability, and public participation in development planning.** Good governance is critical to ensure trust and confidence in the planning process. In a small and interconnected society like Barbados, it is important to guard against the influence exercised by proximity and the potential for unlawful practices. Governance arrangements should be put in place to reduce the potential for undue influence or illegal activities and require high standards of integrity including declarations of interest. Under the new Planning and Development legislation, decisions to deny or require conditions to a planning application must be explained to the applicant, can be challenged, and must pass the test of equal and fair treatment to all. Planning decisions would be made available to all on-line. Members of the public would be able to input into the decision-making process. Public registers would be accessible in hard copy and online.

1.14 **Environmental impacts.** The impact of planning decisions will now be explicitly guided by a revised PDP that promotes sustainable development, including protection of the natural environment. Decisions will be guided by the principles of sustainable development ensuring long-term environmental, economic and community health and wellbeing. Under the new legislation, the requirements for environmental impact screening and their applicability will be explicit. Decisions on development applications will be made by a Planning and Development Board which will include among others, the Director of the Coastal Zone Management Unit (CZMU), the Director of the Department responsible for Environmental Protection, and a member appointed by the line minister on the recommendation of the Barbados National Trust. The empowerment of these agencies in the development application process, and the fact that some of them, such as the CZMU, are now equipped to use technological platforms for risk-screening (¶1.60), significantly enhances the prospect for mitigating adverse environmental impacts.

1.15 **The Physical Development Plan**. The PDP provides the policy framework to guide development. The current PDP (amended in 2003) is in the process of being reviewed, with the revised Plan awaiting further formal consultation and approval. The PDP's impact has been limited by the fact that subsequent attempts at updating it have not been formally approved, thereby creating some uncertainty about its authority.

1.16 The PDP has been in the process of amendment for the last three (3) years. The updated Plan is intended to provide a vision for sustainable growth and development of the country by setting out policies to guide relationships among land uses, built form, mobility, community facilities and physical infrastructure. It is also intended to be a framework in Barbados to facilitate and guide investment, both public and private, to the year 2035.

1.17 The updated PDP is intended to harmonize the development planning process with many new realities since the last formal update in 2003. These changes include the Government of Barbados' commitments to sustainability and climate change as well as resilience under various international accords, including HABITAT-III and the New Urban Agenda, the COP 21 Paris Agreement, and the Sustainable Development Goals (SDG). Hence a focus in the PDP update will be on growth management and land use, protecting natural heritage systems, conserving water resources, and bolstering disaster risk reduction. The PDP update will also take into consideration the UNESCO World Heritage designation of historic Bridgetown and its garrison, as well as an emerging National Park System.

1.18 In the last year, a new emphasis of the PDP update was on the urban revitalization of the GBA, especially on the large, picturesque bay that defines the GBA, Carlisle Bay. One of the primary reasons for focusing new investment development activities in this area is the opportunity to maximize the utility offered by existing infrastructure in the GBA, while diverting development trajectories away from highly sensitive groundwater protection zones. Urban Revitalization offers a strategy to accommodate population and economic activity without the need for new land.

1.19 The proposed PDP updates are on the verge of a formal public consultation, after which the changes from the 2003 version would be formalized, and an amended

PDP would be approved by the Parliament. This action, together with the enhanced recognition of the PDP in the new Planning and Development (P&D) Act, would give the Plan much more weight in guiding Barbados' development towards a more sustainable path.

1.20 **Urban Mobility Challenges.** The GBA has significant urban mobility challenges, as revealed by the Bank's Emerging and Sustainable Cities Initiative (ESCI) diagnostic studies. Road congestion is so severe that it has become a limitation on people's ability to conduct business and go about their daily lives. GHG emissions from the transportation sector are the highest of any sector. Yet the infrastructure and services are not in place to provide a viable alternative to the private automobile. Transforming the GBA mobility system is a significant undertaking that requires a broad range of actions, strategies and policies.

1.21 A Sustainable Urban Mobility Plan for the GBA and the Urban Corridor is needed to coordinate the many components of a sustainable transportation system. Key components of such a Plan may include: (i) upgrading the public transport system to better compete with private automobiles - modernizing the fleet, rationalizing and integrating the bus, and private minibus terminals in Central Bridgetown, as well as introducing tracking technologies and electronic payment methods; (ii) upgrading active transportation infrastructure to increase the mode share of walking and cycling and protect vulnerable road users - including bicycle lanes, a fully connected sidewalk network, increasing the coverage of boardwalks and the accessibility of active transportation infrastructure for persons with disabilities; (iii) introducing parking management measures such as restrictions on street parking, metered parking and signage to promote better usage of existing facilities; (iv) introducing high-occupancy vehicle lanes to improve the efficiency of existing mobility infrastructure and incentivize carpooling and use of public transport; (v) implementing a park and ride system to reduce cars entering Bridgetown; and (vi) improving travel data collection methods to ensure a solid basis for policy and infrastructure long-term decisions.

1.22 **Overall development impact.** The net effect of this reformed regulatory framework for land use planning and development control, comprising an updated law, revised PDP, and Sustainable Mobility Plan, is two-fold. Firstly, by reducing uncertainty and transaction costs associated with an application for planning permission, it will likely encourage investment. Prospective developers will know the development priorities of the Government; will have a clear understanding of the types of development that are permitted in specific areas; will receive interim-feedback on their proposals; will have their applications determined in a predictable timeframe; and will be encouraged by the prospect of fair treatment based on increased transparency. Secondly, given the increased emphasis in the new and proposed regulatory instruments on mitigating potentially adverse environmental impacts, the sustainability of investment outcomes is likely to be enhanced. By restricting new development in environmentally sensitive zones and focusing on the revitalization of the GBA through the PDP and by application of environmental impact assessment and empowerment of agencies with a strong environmental mandate under the new law, this new framework will likely incentivize a more efficient use of land, diverting development pressure away from more environmentally sensitive areas.

(b) Stormwater Management and Groundwater Zoning

1.23 The Barbados Water Authority (BWA) extracts water from aquifers through 22 wells, nine (9) boreholes and two (2) springs across the island; however, regulation to divert developmental pressures from sensitive water protection zones that are critical to the recharge of those aquifers remains weak. This challenge is exacerbated by heavy rainfall events that regularly lead to flash flooding.

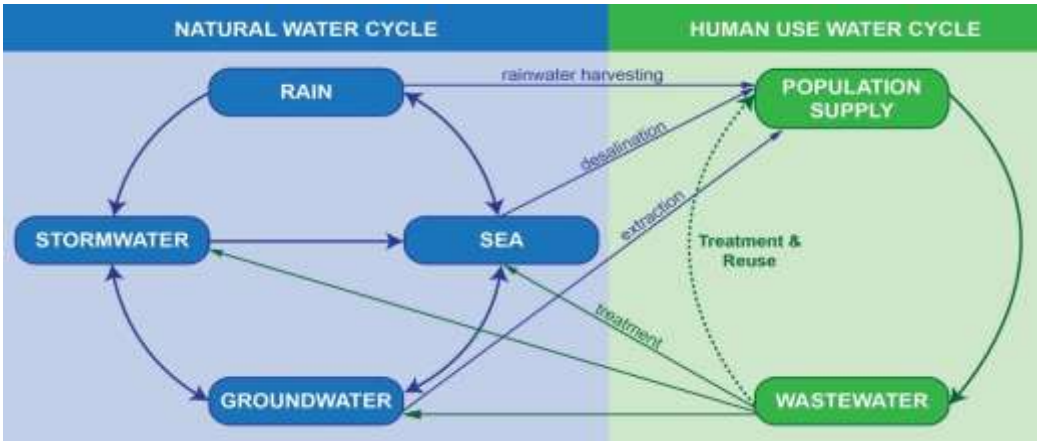
1.24 Flood waters are a major concern for municipal wastewater systems. Firstly, there is the potential intrusion of the flood waters into the wastewater systems, which may overwhelm the systems, causing overflow and damage. Secondly, inundation of wastewater systems may result in direct mixing of wastewater with stormwater, thereby contaminating the stormwater. This has potential knock-on effects on the quality of the receiving waters (groundwater and coastal nearshore), as well as associated environmental and public health concerns [1]. Contamination is a growing concern given the country's potable water scarcity.

1.25 Water quality is a critical consideration when addressing stormwater usage, as this can have direct impacts on human health and on the health of terrestrial and aquatic ecosystems. One of the major concerns is the presence of nutrients in surface water and groundwater throughout the island. Much of that groundwater makes its way to the nearshore environment. Consequently, coral reefs and other coastal aquatic life are under stress due to nutrient loading. A major contributor to the nutrient loading is the discharge of residential and commercial sewage wastes directly into the ground (see Figure 4).

1.26 These risks may become more severe in the future since Caribbean climate change models have projected that mean annual precipitation could decrease by a maximum of 39% and mean annual air temperature could increase between 1.4 to 3.2 degrees Celsius. A reduction in annual rainfall could lead to increased concentrations of potential contaminants in groundwater. At the same time, increased rainfall intensity may exacerbate flooding risks. Finally, sea level rise will likely cause coastal erosion and flooding, impacting the beaches that protect the coastal regions of Barbados, and which are a vital asset to the economy. These factors emphasize the need for stronger regulation on stormwater management and groundwater zoning.

