

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

**BELIZE**

**CLIMATE VULNERABILITY REDUCTION PROGRAM**

**(BL-L1028)**

**LOAN PROPOSAL**

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ELECTRONIC LINKS	
<b>REQUIRED (REL)</b>	
1.	<a href="#">Pluriannual Execution Plan (PEP) and Annual Operational Plan (POA)</a>
2.	<a href="#">Monitoring and Evaluation Arrangements</a>
3.	<a href="#">Environmental and Social Management Report (ESMR)</a>
4.	<a href="#">Procurement Plan</a>
<b>OPTIONAL (OEL)</b>	
1.	<a href="#">Updating and Detailed Designs of Flood Control Works in Belize City</a>
2.	<a href="#">Feasibility and Designs of Small Scale, Nature Based Coastal Protection Works in Caye Caulker and Goff Caye, Belize</a>
3.	<a href="#">Economic Analysis</a>
4.	<a href="#">Index of Governance and Public Policy in DRM -. National Report for Belize</a>
5.	<a href="#">Hazard and Risk Reduction Works Modeling Including Climate Change Scenarios</a>
6.	<a href="#">Technical References</a>
7.	<a href="#">Synergies with other Programs</a>
8.	<a href="#">GCF Chronogram</a>
9.	<a href="#">Safeguard Policy Filter (SPF) and Safeguard Screening Form (SSF)</a>
10.	<a href="#">Program Operations Manual</a>

ABBREVIATIONS	
BCC	Belize City Council
BSAP	Belize Biodiversity Strategy and Action Plan
CBA	Central Building Authority
CC	Climate Change
CCA	Climate Change Adaptation
CRF	IDB Corporate Result Framework 2016-2019
CCVC	Caye Caulker Village Council
CZM	Coastal Zone Management
CZMAI	Coastal Zone Management Authority and Institute
DRM	Disaster Risk Management
ECLAC	Economic Commission for Latin America and the Caribbean
ECP	Environmental Compliance Plan
ESCI	Emerging and Sustainable Cities Initiative
ESMR	Environmental and Social Management Report
FMIP	Flood Mitigation Infrastructure Program for Belize City
ESS	Environmental and Social Strategy
GDP	Gross Domestic Product
GoB	Government of Belize
GSDS	Growth and Sustainable Development Strategy 2016-2019
IDB	Inter-American Development Bank
iGOPP	Index of Governance and Public Policy in Disaster Risk Management
IMF	International Monetary Fund
IRR	Internal Rate of Return
LRP	Livelihood Restoration Plan
MDAs	Ministries Departments and Agencies
MEDPITC	Ministry of Economic Development and Petroleum, Investment, Trade and Commerce
MOU	Memoranda of Understanding
MTCA	Ministry of Tourism and Civil Aviation
NCRP	National Climate Resilience Plan
NDC	National Determined Contributions
NEMO	National Emergency Management Organization
NICZMP	National Integrated Coastal Zone Management Plan
NPV	Net Present Value
NSTMP	National Sustainable Tourism Master Plan
PM	Program Manager
PMU	Program Management Unit
POD	Proposal for Operation Development
POM	Program Operations Manual
PSC	Project Steering Committee
RMI	Risk Management Index
SLR	Sea Level Rise

ABBREVIATIONS	
SPF	Safeguard Policy Filter
SSF	Safeguard Screening Form
TC	Technical Cooperation
UNFCCC	United Nations Framework Convention on Climate Change
WTTC	World Travel and Tourism Council
WB	World Bank