1.27 The Stormwater Management Plan Update is based on a detailed study of stormwater issues and drainage infrastructure on the west coast of Barbados, in the vicinity of Holetown-Trents. Although various upper watershed storage mitigation interventions for stormwater were identified, the study found that many of the existing drainage structures on the west coast are severely undersized and are major contributors to the flooding problems. A range of alternatives for mitigating flood risk were evaluated including flood flow conveyance improvements, Best Management Practices and Low-Impact Development approaches. Increasing attention is to be placed on the use of non-structural Best Management Practices and Low-Impact Development approaches to assist with adaptation to future climate change. Outside of this operation, the Government has embarked on a program of utilizing nature-based solutions along waterways (e.g. use of grass swales) in Holetown-Trents for flood management and drainage control, as part of a larger program of adaptative investments.

Figure 4. Water Cycle: Natural versus Human Use



Source: AMCECC, Comprehensive Final Report. Baird Associates, 2017

1.28 In the past, Barbados had implemented a groundwater protection system based on the establishment of five zones, with heavy restrictions in Zone 1 around public supply wells and fewer restrictions in zones further away. This was designed to reduce biological contamination of groundwater caused by uncontrolled and unregulated development within water recharge areas. It has now been recognized that this system needs updating to include protection of coastal waters; protection from chemical contamination, particularly nitrates (NO_3-N) that in some instance exceed the US-EPA Standard of 10 mg/L; and to take cognizance of the need to balance the physical space required to protect the groundwater recharge areas and the demands of development.

1.29 On this basis, a new groundwater zoning system and Stormwater Management Plan, based on the principles of integrated water resources management, is being proposed that, among other measures, will require legislation and enforcement of regulations that restrict land-use activities and actively promote the use of Best Management Practices. In the medium-term, stronger regulation on water reuse; rainwater harvesting; solid waste management; wastewater collection and treatment; and water recharge areas is needed. Beyond the scope of this PBP, additional, complementary actions which the Government is contemplating include amendments to the legislations such as the Pesticides Control Act (Cap. 395) and the Storage of Petroleum Act (1882-2).

1.30 Regarding wastewater management, the BWA currently owns and operates two (2) municipal wastewater treatment systems covering parts of Bridgetown and the South Coast, both of which discharge the treated wastewater through two (2) marine outfalls. Between 2016 and 2018, the South Coast Sewerage System experienced some sewage overflows onto the streets on sections of the South Coast resulting in public health threats, and negative publicity, which if it reoccurs, can also adversely affect tourism and the livelihoods of persons in that sector.

1.31 The Government of Barbados has therefore embarked on several measures aimed at improving wastewater management and augmenting its water resources by reusing the reclaimed water from wastewater for groundwater recharge, irrigation and other uses. These measures include the approval of the Water Reuse Policy in April 2019, on-going work on preparing and enacting a Water Reuse Act,

approval of upgrading of the two (2) existing sewage treatment plants to tertiary level, and construction of a reclaimed water distribution network.

1.32 **Progression of Reforms.** While the Planning and Development Act will be proclaimed under PBP I, its impact will be deepened by the passage of regulations by the Parliament under PBP II (expected 2021). In addition, the efficiency and transparency gains initiated under the new law will be enhanced by the expansion of the technological E-Planning system to facilitate the electronic receipt of applications for planning permission, under PBP II. Similarly, while the draft revision to the PDP will benefit both in terms of content and legitimacy by the formal consultation process initiated under PBP I, its material impact in guiding development processes, in a consistent manner and with the weight of law, will be achieved with its formal passage in the Parliament under PBP II. Finally, while the approved PDP will implicitly embody Government's policy on sustainable urban mobility, in part through its encouragement of urban regeneration in the GBA, the approval of a Sustainable Urban Mobility Plan under PBP III (expected 2022), will translate that policy into specific measures and sequencing to accomplish a coherent set of outcomes.

1.33 On the water resource management front, a similar progression occurs across the PBP series. The Green Paper on Water Protection and Land Use Zoning will benefit from Cabinet approval in PBP I but following consultations and parliamentary approval it will gain the weight of policy as a White Paper under PBP II. Under PBP III, its key regulatory provisions including the formal adoption of the new Groundwater Zones and the enforcement responsibilities and authorities of the BWA and Environmental Protection Department (EPD) will be consolidated in the amendments to the Barbados Water Authority Act, thereby creating stronger incentives for compliance. Similarly, overall impact of the approval of the Stormwater Management Plan under PBP I will be strengthened by approval of guidelines and protocols for rainwater harvesting under PBP II, since more effective rainwater harvesting will decrease both the volume and rate of runoff of stormwater. The integrated approach to water resource management will come full circle with the tabling of the Water Reuse Act in Parliament under PBP III, to be preceded by approval of drafting instructions for that legislation in PBP II.

Table 1. Sustainability in the Context of Spatial Planning, Development Control and Water Resource Management – Progression of Reforms

Pre-PBP Reforms ⇒	PBP I ⇒	PBP II ⇒	PBP III
	Consultative processes and launch of reforms	**Consolidation of policies, plans, and regulations; Expansion of technological applications; Deepening of assessments**	**Parliamentary tabling of new laws or amendments; Establishment of protocols guidelines/models; Launch of supporting plans**
Green Paper on Planning Law Reform; Launch of E-Planning	Proclamation of Planning and Development (P&D) Act	Regulations for P&D Act; Expanded use of E-Planning System	

Pre-PBP Reforms	PBP I	PBP II	PBP III
Scoping of PDP update	Consultation on PDP	Revised PDP	Sustainable Urban Mobility Plan
	Green Paper on water protection and zoning	White Paper on water protection and zoning	Amendments to the Barbados Water Authority Act
Diagnostic study on Stormwater Management	Stormwater Management (SW) Plan updated	Guidelines and protocols for SW and rainwater harvesting	
Water Reuse Policy		Water Reuse Bill	Water Reuse Act

3. Sustainability in the Context of Natural Capital Management

(a) Coastal Zone and Natural Capital Management

1.34 Environmental sustainability is further compromised by regulatory gaps pertaining to the use of natural assets, especially in the coastal and marine environments. In the coastal and marine space, an ongoing assessment[5] finds inadequate regulatory screening of new investment proposals and deficient management of new threats: e.g. coastal inundation by excessive Sargassum blooms.[6] Barring more investment in coastal resilience, 18% of commercial and 4% of residential buildings, respectively as a percentage of GBA total building value are vulnerable to inundation in a 1 in 100-year storm surge flood event.[7] An improved regulatory framework could mainstream such investments that have been found to boost medium-term economic growth [4].

1.35 Coastal Zone Management (CZM) continues to be a key component of the sustainability agenda of Barbados given the critical importance of coastal assets and services to the economic, social and environmental foundation of the country. This role has become of even greater importance given the increasing relationship with measures to address climate change in the coastal and marine environment, both in terms of adaptation and mitigation, and the growth of a sustainable ocean or blue economy. Sustainability and growth of many facets of the blue economy, such as the fishing and sea-food industry, waterfront retail and service activities, yachting and watersports, and marine life and reef exploration, would all benefit from better CZM regulation, including formulation of a policy in the short-term, and adoption of a CZM Plan and passage of a CZM Act in the medium-term. It will also benefit from a strong adaptation program to climate change that focuses on improving the resilience of water resources, that implements measures to reduce the impacts or intensity of flooding on coastal areas and improves the quality of water entering the nearshore environment [1].

---

5 See draft Institute for Governance of Private and Public Organizations (iGOPP). Report developed by the IDB which measures whether a country has adequate legal, institutional, and budgetary conditions to implement a public DRM policy.

6 Sargassum is a brown, floating, marine macro-algae that forms dense floating masses in tropical Atlantic waters. Recent blooms are linked to increased ocean warming due to climate change and nutrient loading (eutrophication) of coastal waters.

7 Results from a query of the National Coastal Risk Information Planning Platform (2019), in communication provided by the Barbados Coastal Zone Management Unit (CZMU).

1.36 There has been substantial effort in developing the policy framework for CZM in Barbados over the years, which has become a best practice example internationally. The country has systematically improved its institutional capacity to manage the activities of the coastal zone, evolving from the creation of a CZM Unit and an Integrated CZM Program to the mainstreaming of disaster risk management and climate change adaptation considerations into CZM programing. This CZM Program must continue to evolve as new risks emerge and as anticipated risks increase in intensity, heightening the vulnerability of coastal resources. The regulatory framework must be upgraded to better manage such circumstances or the sustainability of coastal resources will be compromised.

1.37 **Modernization of the Integrated Coastal Zone Management (ICZM) Policy.** The predecessor ICZM Policy (1998) was not disaster and/or climate change risk-informed and relied on inputs from different (now dated) baseline biophysical and coastal oceanographic survey methodologies as well as diverse coastal hydrodynamic models. Previously, different models were developed in different time periods and respectively used to inform policy development for the more developed/urbanized south and west coasts and for the lesser developed north, east and south east coasts.

1.38 The proposed “risk resilient” ICZM Policy (2020-2030) is based on more contemporary state of the art coastal hydrodynamic modeling and it is supported by a foundation of more precise Lidar bathymetry, that has subsequently been collected for all coasts. In the prior policy for example, coastal development setbacks along cliffed shorelines for the north, east and south east coasts, were specified on the “generalized” basis of maintaining a consistent/universal development buffer from the most landward extent of cliff undercut or cliff line retreat. The current/updated policy determines setback on a more precisely geo-positioned and scientific evidential basis where factors such as rock strength, cliff geology and cliff integrity/risk of failure determine the setback with respect to coastal planning objectives, built development and public safety, by locale. The latter approach maximizes the use of available land and allows for a more flexible approach. In keeping with international best practice, setbacks for built coastal development are now better risk-informed based on cliff undercut mapping from drone surveys, and more precise geological surveys of substrate composition and integrity.

1.39 Compared to its predecessor ICZM policy (1998) the new ICZM policy (2020-2030) includes a performance indicator framework with timelines for monitoring and evaluation and a reporting mechanism. Additionally, the inclusion of Disaster Risk Management (DRM) and Climate Change Adaptation (CCA) now allows for future loss reduction, loss reduction economic targets and the concept of resilience to be incorporated in the new policy, which was hitherto un-considered. Inclusion as policy objectives, therefore, commensurately compels the development of relevant operational approaches and affiliated implementation actions, moving forward.

1.40 Further to the Cabinet approval of a new “risk-resilient” ICZM Policy (2020-2030) in the first trimester of 2020; the Government is embarking on the approval of an updated (better climate and geo-hazard risk informed) Integrated Coastal Zone Management Plan (ICZMP) by later 2020 and the proclamation of a new coastal zone management Act by 2021. The updated ICZMP is currently under

development with the mandatory public consultations expected to commence in the second quarter of 2020. In addition, the updated ICZMP is expected to improve future national ICZM planning through local adaptation/customization of international ICZM knowledge gains and will treat to the development of specific management guidance for emergent and escalating issues including but not restricted to: (i) deluges with Sargassum; (ii) coastal resources exploration and exploitation; (iii) coastal habitat/ecosystem restoration; (iv) conservation management; (v) beach management; (vi) construction and maintenance of coastal structures; (vii) DRM and CCA; (viii) public awareness; and (ix) research.

1.41 The ICZM reform efforts previously identified (¶1.34 through ¶1.40) are expected to be complemented by the development and approval of plans to incorporate the quantitative value of natural capital and the ecosystem services they provide into contemporary national public budgeting and accounting systems along with an operational plan on how the Government intends to materialize its Blue Economy ambition.

1.42 To advance the growth and development of a Blue Economy, a critical starting point is a valuation of ecosystems (natural capital) and other services provided by the country's terrestrial and maritime space. The country has made some progress on this front through its CZM Unit with respect to the development of a methodology for valuing beaches and reefs. This methodology would benefit from a professional peer review that would allow it to be refined according to international norms. A subsequent step that is needed would be the development of an Action Plan for simple, cost-effective coastal/marine resource valuation and approaches on how best such valuations can be incorporated into national assets accounting thereby influencing public and private policies and decision-making.

1.43 Beyond this, the Government may explore the scope for private impact investing on blue carbon bonds and biodiversity banks, but for this and other tasks related to the Blue Economy, capacity strengthening is required. In 2018, Barbados established the Ministry of Maritime Affairs and the Blue Economy (MMABE) to stimulate economic growth through the sustainable use of ocean resources and a shift towards economic recovery, diversification, and transformation. As the Ministry is relatively new and has this broad mandate, there is a need to strengthen its institutional capacity to deliver on its mandate.

(b) Solid Waste Management

1.44 During the 1980's, as a result of pressures to improve the disposal of solid waste, the Government of Barbados took the bold step to site and construct an engineered sanitary landfill at the Mangrove Pond site that sought to reduce nuisance, contamination of groundwater and the coastal zone. This was followed in the 1990's by the establishment of the Integrated Solid Waste Management Programme (ISWMP) that provided a framework based on the waste management hierarchy, specifically waste minimization and the 3Rs (reduce, reuse and recycle), to guide the management of solid waste in Barbados with implementation by the Project Management Coordinating Unit (PMCU). Under this scheme, collection and disposal of municipal solid waste was assigned to the Sanitation Services Authority (SSA) and monitoring and regulation to the EPD.

1.45 Since then, Barbados has experienced significant improvements in waste management, particularly in the recovery of recyclables that came with the establishment of the public private partnership that constructed and is operating the Sustainable Barbados Recycling Centre (SBRC) in 2009 at Vaucluse, St. Thomas, adjacent to the Mangrove Pond Landfill. As a result of the operation of the SBRC, which receives municipal solid waste[8] and targets the recovery of several waste streams such as Construction & Demolition, cardboard, green waste, bulky waste etc., it is reported that 70%[9] of solid waste has been diverted from landfilling, and this does not include the amount recovered by private sector recycling entities. These entities concentrate on recovering marketable products such as: paper and cardboard, plastics, glass, ferrous and non-ferrous metals, E-waste, used cooking oil, used automotive oil and batteries. The 2015 Waste Characterization Study [15] indicates that 1,024 metric tons of waste were received daily at the SBRC; 16,380 metric tons of recyclables recovered and exported annually by recycling entities and that the generation of solid waste is 3.85 Kg[10] per capita day. The study also showed that a considerable percentage of the waste stream (organics 32%, paper and board 19%, plastics 13%, glass 5% and metals 5%) is recoverable through recycling, composting or energy recovery.

1.46 The high level of recycling was made possible through the passage of the Returnable Containers Act (1986), that established a deposit refund system on beverage containers which provided an economic incentive for the return of these containers for recycling or reuse. Prior to a December 2019 amendment, this Act did not cover a wide range of other, non-beverage, containers that are either finding their way into watercourses or the landfill, even though some are recovered by the private sector recycling entities. Hence, the need for the recent amendment to the Act to cover non-beverage containers and thereby increase recycling rates and save scarce landfill space, notwithstanding the 2019 ban on single use plastics and Styrofoam.

1.47 While Barbados has made important progress in implementing the physical and non-physical components of the ISWMP, significant gaps still exist in the institutional, legal and regulatory framework. These pertain to managing solid waste, considerations for circular economy and source separation, as well as challenges due to the threat that improperly managed emerging solid waste streams pose to the environment, particularly groundwater resources and the coastal waters and beaches. Most notably, the current legal framework rests on The Health Services Act (Cap. 44), 1969; Health Services (Nuisances) Regulations, 1969; and the Health Services (Disposal of Offensive Matter) Regulations, 1969. For example, the 2015 Waste Characterization Study Report notes that haulers sometimes skirt around existing legislation and dump their waste in abandoned quarries without incurring any penalties [15].

1.48 The proposed remedy includes a Solid Waste Management Act that would provide a comprehensive legislative framework for the ISWMP The Act would be an upgrade to the existing Health Services Act (Cap. 44). It will include updated

---

8 The World Bank defines municipal solid waste as including 'non-hazardous waste generated in households, commercial and business establishments, institutions, and non-hazardous industrial process wastes, agricultural wastes and sewage sludge.

9 Personal communication with the Programme Coordinator, January 2020.

10 This figure refers to overall solid waste per capita and not municipal solid waste per capita.

regulations for the operation of solid waste facilities, covering waste brokers, recyclers, transfer stations, materials recovery facilities, and registration of waste haulers. It will better define the roles of the SSA, EPD and other agencies. The Act will address fines and custodial sentences for those who infringe its provisions, through activities such as illegal dumping and littering.

1.49 **Progression of reforms.** In the area of solid waste management, the effects of the amendment of the Returnable Containers Act under the PBP I, will be strengthened with the passage of broader provisions under the Solid Waste Management Act in PBP III, to be preceded by the Bill under PBP II. It is expected that this policy progression will result in an increased level of recycling and improvements in waste collection and disposal over time. Similarly, the outcome of ICZM Policy of PBP I is expected to be strengthened with the passage of the more detailed ICZM Plan and the development of the natural capital valuation methodology of PBP II and with the ICZM Act and Action Plan for the Natural Capital Accounting in PBP III. These actions reinforce the importance of active management of activities within the coastal zone of an island state like Barbados, and gradually elevate the consideration of natural capital assets in its economic framework.

Table 2. Sustainability in the Context of Natural Capital Management – Progression of Reforms

Pre-PBP Reforms ⇒	**PBP I** ⇒	**PBP II** ⇒	**PBP III**
	Consultative processes and launch of reforms	**Consolidation of policies, plans, and regulations; Expansion of technological applications; Deepening of assessments**	**Parliamentary tabling of new laws or amendments; Establishment of protocols guidelines/models; Launch of supporting /plans**
	ICZM Policy	ICZM Plan	ICZM Act
Valuation study on reefs and beaches		Natural Capital valuation methodology	Action Plan for Natural Capital accounting
MMABA formed		Strategic Plan for MMABA	
Single use plastics and Styrofoam ban	Returnable Containers Act amendment	Solid Waste Management Bill	Solid Waste Management Act

4. Sustainability in the Context of Disaster Risk Management and Resilience

(a) Disaster Risk Management Programming

1.50 Barbados is at risk of being affected by most natural hazards including hurricanes, flooding, storm surge, landslides, earthquakes and tsunamis. Comprehensive Disaster Management (CDM) is the management of all such natural hazards, as well as man-made ones, through all phases of the disaster management cycle, by all peoples- public and private sectors, all segments of civil society and the general population. It emphasizes taking a holistic, integrated and participatory approach

to addressing disaster risk, with the goal of building resilient, safer societies. Managing disaster risk and building a resilient society is of paramount importance to maintaining a trajectory of continued sustainable development.