**PROJECT SUMMARY**  
**BELIZE**  
**CLIMATE VULNERABILITY REDUCTION PROGRAM**  
**BL-L1028**

Financial Terms and Conditions				
<b>Borrower:</b> Belize			<b>Flexible Financing Facility<sup>(a)</sup></b>	
			<b>Amortization Period:</b>	25 years
<b>Executing Agency:</b> Ministry of Works (MoW)			<b>Original WAL:</b>	15.25 years
			<b>Disbursement Period:</b>	4 years
<b>Source</b>	<b>Amount (US\$)</b>	<b>%</b>	<b>Grace Period:</b>	5.5 years
<b>IDB (Ordinary Capital<sup>(e)</sup>:</b>	10,000,000	100	<b>Supervision and Inspection Fee:</b>	(b)
			<b>Interest rate:</b>	LIBOR based
			<b>Credit Fee:</b>	(b)
<b>Total:</b>	10,000,000	100	<b>Currency of Approval:</b>	Dollars of the United States of America
Project at a Glance				
<b>Project Objective/Description:</b> The program's objective is to reduce Belize's climate vulnerability and risk through the implementation of climate resilient measures in the tourism sector and by improving the governance of Belize's Disaster Risk Management (DRM).				
<b>Special Contractual Clauses prior to the first disbursement of the financing:</b> The first disbursement will be subject to the following conditions precedent: (i) establishment of the Program Management Unit (PMU) and the appointment of the program coordinator, the project manager, the fiduciary (financial and procurement) specialists and the administrative assistant (¶3.1); and (ii) approval of the Program Operations Manual (POM) ( <a href="#">OEL-10</a> ) (including the Environmental and Social Management Report - ESMR) ( <a href="#">REL-3</a> ) (¶3.4).				
<b>Special Contractual Clauses of execution:</b> Other special conditions for execution are included and described in the ESMR (see Annex B of the EMSR).				
<b>Exceptions to Bank Policies:</b> None				
Strategic Alignment				
<b>Challenges<sup>(c)</sup>:</b>	SI	<input type="checkbox"/>	PI	<input checked="" type="checkbox"/>
			EI	<input type="checkbox"/>
<b>Cross-Cutting Themes<sup>(d)</sup>:</b>	GD	<input type="checkbox"/>	CC	<input checked="" type="checkbox"/>
			IC	<input checked="" type="checkbox"/>

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

<sup>(b)</sup> 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.

<sup>(c)</sup> SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

<sup>(d)</sup> GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

<sup>(e)</sup> Pursuant to Document AB-2990, the disbursement of Loan resources will be subject to the following maximum limits: (i) up to 15% during the first 12 months; (ii) up to 30% during the first 24 months; and (iii) up to 50% during the first 36 months. All these periods will be counted from the time the loan operation is approved by the Board of Executive Directors (¶2.2).

## I. DESCRIPTION AND RESULTS MONITORING

### A. Background, Problem Addressed, Justification

- 1.1 **Background.** Belize is a small, open, and export-based economy. Annual economic growth rates have fluctuated over the past ten years, ranging from 9.3% in 2003 to -0.8% in 2016, reflecting the country's high vulnerability to external shocks such as changes in trade and natural disasters. The fiscal deficit has been expanding, reaching 8% of the Gross Domestic Product (GDP) in 2016, and driving public sector debt to 100% of GDP ([IMF, 2017](#)).<sup>1</sup> After four years of missing its fiscal targets, the Government of Belize (GoB) is proposing severe cuts on capital expenditure and increases in tax revenues for the 2017/18 fiscal year. The fiscal adjustment may hamper the government's capacity to tackle external shocks, such as natural disasters and other challenges caused by the negative effects of Climate Change (CC).
- 1.2 The tourism industry is a major economic pillar for Belize, is the largest foreign exchange earner and most important productive sector, accounting for 38% of total GDP ([WTTC, 2017](#)).<sup>2</sup> As of 2016, the sector generates 50,000 jobs (formal and informal) that represent 34.3% of the labor force and is expected to rise to 91,000 jobs by 2027 (43.2% of the projected labor force) ([WTTC, 2017](#)). Moreover, the GoB has identified sustainable tourism growth as critical to its continued national development in [Belize's Horizon 2030 Strategy](#). What is more, the Growth and Sustainable Development Strategy 2016-2019 (GSDS) built upon the strategies of Horizon 2030 and set a detailed hierarchical framework of inter-related guidelines on priorities and specific actions to be taken to meet development goals set for 2019. These development goals include improving Belize's competitiveness as an eco-tourism destination and enhancing the climate resilience and sustainable management of Belize's coastal zone.
- 1.3 **Natural coastal capital is a key asset for Belize sustainable development.** It is estimated that Belize's natural coastal capital provides [coastal protection services equivalent to US\\$2.5 billion](#). Coral reefs are arguably the most important natural coastal asset. Without the Belize Barrier Reef, storm surges from tropical cyclones would be able to move several kilometers inland. In terms of the tourism industry, coral reef biodiversity supports activities such as diving, snorkeling and sport fishing. Some 60% of Belize's 900,000 tourist visitors per year visit the Belize Barrier Reef and offshore islands ([Cherrington, E. 2014](#)).
- 1.4 **Problem Addressed.** According to the Global Climate Risk Index, Belize is one of the countries most affected by extreme weather events on the basis of losses as a proportion of GDP<sup>3</sup> ([Sonke et al., 2015](#)). Losses are mainly associated with tropical cyclones (hurricanes and tropical storms) that impact Belize with strong winds, storm surge, heavy rains, coastal erosion, and flooding ([WB, 2010](#)). From 1930 to 2016, Belize was hit by 16 major tropical cyclones (on average one every five years), affecting 287,670 persons, and causing US\$635 million in losses ([Guha-Sapir et al., 2017](#)). Direct damages by single events range from

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<sup>1</sup> Values for 2016.