1.51 In Barbados, CDM is the responsibility of the National Emergency Management System (NEMS) - a broad-based multi-sector, multi-stakeholder mechanism coordinated by the Department of Emergency Management. It comprises the Emergency Management Advisory Council (EMAC) and its fifteen Standing Committees, national emergency services, local volunteers, Non-Governmental Organizations and Community-based Organizations, regional and international partners and the private sector. Currently there is ample room for improvement in coordination and coherence across the agencies that comprise the NEMS. In response to this need, the Barbados CDM Country Work Programme (CWP) 2019-2023 has been recently developed by the partners of the NEMS. Prior annual work-programming was focused heavily on developing and maintaining emergency response readiness, shelter capabilities, institutional strengthening for CDM, and public awareness and education programs.

1.52 The development of a multi-year, cross-sectoral work program recognizes the need for and enables an operational transition to a broader more comprehensive, strategic multi-annual/long-term approach to disaster risk management; in which Department of Emergency Management in partnership with NEMS partners, facilitates, advocates and actively exercises increased leadership for more coordinated multi-sector engagement and cooperation and mainstreaming of risk reduction and climate adaptation approaches, across all phases of the DRM cycle (preparedness, response, risk reduction, recovery, and financial protection). This approach is better aligned to, harmonized with, and monitorable in the context of regional (CARICOM) and internationally articulated (Sendai Framework) DRM outcome targets and their respective progress tracking indicators.

1.53 The CWP is a results-based, multi-year program to increase resilience by strengthening national systems and processes for emergency and disaster risk management. Five areas of work were agreed upon for the 4-year period: (i) institutional strengthening for CDM; (ii) preparedness response and mitigation capacity; (iii) strengthening community resilience; (iv) research and knowledge management; and (v) recovery. Formal sanction of the CWP by the Cabinet would give the Programme added weight and facilitate stronger coordination, harmonization of agency agendas, and alignments of budgets, leading to efficiency and effectiveness improvements in DRM.

1.54 **Business continuity planning.** Consistent with both the findings of the current draft iGOPP assessment and the findings of the 2018 CDEMA audit, Barbados' capacities in the respective DRM areas of mitigation and recovery need strengthening. Presently, there is no clear ex-ante strategic plan and/or governance approach on how continuity of government and resilient post-disaster economic recovery and reconstruction might be optimally coordinated and facilitated. Development of a coordination plan, institutional approaches, roles and configurations and financing for the national continuity of Government in advance of national scale impacts prior to loss events is critical to enabling future resilient recovery. Recognizing this deficit, the Government of Barbados is embarking on the development and approval of an enhanced national recovery framework in

2020 as part of its multi-year comprehensive disaster risk country work program (2019-2023). Under this work program, it is also envisaged that more structured protocols around the role, engagement and involvement of the private sector in the provision of services during emergencies will be defined and developed. At present, private sector involvement in emergency response is largely affected on an ad hoc, as needed, responsive basis.

(b) Disaster Risk Financing and Financial Protection

1.55 Fiscal shocks from losses and contingent liabilities associated with natural hazards and climate change could undermine the EFF reforms. These costs include providing emergency assistance to affected populations; support for repair or reconstruction of affected homes and institutional buildings, many of which were not built to withstand the current threats; early restoration of lifeline infrastructure; rehabilitation, replacement and reconstruction of public assets; and the general loss of tax revenue. Through the National Coastal Risk Information Planning Platform (NCRIPP), probable losses from 100-year return period wind and coastal storm surge events are estimated at US$0.5 billion and US$325 million respectively for the residential housing sector alone. Regional projections also suggest that climate change is exacerbating this situation by increasing the frequency and severity of existing coastal hazards as well as generating new types of hazards such as sea level rise.[11]

1.56 A 2018 CDM Audit[12] found notable weaknesses in the area of recovery, including: (i) recovery planning, including establishing and strengthening ex ante risk financing options; (ii) business continuity planning, particularly among micro, small and medium enterprises; and (iii) mechanisms to support the psychological recovery of the population post-disaster.

1.57 Considering the exposure and vulnerability of Barbados to climate-related risks, the development of a comprehensive disaster risk financing strategy should include an appropriate mix of ex-ante instruments to manage these public contingent liabilities. The Ministry of Finance, Economic Affairs and Investment (MFEI) oversees the sourcing and allocation of funds used to address natural disasters. There is little to no contingency budget for low-loss events of high frequency or to facilitate immediate recovery and response efforts following floods and hurricanes. Effective disaster risk financing strategy requires additional financial options including contingent debt instruments, and risk transfer instruments.

1.58 Given the threat posed by natural disasters and climate change, the Government of Barbados has taken effective measures to strengthen its financial resilience. The country has purchased insurance protection through the Caribbean Catastrophe Risk Insurance Facility (CCRIF) against hurricanes, excess rainfall, and earthquakes. Since 2010, the CCRIF has made six (6) payments for recovery efforts, totaling US$19.3 million. Another significant measure is the inclusion of natural disaster clauses into new government bonds that will allow deferral of

---

11 Under a high carbon emissions scenario, the median 21st-century sea-level-rise projection ranges from 0.74-0.83 m across 12 tide gauges in the Caribbean Basin according to Bibliographic reference [6].

12 The CDM Audit comprises a set of internationally accepted standards (or criteria) for each phase of the disaster cycle- mitigation, preparedness, response and recovery.

scheduled amortization falling due for two (2) years. The risk retention capacity provided with a contingent loan would be another important step in improving the country's natural disaster risk financial management and would complement the CCRIF, which was highlighted by the IMF in its latest Article IV Report for Barbados.

1.59 **Financial Resilience and Stress-Testing of the Insurance Sector.** Recognizing the importance of the need to ensure adequate financial resilience and liquidity to address disaster induced shocks, commendably the Government is also contemplating the development and implementation (within present mechanisms of oversight and regulatory compliance by the Financial Services Commission) of a system of annual stress testing of insurance firms. Post hurricane impact experiences, elsewhere in the Region have shown failures and/or deficits in the solvency of the contingent capital insurance providers that were expected to provide required payouts to policy holding residential homeowners. This includes but is not restricted to factors such as their risk appraisal capacities, the balance between their self-insured risk retention and transferred risks e.g. via reinsurance. This initiative is contemplated as part of the subsequent future series of sustainability reforms.

(c) Disaster Risk Identification and Assessment

1.60 The above-mentioned 2018 CDM Audit found that Barbados' DRM capabilities in the areas of mitigation and recovery also urgently need strengthening. The following were identified as key areas for improvement: (i) policy, legislation and regulations for reducing risk and building more resilient systems; (ii) risk (hazard and vulnerability) identification and integration of this information into decision-making; and (iii) integration of technology into DRM decision-making, particularly use of Geographic Information Systems.

1.61 Currently, natural hazard and climate risk appraisal in new public and private investment projects are largely coordinated on a request basis by the Chief Town Planner, via a consultative process in which the TCDPO, solicits the expert input of key sector expertise from relevant Government line agencies. Typically, these agencies appraise the risks of new development and indicate what risk management and control measures would optimally reduce and/or mitigate this risk and this would be included in the conditions under which the development is permitted by the TCDPO.

1.62 Under the IDB Coastal Risk Management Program loan (2463/OC-BA), the CZM Unit has been able to develop a digital risk information platform with data resolution and geo-referenced coverages that are national in spatial extent (beyond the presently defined coastal management area) and which presents the added utility value of applied risk appraisal benefit for multiple sectors, beyond ICZM. This innovative, technological system, the NCRIPP now affords key line agencies across Government access to a geo-referenced, query-able digital information system, where data coverages that allow for both quantitative and qualitative natural hazard and climate change risk appraisal and analysis can be undertaken at sector/thematic level. From a sustainability perspective, the continued updating and utilization of the NCRIPP system will improve the speed, coordination and efficiency of risk appraisal and allow for more resilient risk informed development,

where the risk of future losses can be reduced, mitigated, and/or avoided altogether.

(d) Increasing resilience in the housing stock

1.63 In Barbados, architectural and engineering practices formerly employed have been replaced over time with less desirable practices for various reasons. Under the R2RP, the Urban Development Commission (UDC) and the Rural Development Commission (RDC) will carry out a program of retrofitting of vulnerable homes and replacement of pit latrines. The UDC and RDC are expected to ensure that projects are executed in accordance with international and national recognized standards, such as the BS8110, Barbados National Building Code and the code of practice for wind loads for structural design. Organization of American States – National Council of Science and Technology – Barbados Association of Professional Engineers (OAS-NCST-BAPE).

1.64 Currently, there are many roof structures with a pitch of less than 23-25-degrees, and a category of foundations which are considered undesirable for hurricane resilience. Flat roofs are considered less desirable than roofs with a 25-30-degree pitch. Loose foundation types should be upgraded to solid types (strip footings or reinforced concrete block piers) with connectivity between the foundation and the superstructure using hold down bolts and hurricane straps. Such reinforcement to the structure would minimize the risks of overturning, uplift or sliding due to strong winds or water current impacting. Therefore, it is recommended that all the structural building elements have strong connectivity as connections are generally vulnerable and structural failure is often progressive where the failure of one structural element triggers the failure of another and leads to a total collapse.