<sup>2</sup> See [OEL-6](#) for complete list of references.

<sup>3</sup> Belize is classified as the 8<sup>th</sup> country worldwide in terms of disaster losses as a proportion of GDP.

US\$54 million (4.2% of GDP) to US\$262 million (32% of GDP), with average annual losses of US\$5 million, approximately 0.5% of GDP ([WB, 2010](#)). In addition, rehabilitation efforts after extreme weather events put additional pressure on the country's limited fiscal resources and are one of the reasons why Belize's public debt soared in the first half of the 2000s ([IMF, 2008](#)). For example, the GoB reconstruction efforts following Hurricane Keith (2000) amounted to 3% of GDP ([IMF, 2001](#)).

- 1.5 Belize, as a low-lying Caribbean coastal country, is highly vulnerable to the effects of CC, in particular increasing sea surface temperatures, Sea Level Rise (SLR) and increasingly extreme events ([IPCC, 2007](#)). Rising sea temperatures coupled with the environmental impacts of human based activities are destroying natural coastal capital,<sup>4</sup> particularly mangroves, coral reefs and seagrasses, reducing their [cumulative wave buffering capacities](#). Recent surveys of Belize's 140 reefs found that live coral cover has been reduced from 25%-30% in the mid-1990s to approximately 11% by 2006 ([IDOM&IHC, 2016a](#)). Loss of natural coastal capital coupled with SLR and more intense and frequent extreme events are expected to increasingly lead to storm surge and coastal flooding. Among CARICOM countries, Belize is one where the anticipated economic losses and damages projected for a 1m SLR will be the greatest in absolute economic terms ([Simpson et al., 2010](#)).
- 1.6 Tourism is particularly vulnerable to climate risk and vulnerability that will be exacerbated by climate change. None of Belize's outer cayes exceed 3-4 meters above sea level ([CARIBSAVE 2012](#)). On the mainland, Belize's coastal plain topography encompasses extensive areas below 10 meters above sea level - a zone identified as highly vulnerable to flooding and impacts from extreme weather events ([ECLAC et al., 2016](#)). As approximately 94% of Belize's 291 tourism facilities- 263 accommodation facilities and 28 tourist attractions- are located within 0-5 meters above sea level ([CARIBSAVE 2012](#)), historically, the tourism sector has been hit the hardest by tropical cyclones. Following Hurricane Keith (2000), this sector reported losses equivalent to 29% of GDP (US\$80.2 million), and after Hurricane Dean (2007) losses amounted to 0.4% of GDP (US\$4.7 million).<sup>5</sup> The recent passage of Hurricane Earl (August 2016) further highlighted the high level of climate vulnerability of the tourism sector given that approximately 70% of the hotel room stock was impacted, approximately 3% of coral reefs were damaged and several beaches experienced significant sand loss, reducing the buffering effects of natural coastal capital, and consequently increasing the exposure and vulnerability of the coastline to extreme climate events ([ECLAC et al., 2016](#)).
- 1.7 The climate vulnerability of the tourism sector will be exacerbated by the projected increase of hurricane intensity, SLR and coastal erosion resulting from CC and losses of coastal ecosystem services (§1.5). If strategic interventions to reduce the climate risk of the sector are not undertaken, the tourism sector projected disaster losses will reach 2.5% of GDP by 2050 (more than four times the current disaster losses) ([Simpson et al., 2010](#)). According to CC projections if disaster risk management measures are not implemented ("do nothing" scenario) for a one

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<sup>4</sup> Natural coastal capital can be defined as the stocks of natural assets and services within the coastal zone from which humans derive a range of economically valuable benefits and ecosystem services that support anthropogenic activities. (Schuhman 2012).