1.65 Under the R2RP, building resilience in the low and middle-income housing stock will include the following: (i) fortifying the roofs, windows, doors of buildings, in particular those on low to middle income housing, to withstand up to Category 4 hurricane wind speeds (157 mph); (ii) Installing grid-tied rooftop solar photovoltaic systems (with battery storage in the event of grid loss) - installation to be conducted under a to-be-established protocol/code to reduce the risk of losing the panels in an extreme wind event; (iii) installing modern rooftop rainwater harvesting systems and stormwater drainage to both improve water storage capacity and groundwater recharge rates; (iv) installing potable water storage systems to increase resilience to drinking water shortages; and (v) installing modern, cost-effective, affordable household or communal wastewater treatment systems, with particular emphasis on nutrient removal/recovery (closing the nitrogen loop) to protect vital coastal reefs. To create the environment for consistent application, a policy on retrofitting for resilience-building of low and middle-income structures is needed in the medium term, as are guidelines for construction of climate resilient housing for these segments of the population.

1.66 **Progression of reforms.** The impact of the CDM Work Program, the application of the NCRIPP for the coastal zone, and the approval of R2RP Concept Note under PBP I, will be further enhanced and supported under PBP II with the addition of a Contingent Credit Line and stress-testing of financial institutions that will deepen fiscal resilience and expand the focus to the private sector. PBP II will also expand the geographic coverage of NCRIPP island-wide and introduce a policy for

resilience retrofitting of homes which will flesh out R2RP's application in this area. Under PBP III further consolidation will occur by addressing additional regulatory gaps and protocols for the role of the private sector, as well as more detailed guidelines for resilient construction.

Table 3. Sustainability in the Context of Disaster Risk Management and Resilience -Progression of Reforms

Pre-PBP Reforms	**PBP I**	**PBP II**	**PBP III**
	Consultative processes and launch of reforms	**Consolidation of policies, plans, and regulations; Expansion of technological applications; Deepening of assessments**	**Parliamentary tabling of new laws or amendments; Establishment of protocols guidelines/models; Launch of supporting plans**
CDM Audit	CDM Work Program		Model for recovery; Protocols for private sector
CCRIF		Contingent Credit Line; Stress testing of insurance firms	
NCRIPP development	NCRIPP for coastal zone	NCRIPP applied island-wide	
Mapping of most vulnerable households	R2RP Concept	Policy for resilience retrofitting of homes	Guidelines for resilient construction

1.67 **Lessons learned.** This PBP incorporates the lessons learned by the Bank in the design and implementation of programmatic operations to accompany policy reforms.[13] Some of these lessons are related to the importance of: (i) adequate sequencing of reforms and a gradual approach that combines regulatory progress with technical capacity building; (ii) ensuring the programmatic series is designed to minimize the risk that the reform will be unsustainable; and (iii) the Bank providing very close support to the government during the implementation of institutional changes and policy measures through technical assistance. As currently structured the reforms are gradual, often progressing from policy to legislation or detailed plan. The program is complemented by a range of technical assistance to the Government for analytical, capacity building, and coordination assistance in support of the reform progression (¶1.69). The risk of unsustainability is in part addressed by the reform commitment obligations of the Government under the IMF-EFF arrangement, including but not limited to recent borrowing that the country has undertaken to implement a public sector reform agenda. The Government is also making its own financial commitments to advancing institutional actions that are aligned to and which will support the reforms, in the preparation of its annual budgetary estimates. However, the strongest indicator of the sustainability of the PBP is the prominent ownership of the reform agenda by

[13] Technical Note: Design and Use of Policy-based Loans at the IDB, IDB-OVE, 2015.

the Government. The reforms are an integral part of the Government's development philosophy as encapsulated by the R2RP. They are fully aligned with the Government's commitment to the SDG, particularly as there are policy triggers that are directly related to SDG targets.[14] They are also aligned to the country's Nationally Determined Contribution to the Paris Agreement given the sectoral coverage related to waste, agriculture and land use, land use change and forestry and as noted earlier, they are fully consistent with the Barbados Sustainable Development Policy. Moreover, the Government's commitment to investment in this area is directly attested to by the substantive operational engagements in the energy sector (¶1.70), as well as by a series of coastal zone management loans and water and sanitation investment loans dating back to early 1990s and 1975, respectively.

1.68 The program design also benefits from analysis of the efficacy of the reforms and investments that it supports both in Barbados and in other countries. For example, ex ante investment in disaster risk mitigation activities such as coastal protection and other civil protection works (including nature-based solutions) have been shown to generate benefits four to seven times greater than post disaster expense [11,12,13]. In the area of urban planning reform, the emphasis on reducing transaction costs as a way of boosting investment, is extensively covered in the literature on institutional economics [14].

1.69 **Bank additionality.** The Bank has a deep engagement in support of the reform agenda supported by this PBP through a range of technical assistance and lending operations. Regarding technical cooperation operations, these include: the Sustainable and Emerging Cities Initiative (ATN/OC-14528-BA; and ATN/OC-14529-BA), which diagnosed the unsustainability of built development trends and proposes corrective measures; the Index of Governance and Public Policy in Disaster Risk Management - iGOPP (ATN/MD-15712-RG), which is identifying the areas of DRM that are in need of strengthening; an assessment of sustainability of islands, including that of Barbados, under a platform of the blue economy, circular economy and climate resilience (ATN/MC-16236-RG); the design of a strategic roadmap for the Blue Economy in Barbados (ATN/CO-17589-BA); and a quantification of the value of natural capital assets with a view to their prospective inclusion in national accounts (ATN/OC-17333-RG). Another study focuses on the macroeconomic impacts of disaster risk reduction investments (ATN/OC-17270-RG and ATN/MD-17269-RG). In addition, the Coastal Risk Assessment and Management Program Loan (2463/OC-BA) is supporting the ICZM reform agenda, and the Tourism Program (4342/OC-BA) is financing some investments in better urban management.

1.70 Over the past decade, the IDB played an active role in supporting the energy sector sustainability transformation in Barbados. Through two PBL operations (2410/OC-BA; 2609/OC/BA), the Bank assisted the process of drafting and enacting policies and regulations to promote Energy Efficiency and Renewable Energy (RE) that contributed to the enactment of the Electric Light and Power Act (ELPA), 2013. Subsequently, the Bank approved four (4) investment loans: a US$10 million Sustainable Energy Investment Program (Smart Fund I)

[14] In particular, Sustainable Development Goal (SDG) 1 (No poverty); SDG 11 (Sustainable Cities and Communities); SDG 13 (Climate Action); SGD 14 (Life Below Water); and SDG 15 (Life on Land).

(2485/OC-BA); a US$24.6 million Public Sector Smart Energy Program (PSSEP) (2748/OC-BA); a US$34 million Deployment of Cleaner Fuels and Renewable Energies in Barbados (3843/OC-BA); and most recently a US$45 million (US$30 million from the IDB and the equivalent of approximately US$15 million of a non-reimbursable investment grant from the European Commission Amended and Restated Framework Agreement) Sustainable Energy Investment Program (Smart Fund II) (4865/OC-BA and GRT/ER-17578-BA), signed in February 2020.

1.71 **Strategic Alignment.** The operation is consistent with the Second Update of the Institutional Strategy – UIS (AB-3190-2) and is aligned with the development challenge of: (i) Social Inclusion and Equality by promoting reforms that will reduce the vulnerability of the poor to natural disaster and climate change losses; and (ii) Productivity and Innovation by strengthening the resilience of the assets that underly the country's finances, as well as by expanding the opportunities for their sustainable use in the context of the blue economy. The program is aligned with the cross-cutting themes of: (i) Climate Change and Environmental Sustainability, through initiatives related to spatial planning and development control, disaster risk management, coastal zone management, water resource management, and retrofitting of homes to increase resilience. According to the joint methodology of Multilateral Development Banks (MDB) approach on climate finance tracking, 80% of total IDB funding for this operation result in climate change mitigation and adaptation activities. This contributes to the IDBG's climate finance goal of 30% of combined IDB and IDB Invest operational approvals by year's end 2020; and (ii) Institutional Capacity and the Rule of Law through its substantive regulatory reform agenda. Additionally, this PBP is expected to contribute to the IDB Group Corporate Results Framework, 2020-2023 - CRF (GN-2727-12) output indicators relating to new or upgraded access to drinking water and sanitation for households. This PBP is consistent with the Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (GN-2609-1), the Bahamas Resolution of 2016 (AG-6/16 & CII/AG-2/16), the Climate Change Action Plan (GN-2848-4), the Climate Change Sector Framework Document (GN-2835-8) and the Disaster Risk Management Policy (GN-2354-5), by promoting resilience and sustainability to climate risks through the strengthening of disaster and climate change policies. It is consistent with the Urban Development and Housing Sector Framework's (GN-2732-6) objectives of promoting access to quality urban infrastructure and the mitigation and adaption to climate change in urban development. It is also consistent with the Agriculture Sector Framework Document (GN-2709-10); and the Environment and Biodiversity Sector Framework (GN-2827-8) through its objective of enhancing and protecting of the marine and land environment. Finally, the project contributes to the Water and Sanitation Sector Framework's (GN-2781-8) objectives of fostering sustainable water resource management.

1.72 The operation is also aligned with the IDB Group's Country Strategy with Barbados 2019-2023 (GN-2953-1), in its third priority area, promoting greater productivity and competitiveness, as it will promote investment and contribute to a stronger private sector climate. Additionally, this operation is included in the Update of the Annex III of the 2019 Operational Program Report (GN-2948-2).

1.73 The IDB is actively coordinating with the CDB and the IMF through quarterly coordination meetings. These take place primarily when the IMF carries out

program monitoring visits in Barbados. This has allowed the multilaterals to align work agendas, complete complementary technical assistance products and monitor the volume and timing of our budget support.