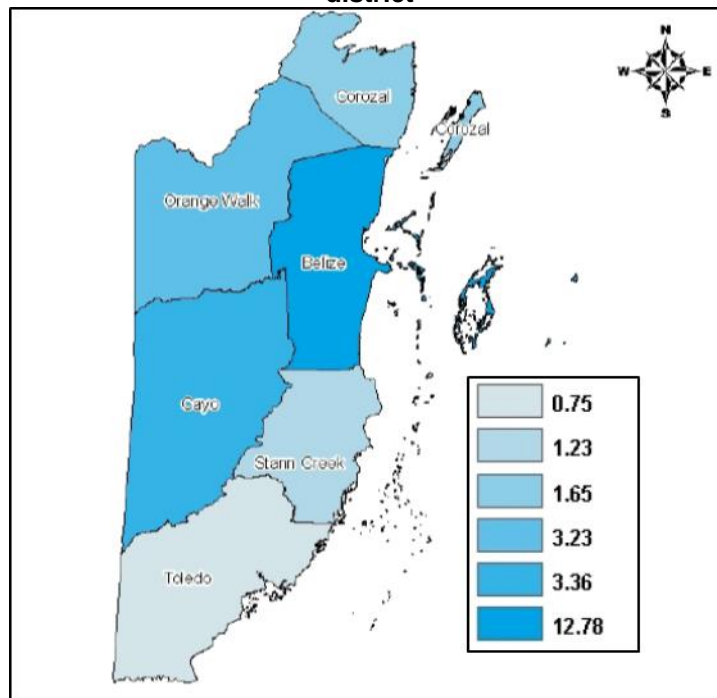
<sup>5</sup> Losses estimated as total damage and losses from ECLAC reports for Hurricane Dean, Hurricane Keith, Tropical Depression 16 and Hurricane Earl.



meter SLR could result in up to 73% of the major tourism properties impacted by severe erosion and coastal flooding, hampering the sustainable growth of the sector ([CARIBSAVE 2012](#)). Additionally, the loss of coastal natural capital, including beaches will impact directly tourist fluency and expenditure.

- 1.8 At the national level, probabilistic risk modeling analysis shows that the area with higher probability of catastrophic hurricanes is the Belize District (Figure I-1). Belize District accounts for more than 60% of the country's annual accommodations ([BTB, 2015](#)) and includes Belize City and important touristic areas, that are highly vulnerable to CC, such as Caye Caulker and Goff's Caye.<sup>6</sup>

**Figure I-1. High hurricane risk (wind) in Belize District evidenced by the annual average loss (US\$ million) per district**



Source ([ERN, 2010](#))

- 1.9 Belize City, located on the seaside, is the commercial and economic hub of the country, concentrates 16% of its population, and serves as the gateway for most overnight visitors and cruise ship passengers. Probabilistic flooding risk analysis shows that Belize City is where most of the potential hurricane and flood losses of Belize District are concentrated (current average annual losses by floods<sup>7</sup> in the

<sup>6</sup> Ambergris Caye, the second largest tourism destination of the country, is located in Belize District. Exposure to hurricanes is similar in Ambergris Caye, Caye Caulker and Goff's Caye. Nonetheless, the lower vulnerability of Ambergris Caye leads to lower levels of risk, which has been evidenced by the recent disasters that have hit in the area. Lower vulnerability in Ambergris Caye stems from a higher coping capacity observed in hotels and other businesses, which have carried out significant coastal zone management investments. Conversely, Caye Caulker is characterized by small hotels and Goff's Caye is public land.

<sup>7</sup> The Average Annual Loss is the mathematical average of the potential disaster annual losses.

city amount to US\$2.6 million or 0.9% of current local GDP).<sup>8</sup> The National Sustainable Tourism Masterplan identified the renovation of downtown Belize City, where most of the city's hotels and colonial-heritage buildings are located, as a key development pillar for the country ([GoB, 2016](#)). However, downtown Belize City is flooded with more than 1 meter depths every 5-10 years generating significant economic and human damages ([OEL-5](#)) and hampering its development as a touristic area ([IDOM&IHC, 2016b](#)). Existing evidence ([Hallegatte et al, 2017](#)) suggests that recurrent floods may prevent high vulnerability families in downtown Belize (81% of families reside in low-quality buildings) from escaping poverty.

- 1.10 In a study of the four main emerging tourism destinations of Belize ([University of Belize and ERI, 2015](#)), Caye Caulker was identified as the most important emerging destination with a total of 83,361 visitors per year generating at least US\$63.7 million in direct revenues. When the indirect earnings of tourism are also accounted for, these numbers increase to US\$76-US\$89 million for Caye Caulker. Goff's Caye is also an emerging local and cruise ship tourist destination, being one of the last remaining public cayes in Belize. Revenues from Goff's Caye support the operations of the Coastal Zone Management Authority and Institute (CZMAI), the only statutory agency designated to develop and coordinate the implementation of national coastal zone management plans and activities. Considering SLR projections associated with CC (¶1.4), a 'do nothing' scenario will be particularly critical for low-lying cayes like Goff's Caye and Caye Caulker where a one meter SLR scenario will likely result in a 96% loss of Caye Caulker's beach ([CARIBSAVE 2014](#)).
- 1.11 **Recent advances in the sector.** The GoB has recognized that future growth of its economy depends on the sustainability of the tourism industry, reliant on effective mainstreaming of Climate Change Adaptation (CCA) and Disaster Risk Management (DRM) measures. Therefore, to-date the GoB has endorsed 24 key national policies and legislations to mainstream CCA and DRM in environmental management, land use planning, building construction and permitting, sustainable tourism, infrastructure management and integrated coastal zone management ([CARIBSAVE 2014B](#)); ([CARIBSAVE 2014C](#)). Decisive policy reforms include the [Coastal Zone Management Act Chapter 329](#) which established the CZMAI in 1998 with the mandate to develop a [National Integrated Coastal Zone Management Plan](#) (NICZMP) approved in 2016. The endorsement of the [Horizon 2030 Development Strategy and Framework](#) in 2010 is also relevant as it identified sustainable tourism as a strategic pillar to national development and set some climate resilient development targets to be attained by 2030. The 2013 endorsement of the [National Climate Resilience Plan](#) (NCRP) established strategies to incorporate climate resilience into national development planning and prioritized climate resilient investments. These strategies were consolidated in the 2013 [NICZMP](#), which articulated climate resilient ICZM objectives and strategies specific to nine (9) subdivisions of the Belizean coastal zone. Most recently, the updating of the [Belize Biodiversity Strategy and Action Plan](#) (2016-2020) (BSAP) in 2016 recognized the importance of coastal ecosystems to DRM and advocated for integrated approaches to the conservation of Belize's biodiversity.

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<sup>8</sup> Local GDP is an estimation of GDP just for Belize City.

- 1.12 Additionally, as a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), Belize has submitted and ratified its Nationally Determined Contribution (NDC) recognizing the need to transition to a “low carbon development while strengthening its resilience” and especially highlighting adaptation as a national priority in key sectors, economic activities, society and the environment. The NDC identifies sectors of focus for short term adaptation and long-term resilience which include coastal and marine resources, land use and human settlements, and tourism among others. The NDC explicitly identifies the need to implement actions to strengthen the capacity of the CZMAI to coordinate and implement coastal adaptation interventions in the Belize District as well as the need to mainstream CC into policies and strategies in key coastal tourism areas to effectively address the adaptation challenges.
- 1.13 **Bank support for climate risk identification and reduction.** The Bank is supporting the GoB in the implementation of CCA and DRM policies in tourism hotspots and climate risk at national level and in critical areas such as Belize City and Caye Caulker. At the national level, the Bank has supported the Technical Cooperation (TC): (i) “Support for the implementation of an Integrated Disaster Risk Management Plan” (ATN/OC-11994-BL); and (ii) “Country Risk Evaluation and Indicators of Disaster Risk and Risk Management” (ATN/MD-11335-RG), which financed a probabilistic risk assessment of Belize and for Belize City, as well as the Indicators of Disaster Risk and Risk Management for the country. In Belize City, the Bank has supported climate risk identification through the loan “Flood Mitigation Infrastructure Program for Belize City” (FMIP) (2566/OC-BL) and the TCs, “Implementation of the Emerging and Sustainable Cities Initiative (ESCI) in Belize City” (ATN/OC-15100-BL); and risk reduction through the FMIP. In Caye Caulker, through the loan “Sustainable Tourism Program II” (3566/OC-BL) and the TC “Caribbean Climate Smart Islands Program” (ATN/OC-14811-RG), the Bank is supporting climate risk identification through baseline data collection on coastal processes and modelling of risk-resilient designs for shoreline stabilization, CCA, disaster management and preparedness plans.
- 1.14 **Ongoing challenges for the climate risk reduction sector.** The vulnerability of Belize City and offshore cayes to climate risks such as extreme weather events, erosion and flooding is so high that additional investments in disaster risk and coastal zone management remain a critical need. This leads to continued economic losses and impacts the sustainability of tourism activities and revenues.
- 1.15 In Belize City, the FMIP investments so far have had a significant impact reducing flooding risk in the northern part of the city through the building and improving of canals. Nevertheless, without additional risk reduction investments, considering CC scenarios coupled with projections for SLR, potential hurricane and flood annual losses are projected to increase to US\$12.1 million by 2050 (a 466% increase) in Belize City ([IDOM&IHC, 2016a](#)). In order to adapt Belize City to SLR and CC the canals need to be complemented ([IDOM&IHC, 2016a and M&K, 2016](#)) with a set of measures to reduce rain, riverine and coastal flooding, considering CC scenarios, through a combination of: (i) levees to separate the water regime inside the city from the river and sea level water regime outside; and (ii) sluices, tidal gates and pumping stations, to control the water table in the city. An FMIP study ([M&K, 2016](#)) recommended that the first investments should be

focused in reducing high probability rain flooding, through a system of pumps located in Orange Street, (Figure I-2), which is the area that concentrates the most flooding risk. These priority investments to reduce rain flooding will be carried out by the proposed program. For the preparation of the program the conceptual designs originally generated by the FMIP and ESCI projects have been further developed and completed.