1.74 **Gender.** Most of the reforms that are part of this PBP are at the macro level and therefore are gender-neutral in their operation. However, where Plans, Regulations, and Protocols are to be developed in the second and third operations, and wherever consultations are pending for the first operation, the Government of Barbados will conduct such consultations in a way that actively and deliberately seeks out the views of diverse groups, including women and girls, so that their development priorities and modalities would not be overlooked.

B. Objective and components

1.75 The objective of the programmatic policy-based loan series is to improve the country's governance for sustainability through the strengthening and modernization of the regulatory framework. The specific objectives of the first operation are to advance the ongoing regulatory reform efforts to improve: (i) the efficiency and sustainability of spatial planning, development control, and water resource management; (ii) natural asset management; and (iii) disaster risk management and resilience. The program's components and associated conditions are described below:

1.76 **Component 1. Macroeconomic stability.** The objective of this component is to support the maintenance of a stable macroeconomic environment consistent with the program's objectives and in accordance with the provisions of the Policy Letter (¶4.1).

1.77 **Component 2. Spatial Planning, Development Control, and Water Resource Management.** The objective of this component is to support the reform of the regulatory framework for spatial planning, development control, and water resource management, which includes: (i) modernization of the legislation governing planning and development to improve efficiency and transparency and to explicitly address the application of environmental impact screening; (ii) realization of a public consultation of the draft revised Physical Development Plan; (iii) approval of the Water Protection and Land Use Zoning Green Paper by Cabinet; and (iv) update of the Stormwater Management Plan to include attenuation of impacts of stormwater, incorporating the cumulative impacts of development and climate change considerations.

1.78 The PBP II operation will deepen these reforms by: (i) expanding the use of the E-Planning system to facilitate electronic applications for planning permission; (ii) approving the revised Physical Development Plan; (iii) conversion of the Water Protection and Land Use Zoning Green Paper to a White Paper, giving it the weight of policy; (iii) approving the guidelines and protocols for rainwater harvesting; and (iv) approving drafting instructions for the Water Reuse Bill, building on the 2019 Water Reuse Policy.

1.79 The PBP III operation will consolidate the Government of Barbados reform agenda through the approval of a Sustainable Urban Mobility Plan to guide planning approaches and lessen economic and wellbeing costs; tabling in Parliament

amendments to the Barbados Water Authority Act to accommodate policy shifts advanced in the White Paper; and introducing into Parliament of the Water Reuse Bill to address pertinent sustainability issues.

1.80 **Component 3. Natural Asset Management.** The objective of this component is to support the development of the regulatory framework for natural asset management. The first PBL operation will include: (i) the modernization of the ICZM Policy to address and integrate resiliency to climate change and disaster risks; and (ii) the adjustment to the Returnable Containers Act that will expand coverage to non-beverage containers and facilitate the recycling of materials, thereby reducing the level of contamination of land and coastal resources.

1.81 The PBP II operation will deepen these reforms through: (i) the approval of the Coastal Zone Management Plan; (ii) tabling in Parliament of the Coastal Zone Management Bill; (iii) drafting of the Solid Waste Management Bill; (iv) finalization of a methodology for valuation of natural assets; and (v) approval of strategic operational plan for the MMABE.

1.82 The PBP III operation will consolidate these reforms through the approval of the Coastal Zone Management Act and an Action Plan for natural capital accounting; as well as tabling in Parliament of a Solid Waste Management Bill.

1.83 **Component 4. Disaster Risk Management and Resilience.** The objective of this component is to support governance reforms to enhance disaster management and resilience. The first PBL operation will include: (i) the modernization of disaster risk management to pursue an all hazards, programmatic, multi-year, cross-sectoral approach for all phases (i.e. prevention, mitigation, preparedness, response, recovery and rehabilitation) of the DRM cycle-consistent with and guided by the vision and goals of the CARICOM Comprehensive Disaster Risk Management Strategy 2014-2024; (ii) the approval of the newly developed NCRIPP (beyond CZM) in applied risk assessment for new investments and operations across multiple sectors; and (iii) the approval of a Concept Note for the R2RP.

1.84 The PBP II operation will deepen these reforms by: (i) the approval of a financial protection mechanisms for contingent liabilities; (ii) the development of a system of annual stress testing for insurance firms; (iii) expanding authorization for the use of NCRIPP development applications island-wide; and (iv) the approval of a policy on low and middle-income residential building retrofitting to withstand extreme wind events.

1.85 The PBP III operation will consolidate these reforms by addressing a further DRM deficiency such as economic recovery and business continuity; publication of protocols for private sector roles in disaster situations; and approval of guidelines for climate-resilient housing construction for low and middle-income households.

C. Key results indicators

1.86 The expected outcomes of the programmatic PBL operations are conceived as short-, medium- and long-term changes, stemming from the strengthening and modernization of the regulatory framework to improve the country’s governance

for sustainability, as indicated in the Results Matrix (Annex III). As a result of the regulatory reforms, the efficiency and sustainability of spatial planning, development control and water resource management is expected to improve, with a reduction in the average time to obtain the necessary licenses and permits for construction and an increase in the proportion of development applications in groundwater Zones C and D that incorporates some form of pretreatment of wastewater. Upon the completion of the first operation, these results will be buttressed by the proclamation of the Planning and Development Act, the Cabinet approval of both the draft revised Physical Development Plan for public consultation and the Stormwater Management Plan Update, as well as the tabling in Parliament of the Water Protection and Land Use Zoning Green Paper. The proposed reforms are also expected to improve natural asset management by increasing the use of a systematic objective assessment of risk during the building development application process (based on the NCRIPP) and through less glass, plastic and scrap metal received at the Sustainable Barbados Recycling Center, due to greater diversion at source. During the first operation, the improvement of these indicators will stem from the Cabinet approval of the Integrated Coastal Zone Management: the Barbados Policy Framework (2020-2030) and from the proclamation of the Returnable Containers Amendment Act, 2019-59. Finally the Cabinet approval of: (i) the Barbados Comprehensive Disaster Management Country Work Program 2019-2023; (ii) the NCRIPP, for use by the CZMU for assessing coastal development applications; and (iii) the approval of the R2RP Concept Note, as conditions of the first operation, will contribute to enhanced policy coordination and articulation relating to disaster risk and to an increase in the number of homes of poor and middle-income households being retrofitted or constructed by the Government of Barbados to support resilience.

1.87 **Beneficiaries.** The program's expected beneficiary population is the entire population of Barbados of approximately 285,000 people under the PBL series. Some regulatory reforms and programming in the areas of CZM, disaster management, and resilience, will have particular benefits to low- and middle-income households, with higher vulnerability to climate effects.

1.88 **Economic analysis.** Based on the recommendations of Office of Evaluation and Oversight (OVE) in its 2011 Evaluability Review of Bank Projects[15] and on the findings of the review of evaluation practices and standards for policy-based loans by the Evaluation Cooperation Group (comprising the independent evaluation offices of the multilateral development banks)[16], anticipated in paragraph 1.3 of document GN-2489-5 (Review of the Development Effectiveness Matrix for Sovereign Guaranteed and Non-sovereign Guaranteed Operations), indicating that it would not be necessary to include an analysis of efficiency in the use of financial resources[17], it was decided that economic analyses would not be conducted for these types of loan operation does not include economic analysis,

---

15 Document RE-397-1: "Currently, Economic Analysis section is computed as the maximum between the cost-benefit analysis and the cost-effectiveness analysis. Yet neither a cost-benefit analysis nor a cost-effectiveness analysis is applicable to policy-based loans and programmatic policy-based loans."

16 Good Practice Standards for the Evaluation of Public Sector Operations." Evaluation Cooperation Group, Working Group on Public Sector Evaluation, 2012 Revised Edition. Feb 2012.

17 According to the Evaluation Cooperation Group, programmatic policy-based loans should be evaluated based on relevance, effectiveness, and sustainability. Efficiency is not included as a criterion, since the scope of the PBLs is linked to a country's financing gap, regardless of the benefits of the project.

and accordingly, the economic analysis will not be considered for purposes of this program's development effectiveness matrix evaluability score.

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financing instruments

2.1 This operation is the first PBP operation of the programmatic policy-based loan series consisting of three contractually independent and technically linked loans, pursuant to the stipulations in Policy-based Loans: Guidelines for Preparation and Implementation (document CS-3633-2). In this mentioned - document, according to paragraph 3.27 (b), the amount of the financing for this first PBP operation is US$80 million from the Ordinary Capital. It will contribute to partially cover Government of Barbados public gross financial needs of US$588.4 million (equivalent to approximately 11.3% of GDP). External gross financing needs compose 5.0% of GDP.[18] This operation will contribute to the external, official financing. This financing instrument with a programmatic option was chosen since it provides continuity for technical and policy dialogue. Therefore, as indicated in document CS-3633-2, this is the most adequate modality to respond to any events that occur or to new knowledge acquired during execution. Given the wide ambition of the Government's program to transition the economy to a more sustainable path, the PBP provides a basis for identifying and prioritizing regulatory reforms that help to create an enabling environment for the achievement of the desired developmental outcomes. In the absence of these regulatory reforms, the efficacy of an investment program could be undermined. An additional advantage of the instrument is that it allows very close work with the Executing Agency between the successive operations in the series, permitting a policy adjustment if necessary.