**Figure I-2. Annual average loss (US\$/m2) projected by flood for Belize City\***



\* The blue circle indicates the location of Orange Street.

Source ([M&K, 2016](#)).

- 1.16 The east beaches of Caye Cauker are affected by an intense process of erosion, caused by currents that run parallel to the shore. The erosion particularly affects Palapa Gardens Beach- one of the last, public, sandy beaches on the caye. Over the years, and in light of the importance of this zone to tourism, there have been many beach nourishment initiatives undertaken by the GoB to address this persistent erosion. However, beach nourishment projects have had a short life span as there is no coastal feature in place to stem the erosive currents. Another problem is, due to its low-lying topography, Caye Caulker is vulnerable to storm surge emanating from extreme storm events. There are also man-made causes of beach erosion on the Caye, as natural vegetation such as mangroves have been removed for coastal settlements. This has reduced the natural barrier to flooding caused by storm surge. Investments would therefore need to be focused on building a natural barrier to stem the erosive currents and trap sand, to reduce erosion on Palapa Gardens Beach, and revegetation to replace lost mangroves, with revegetation designs compatible with the tourism activities.
- 1.17 Goff's Caye is highly vulnerable to erosion and the impacts of extreme weather events driven by CC and exacerbated by unsustainable human practices. Approximately 24,000 visitors per year, an average of 70 visitors per day, visit the

Caye<sup>9</sup> which is less than one ha in size. The existing tourist infrastructure, a visitor center, or palapa, built on a concrete foundation, does not incorporate an appropriate nature-based design and as such contributes to the erosion and storms impact. The current placement of the visitor center close to the beach amplifies wave action and erosion. The toilet facilities of the Caye are not connected to a sewage system, instead discharging raw sewage into the sea, degrading marine water quality and in turn coral reefs. There is no management plan to mitigate the impact of those visitors, including the absence of mooring zones or signage, to control anchor damage to the coral reefs.

- 1.18 A comprehensive reduction of climate vulnerability requires, together with risk reduction investments, the improvement of Belize's CCA and DRM national policy framework following the principles of the [Sendai Risk Reduction Framework \(ECLAC et al, 2016\)](#). Despite improvements in the CCA and DRM legal framework, risk identification studies and risk reduction investments, recent studies ([Lacambra et al., 2017](#)) provide evidence of Belize's low DRM governance, with an Index of Governance and Public Policy in Disaster Risk Management (iGOPP)<sup>10</sup> of 17.24%, the 12<sup>th</sup> lowest of 14 LAC countries evaluated, and with low values in key policies required for an effective climate vulnerability reduction such as risk identification (with an sub-index of 8%), risk reduction (sub-index of 21%) and financial protection (sub-index of 8%).
- 1.19 The Disaster Preparedness and Response Act (approved June 21, 2000) is the primary legislation governing DRM in Belize. The Act established the National Emergency Management Organization (NEMO) as a Department of Government, headed by a National Emergency Coordinator. Even though the Act assigns broad responsibilities for "coordinating the general policy of the government related to the mitigation of, preparedness for, response to and recovery from emergencies and disasters," NEMO's Operational Committees are focused on disaster preparedness and response. There are very limited DRM regulations and technical guidance available, which limits DRM mainstreaming into public and private sector institutions.
- 1.20 **Risk Management Index (RMI) for Belize.** Together with low governance for DRM, Belize demonstrates an unsatisfactory performance on the topic, with a RMI of 34.<sup>11</sup> Regarding risk identification, a persistent challenge is the incipient generation of accessible hazard and risk information for climate vulnerability reduction planning and limited capacities to produce and analyze the information.<sup>12</sup> The absence of a centralized risk information system, sourcing existing information from all sectors and driving the different sectorial planning processes and public investment projects, prevents a comprehensive approach to DRM ([Lacambra et al., 2017](#)). For example, even though Belize has approved an Integrated Coastal

<sup>9</sup> Statistics on tourism visitation is gathered by the CZMAI.