B. Environmental and social safeguard risks

2.2 According to Directive B.13 of the Environment and Safeguards Compliance Policy (Operational Policy OP-703), this program requires no classification. The operation supports the definition of policies, standards, management instruments, and other institutional strengthening activities that do not entail any social or environmental risks.

C. Other risks and key issues

2.3 Four risks were identified and rated as Medium for this PBP operation, including: (i) inadequate institutional capacity in the MFEI for program coordination leading to un-timely client country responsiveness – Mitigated by early involvement of the Cabinet of Ministers as champions in the formulation of the reform agenda and the appointment of an experienced Government focal point for the loan within the MFEI; and (ii) the efficacy of well-targeted reforms may be undermined by inadequate allocation of human resources and enforcement capacity, especially at a time of containing public expenditure – mitigated by the political economy incentives of the current Government who have made sustainability reforms a key

[18] Source: IMF Article IV December 2019. Note, public sector is defined as central government and includes public guarantees, defined as State-owned enterprises (SOE) debt.

pillar of its governance agenda, and by the opportunity to use ongoing policy dialogues, technical cooperation, supervision of existing and forthcoming investment operations to identify and invest in areas of weakness during the preparation of loans II and III in the PBP .

2.4 **Key Issues.** Despite this demonstrated commitment to the sustainability reform agenda, the PBP concludes with several actions that cannot feasibly be completed within the timeframe of the PBP and which could affect the sustainability and impact of the reforms. In particular, several draft legislations will be introduced for Parliament approval in PBP III, however a critical next step will be the passage of regulations to give detailed and practical application to those new or amended laws. Additionally, in the current macro-economic situation, slower than expected macro-economic recovery could constrain investments in the sustainability transformation agenda of the Government and the capacity of the Government to devote adequate manpower and resources to effectively implement those reforms could be challenging. This is mitigated by the fact that the regulatory reforms pursued under the PBP will help to create an environment whereby sustainability is mainstreamed in both public and private sector all development, and by the expected efficiency gains in public administration on account of technological investments. Given the longstanding and ongoing operational and policy engagement of the Bank in the sectors covered by this PBP, however, the Bank will be able to engage the Government on meaningful dialogues to address these and other pertinent issues that may arise. Moreover, in the evolution of the PBP as well as in policy dialogues on infrastructure investments, the Bank will continue to use its Sustainable Infrastructure Framework to promote adequate attention to social, institutional, and economic/financial sustainability aspects, in addition to environmental sustainability and climate resilience.

III. IMPLEMENTATION AND MANAGEMENT PLAN

A. Summary of implementation arrangements

3.1 The executing agency for this PBP will be the MFEI through its Public Investment Unit (PIU), which will responsible for: (i) coordinating the entities involved in the PBP's execution and presenting to the Bank evidence of the fulfilment of the policy conditions of the policy matrix; (ii) promoting actions to achieve the policy objectives of the program; and (iii) compiling, maintaining, and delivering to the Bank the necessary information, indicators, and parameters to monitor and evaluate program outcomes.

3.2 **Special Contractual Condition prior to single loan disbursement of the PBP: The single disbursement of loan resources will be subject to the Borrower's compliance with the policy conditions of the first operation summarized in the Policy Matrix (Annex II), and the Policy Letter, as well as the compliance with the conditions contained in the Loan Contract**.

B. Summary of arrangements for monitoring results

3.3 Program monitoring is defined as verification of the policy measures agreed to as conditions (REL 2 - Means of verification Matrix). In addition, monitoring is provided

for the outcomes of these reforms and policies at the program level through the indicators of the Results Matrix. Before processing the second operation, the Bank will issue a progress report reviewing the program's development, the progress made in the reforms, and the triggers, and will identify any changes and adjustments that may be required to meet program targets.

3.4 The project team will prepare a Project Completion Report (PCR) covering all programmatic phases at the end of the third operation, following Bank guidelines (OP-1242-5). That report will evaluate the outcomes obtained.

IV. POLICY LETTER

4.1 The Policy Letter reiterates the Barbados government's commitment to the policy reform measures that Barbados has proposed to implement to meet the program objectives.

Development Effectiveness Matrix		
Summary	BA-L1048	
I. Corporate and Country Priorities		
1. IDB Development Objectives	Yes	
Development Challenges & Cross-cutting Themes	-Social Inclusion and Equality -Productivity and Innovation -Climate Change and Environmental Sustainability -Institutional Capacity and the Rule of Law	
Country Development Results Indicators	-Countries that have improved disaster risk management (#)* -Accountability institutions strengthened (#)* -Business environment reforms enacted (#)*	
2. Country Development Objectives	Yes	
Country Strategy Results Matrix	GN-2953-1	Promoting greater productivity and competitiveness
Country Program Results Matrix	GN-2948-2	The intervention is included in the 2019 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability		Partially Evaluable
3. Evidence-based Assessment & Solution	7.1	
3.1 Program Diagnosis	2.4	
3.2 Proposed Interventions or Solutions	1.7	
3.3 Results Matrix Quality	3.0	
4. Ex ante Economic Analysis	N/A	
5. Monitoring and Evaluation	6.5	
5.1 Monitoring Mechanisms	2.5	
5.2 Evaluation Plan	4.0	
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood	Low	
Identified risks have been rated for magnitude and likelihood	Yes	
Mitigation measures have been identified for major risks	Yes	
Mitigation measures have indicators for tracking their implementation	Yes	
Environmental & social risk classification	B.13	
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)		
Non-Fiduciary	Yes	Strategic Planning National System, Monitoring and Evaluation National System.
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project		

Note: (*) Indicates contribution to the corresponding CRF's Country Development Results Indicator.

This programmatic policy-based loan series consisting of three technically related and financially/contractually independent operations whose objective is to improve the country's governance for sustainability through the strengthening and modernization of the regulatory framework. The specific objectives of the first policy-based programmatic loan (PBP) are to advance the ongoing regulatory reform efforts to improve: (i) the efficiency and sustainability of spatial planning, development control, and water resource management; (ii) natural capital management; and (iii) disaster risk management, disaster risk financing/financial protection and resilience.

The diagnostic is adequate and highlights the importance of sustainable development for Barbados and its economy, focusing on needed reforms and tools to enhance spatial planning, development control and water resource management; natural capital management, in particular related to the coastal zone; and disaster risk management and resilience. Empirical evidence is not always provided or up to date, nor evidence on the effectiveness of the interventions being proposed to achieve the objectives. The result framework exhibits vertical logic and it's structured according to the specific objectives and their respective outcome indicators. In general, the indicators proposed are SMART, with baseline and goals and means of verification.

The monitoring plan meets the requirement for this type of operation. A before after comparison, without attribution, is the basis of the evaluation plan. Data sources and timelines to gather data on outcomes is not specified in all cases.

POLICY MATRIX

Objective: The objective of the programmatic policy-based loan series is to improve the country's governance for sustainability through the strengthening and modernization of the regulatory framework. The specific objectives of the first policy-based programmatic loan (PBP) are to advance the ongoing regulatory reform efforts to improve: (i) the efficiency and sustainability of spatial planning, development control, and water resource management; (ii) natural asset management; and (iii) disaster risk management and resilience.

Components Policy Objectives	Policy Conditions Programmatic I	State of Compliance with Policy Conditions Programmatic[1]	Triggers Programmatic II	Triggers Programmatic III
Component 1. Macroeconomic stability				
Maintain a stable macroeconomic environment consistent with the program's objectives	1.1. Maintenance of an appropriate Macroeconomic Policy Framework congruent with the Program's objectives and in accordance with the provisions of the Policy Letter	Fulfilled	Maintenance of an appropriate Macroeconomic Policy Framework congruent with the Program's objectives and in accordance with the provisions of the Policy Letter	Maintenance of a Macroeconomic Policy Framework congruent with the Program's objectives and in accordance with the provisions of the Policy Letter
Component 2. Spatial Planning, Development Control, and Water Resource Management				
Support the reform of the regulatory framework for spatial planning, development control, and water resource management	2.1. Proclamation of the Planning and Development Act	Expected to be fulfilled on (I Trimester, 2020)	Tabling in Parliament of the Planning and Development Act Regulations	
			E-Planning system expanded to receive applications for Planning Permission	
	2.2. Cabinet approval of the Draft- revised Physical	Expected to be fulfilled on (I Trimester, 2020)	Approval in Parliament of the revised Physical Development Plan	Cabinet approval of a Sustainable Urban Mobility Plan

[1] This information is merely indicative as of the date of this document. As set forth in document CS-3633-2 (Policy-based Loans: Guidelines for Preparation and Implementation), compliance with all the conditions specified for disbursement, including the maintenance of an appropriate macroeconomic policy framework, will be verified by the Bank at the time of the request for the corresponding disbursement made by the Borrower and duly reflected in the Disbursement Eligibility Memorandum.

Components Policy Objectives	Policy Conditions Programmatic I	State of Compliance with Policy Conditions Programmatic[1]	Triggers Programmatic II	Triggers Programmatic III
	Development Plan for public consultation			
	2.3. Tabling in Parliament of the Water Protection and Land Use Zoning Green Paper	Expected to be fulfilled on (I Trimester, 2020)	Tabling in Parliament of the Water Protection and Land Use Zoning White Paper	Tabling in Parliament of Amendments to the Barbados Water Authority Act regarding the Water Protection and Land Use Zoning Policy
	2.4. Cabinet approval of the Stormwater Management Plan Update	Fulfilled on (I Trimester, 2020	Cabinet approval of guidelines and protocols for rainwater harvesting	
			Cabinet approval of drafting instructions for Water Reuse Bill	Tabling in Parliament of the Water Reuse Bill
Component 3. Natural Asset Management				
Support the development of the regulatory framework for natural asset management	3.1. Cabinet approval of the Integrated Coastal Zone Management (ICZM): the Barbados Policy Framework (2020-2030)	Fulfilled on (I Trimester, 2020)	Approval of the Coastal Zone Management Plan	
			Tabling in Parliament the Coastal Zone Management Bill	Proclamation of the Coastal Zone Management Act
			Completion of peer review of the methodology and data used for the estimation of Natural Capital Value associated with beaches and reefs, as input for an Action Plan	Approval of Action Plan for the incorporation of natural capital categories in national assets accounting

Components Policy Objectives	Policy Conditions Programmatic I	State of Compliance with Policy Conditions Programmatic[1]	Triggers Programmatic II	Triggers Programmatic III
			Cabinet approval of a Strategic Operational Plan for the Ministry of Maritime Affairs and the Blue Economy (MMABE)	
	3.2. Proclamation of the Returnable Containers (Amendment) Act, 2019-59	Fulfilled on (IV Trimester, 2019)	Cabinet approval of Drafting Instructions for Solid Waste Management Bill	Tabling in Parliament of the Solid Waste Management Bill
Component 4. Disaster Risk Management and Resilience				
Support governance reforms to enhance disaster risk management and resilience	4.1. Cabinet approval of the Barbados Comprehensive Disaster Management Country Work Program 2019-2023	Fulfilled on (I Trimester, 2020)		One additional policy gap identified by iGOPP Assessment filled (e.g. Development of a governance model for resilient post-disaster economic recovery/business continuity)
				Development and publication of protocols of the role of the private sector in the delivery of services during an Emergency
			Cabinet approval of a financial protection mechanism for contingent liabilities from natural hazard-induced disaster shocks	

Components Policy Objectives	Policy Conditions Programmatic I	State of Compliance with Policy Conditions Programmatic[1]	Triggers Programmatic II	Triggers Programmatic III
			Development by the Financial Services Commission of a system of annual stress testing of insurance firms of their capacity to absorb natural and man-made disasters and development of the appropriate measures to address identified weaknesses	
	4.2. Cabinet approval of the National Coastal Risk Information Planning Platform (NCRIPP) for use by the Coastal Zone Management Unit (CZMU) for assessing coastal development applications	Fulfilled (IV Trimester, 2019)	Cabinet approval of the application of the NCRIPP to determine hazard risk island-wide	
	4.3. Cabinet approval of the Roofs to Reefs (R2RP) Concept Note	Fulfilled (IV Trimester, 2019)	Cabinet approval of a Policy on retrofitting of low- and middle-income residential buildings to withstand extreme wind events	Approval of guidelines for construction of climate- resilient housing for low and middle-income households

RESULTS MATRIX

Project Objective:	The objective of the programmatic policy-based loan series is to improve the country's governance for sustainability through the strengthening and modernization of the regulatory framework. The specific objectives of the first policy-based programmatic loan (PBP) are to advance the ongoing regulatory reform efforts to improve: (i) the efficiency and sustainability of spatial planning, development control, and water resource management; (ii) natural asset management; and (iii) disaster risk management and resilience.

EXPECTED IMPACT

Indicators	Unit of measure	Baseline	Baseline Year	Target – 2023	Means of verification	Observations
Indicator #1 Nitrate concentrations in groundwater wells	mg/l (milligrams per liter)	6.33	2019	6.30	Barbados Water Authority	The value represents the average of wells at Belle, Hampton and West Coast
Indicator # 2 Probable losses to commercial buildings in the Greater Bridgetown Area (GBA) as a share of the estimated capital value of all buildings in the GBA, on account of a 1/100-year storm surge.	Percentage	18	2016	17.2	NCRIPP system and ground surveys of new commercial construction	
Indicator # 3 Percent of planning permission applications that received a conditional refusal and were subsequently approved upon amendment	Percentage	0	2019	25	Town Country Development Planning Office	

EXPECTED OUTCOMES

Indicators	Unit of measure	Baseline Value	Baseline Year	Target – 2023	Means of verification	Observations
SPECIFIC OBJECTIVE # 2. IMPROVE THE EFFICIENCY AND SUSTAINABILITY OF SPATIAL PLANNING, DEVELOPMENT CONTROL, AND WATER RESOURCE MANAGEMENT						
Indicator #1 Average time to obtain the necessary licenses and permits for construction, submit all required notifications, request and receive all necessary inspections and obtain utility connections	Days	377	2019	339	World Bank Doing Business Indicators	
Indicator #2 Proportion of development applications in zones C and D (former zones 3 and 4) that incorporate some form of pretreatment of wastewater (such as a sceptic tank)	Percentage	0	2019	90	Town Country Planning	This information is captured in the application for permission to develop land, question 11.2
SPECIFIC OBJECTIVE # 3. IMPROVE NATURAL ASSET MANAGEMENT						
Indicator #1 Percentage of applications reviewed by the Coastal Zone Management Unit using a systematic, objective assessment of risk based on the national coastal risk information and planning platform (NCRIPP)	Percentage	0	2019	90	Coastal Zone Management Unit to provide information from NCRIPP	

Indicators	Unit of measure	Baseline Value	Baseline Year	Target – 2023	Means of verification	Observations
Indicator #2 Net weight of glass, plastic and scrap metal received at the Sustainable Barbados Recycling Center	Tons	322.56	2019	258	Product summary from the Sustainable Barbados Recycling Center for year ending	This indicator measures a reduction in the amount of glass, plastic and scrap metal received at the Sustainable Barbados Recycling Center. The changes to the legislation will result in Brokers directly receiving more of this type of waste (as it will be sorted before getting to the recycling center) and thus the recycling center should receive less waste from these materials.
SPECIFIC OBJECTIVE # 4. IMPROVE DISASTER RISK MANAGEMENT AND RESILIENCE						
Indicator #1 IGOPP Risk Reduction 1-A Central Policy Coordination and Articulation score	Percentage	20	2019	60	IDB to conduct new iGOPP at the end of the program	
Indicator #2 Volume of low and middle-income housing retrofitted or constructed by the Government of Barbados to support resilience	Units	0	2018	500	UDC	

OUTPUTS FOR THE FIRST OPERATION

Outputs	Unit of measure	Baseline Value	Baseline Year	End of the First Operation	Means of verification	Observations[2]
SPECIFIC OBJECTIVE # 2. IMPROVE EFFICIENCY AND SUSTAINABILITY OF SPATIAL PLANNING, DEVELOPMENT CONTROL, AND WATER RESOURCE MANAGEMENT						
Output #1 One Planning and Development Act proclaimed	Unit	0	2019	1	Publication in the Official Gazette of Barbados	
Output # 2 One Physical Development Plan revised draft approved by Cabinet for public consultation	Unit	0	2019	1	Letter from the Government of Barbados confirming Cabinet approval and attaching a copy of the approved document	
Output # 3 Water Protection and Land Use Zoning Green Paper tabled in Parliament	Unit	0	2019	1	Letter from the Government of Barbados confirming the tabling in Parliament and attaching a copy of the tabled document	
Output # 4 One Stormwater Management Plan Update approved by Cabinet	Unit	0	2019	1	Letter from the Government of Barbados confirming Cabinet approval and attaching a copy of the approved document	
SPECIFIC OBJECTIVE # 3. IMPROVE NATURAL ASSET MANAGEMENT						
Output # 1 One Integrated Coastal Zone Management (ICZM): the Barbados Policy Framework (2020-2030) approved by Cabinet	Unit	0	2019	1	Letter from the Government of Barbados confirming Cabinet approval and attaching a copy of the approved document	

Outputs	Unit of measure	Baseline Value	Baseline Year	End of the First Operation	Means of verification	Observations[2]
Output # 2 One Returnable Containers (Amendment) Act, 2019-59 proclaimed	Unit	0	2019	1	Publication in the Official Gazette of Barbados	
SPECIFIC OBJECTIVE# 4. IMPROVE DISASTER RISK MANAGEMENT AND RESILIENCE						
Output # 1 One Barbados Comprehensive Disaster Management Country Work Program 2019-2023 approved by Cabinet	Unit	0	2019	1	Letter from the Government of Barbados confirming Cabinet approval and attaching a copy of the approved document	
Output # 2 One National Coastal Risk Information Planning Platform (NCRIPP) approved by Cabinet for use by the Coastal Zone Management Unit (CZMU) for assessing coastal development applications	Unit	0	2019	1	Letter from the Government of Barbados confirming Cabinet approval	
Output # 3 Roofs to Reefs (R2RP) Concept Note approved by Cabinet	Unit	0	2019	1	Letter from the Government of Barbados confirming Cabinet: (i) approval and attaching a copy of the approved concept note.	

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/20

Barbados. Loan ____/OC-BA to the Government of Barbados
Sustainable Development Policy Program

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Government of Barbados, as borrower, for the purpose of granting it a financing to cooperate in the execution of the Sustainable Development Policy Program. Such financing will be for the amount of up to US$80,000,000 from the resources of the Bank's Ordinary Capital, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on ___ _____ 2020)

LEG/SGO/CCB/EZSHARE-1621835735-3748
BA-L1048