<sup>10</sup> The iGOPP measures if a country has the appropriate legal, institutional and budgetary conditions to implement a public policy on DRM. It was developed by the IDB in 2012-2014 and has been implemented to date in 13 countries. The iGOPP consists of a main index and six corresponding sub-indices: (i) General Framework of Governance for DRM; (ii) Risk Identification and Knowledge; (iii) Risk Reduction; (iv) Disaster Preparedness; (v) Post-Disaster Recovery Planning; and (vi) Financial Protection. The main index and sub-indexes are calculated on a scale of 0% (minimum) to 100% (maximum), with five qualification levels (0%-20%) Low, (21%-40%) Incipient, (41%-70%) Good, (71%-90%) Very good and (91%-100%) Outstanding.

<sup>11</sup> A RMI index value below 50 is considered unsatisfactory.

<sup>12</sup> Evidenced by values of IR3 and IR4 indicators of the RMI for Belize.



Zone Management Plan ([GoB, 2016](#)), its effective implementation is hampered by a lack of human capital resources trained to properly collate, manage and share coastal data relevant for risk reduction. With regards to the aspect of risk reduction, disaster risk is not sufficiently integrated in national development planning, watershed management, building codes, land zoning and use, and coastal protection.<sup>13</sup> In addition, although the Belize Building Act (2003) created the Central Building Authority (CBA) as the entity responsible to authorize building permits, the CBA has no regulations to build in tourism coastal areas, which is critical to promote a tourism resilient to disasters ([ECLAC et al., 2016](#)).

- 1.21 Financial protection shows the lowest governance and performance, evidenced by the lack of a financial protection strategy<sup>14</sup> and the incipient development of private insurance and reinsurance.<sup>15</sup> The country has not articulated a national strategy for financing of disaster risk and there is no requirement of insurance of public or private sector infrastructure and property beyond the financing period. Approximately 50% of the housing stock is underinsured, and the vast majority of low-income housing is either uninsured or uninsurable ([WB, 2010](#)). In order to improve this public policy, a financial protection strategy is required to define the most efficient financial tools (risk reduction investment, insurance, disaster funds) to manage Belize's climate risk, particularly for the most relevant and vulnerable economic sectors: tourism and agriculture ([ECLAC et al., 2016](#)).
- 1.22 **Bank experience in the sector and lessons learned.** The experience, inputs and lessons learned of previous and current programs in Belize and other countries has been considered in the design of this program:

**Table I-1. Lessons Learned**

Project	Lesson Learned	Incorporation into the program design
<b>ATN/MD-15572-BL, ATN/OC-15573-BL</b> "Support for Improving Disaster and Climate Resilience in Sustainable Tourism"	Nature based and hybrid approaches to coastal engineering are cost effective and have high impact, serving the dual purposes of coastal protection and enhancing the natural assets of beaches which are essential tourism products.	Component 1 investments incorporate hybrid and nature based approaches to protect coastal zones of Caye Caulker and Goff's Caye.
<b>2566/OC-BL</b> "Flood Mitigation Infrastructure Program for Belize City" <b>ATN/OC-15100-BL</b> "Implementation of the Emerging and Sustainable Cities Initiative in Belize City"	The flood control designs in coastal areas should consider CC scenarios and the combination of rainy, pluvial and coastal flooding. The canals should be combined with pumping, dredging and gates.	In Component 1 the studies used to identify the investment and to design the feasibility and final designs consider those elements.

<sup>13</sup> Evidenced by values of RR1, RR2 and RR3 indicators of the RMI for Belize.

<sup>14</sup> Evidenced by the iGOPP FP indicator.

<sup>15</sup> FP6 indicator of the RMI for Belize.

Project	Lesson Learned	Incorporation into the program design
<b>2566/OC-BL</b> “Flood Mitigation Infrastructure Program for Belize City”	Relevance of having an appropriate strategy for maintenance of the flood control works	Appropriate strategy for maintenance has been considered and ownership of the beneficiaries confirmed in the public consultations.
<b>3622/GR-HA:</b> “Mitigation of Natural Disaster Program II”	Appropriate techniques to carry out the cost/benefit analysis based on the probabilistic estimation of avoided losses.	It was considered in the design of the cost/benefit analysis.
<b>2060/OC-BL</b> “Sustainable Tourism Program I”	Delays in the startup of execution because of opposition from affected parties  Importance of ensuring proper maintenance of infrastructure particularly on the side of the Belize City Council (BCC).	Informal and formal consultations were carry out in Caye Caulker and the designs were adjusted accordingly. Very low maintenance designs were considered and an appropriate strategy for maintenance has been discussed with BCC.
<b>3240/OC-PE</b> “Program to Reduce the Vulnerability of the State to Disasters III” <b>3487/BL-BO</b> “Disaster Risk Management Program I” <b>3666/BL-BO</b> “Disaster Risk Management Program II”	Used the iGOPP and RMI to evaluate DRM and CCA public policies and design strategies to improve governance and performance	iGOPP and RMI recommendations for Belize were used to design Component 2.

1.23 **Program design.** In alignment with regional best-practices, lessons as well as national priorities and risk reduction strategies, the program combines science-based flood and erosion control infrastructure, with designs that incorporate CC scenarios, and soft solutions such as individual and institutional capacity building and ecosystem-based responses to reduce overall climate risks ([Allen et al., 2012](#)). Geographically, the program is focused on the most vulnerable areas to climate risk with strategic importance for the tourism sector: Belize City, Caye Caulker and Goff’s Caye. The infrastructure investments in these areas are complemented by activities to improve DRM and CCA governance and performance, designed based on the results of iGOPP and RMI indexes. The design of the evaluation of the program considers an innovative methodological approach for rigorous quantitative empirical risk assessment, which traditionally resorts on risk simulations. The DRM and CCA capacity building activities of the program will complement the interventions of the technical cooperation ATN/JF-16295-BL, which includes training activities for key stakeholders in Belize on DRM, ACC and coastal management. Regarding the maintenance of the works Under the previous Bank operation 2566/OC-BL which closed in November 2016; the Belize City Council (BCC) benefited directly with regards to improving its

maintenance capacity. The program provided institutional strengthening in the form of development of a Routine Maintenance Management System, training to implement the system and the provision of equipment to undertake the maintenance. The final design consultant for the works under the current operation will prepare the maintenance requirements and budgets for input into the BCC's maintenance system. This will allow the BCC to adequately plan and budget for the maintenance of the works after its completion.

- 1.24 **Synergies with other programs.** The program has strong synergies with other IDB investment projects. It will complement the areas of intervention and type of investments of “Flood Mitigation Infrastructure Program for Belize City” (2566/OC-BL) and “Sustainable Tourism Program II” (3566/OC-BL) in Belize City and Caye Caulker, respectively, and the design of the program is based on the studies and national priorities identified by other IDB projects (¶1.13). It will complement the intervention of the World Bank and Adaptation Fund program, “Belize Marine Conservation and Climate Adaptation Project,” which focuses on coral reef restoration, and it will complement climate resilience capacity building programs from other donors (WB, DFID, EU), filling the gap in coastal management capacities, financial risk and risk information system that were identified through the recent application of iGOPP (¶1.18) and RMI indexes (¶1.20) (see [OEL-7](#)).
- 1.25 **Beneficiaries.** It is estimated that at a minimum the program will directly benefit 7,223 people, with 7,079 of them located in Belize City and 144 people residing in Caye Caulker. In addition, at least 13 licensed businesses in the accommodation and recreation sectors are in the project's area of influence, thus directly benefiting from the flood control works. Eighty-one percent of the beneficiaries in Belize City reside in low-quality buildings with basic construction materials (often auto-built), simple designs and overall poor quality, with some instances where basic services are lacking and waste materials are used for walls and roofs ([OEL-5](#)). The deficient quality of the residential building stock makes this population susceptible to the damaging effects of floods. Their vulnerability is exacerbated by their socioeconomic condition. Almost half of the country's urban poor reside in Belize City and Caye Caulker. Preliminary information from the pilot survey conducted for the program's impact evaluation suggests that per capita income in the intervention sites is 14% lower than the national average of US\$4,900, but more accurate estimates will be provided when the baseline survey is completed. During the construction of the works the project will generate 70 direct jobs. The population exposed to flooding risk in Belize City and Caye Caulker (94,980 people in Belize City and 1,300 people in Caulker) will benefit indirectly from the capacity building activities with local and national stakeholders.
- 1.26 **Results effectiveness.** The Intergovernmental Panel for Climate Change ([Allen et al., 2012](#)) recognized that successful strategies for climate risk management “include a combination of infrastructure-based responses and soft solutions such as individual and institutional capacity building and ecosystem-based responses.” Studies carried out by the Multihazard Mitigation Council of the United States ([MMC, 2005](#)) on the effectiveness of disaster risk reduction investments, similar to the ones proposed by the program, evidenced high benefit/cost ratios, with an average of US\$4 reduction in disaster losses by each dollar invested in disaster risk reduction works. Other studies show that



climate-risk information systems are highly efficient, with an average of US\$15 of benefit for each dollar invested ([WB & UN, 2010](#)). In addition to the efficiency and effectiveness of disaster risk management investments, there is growing international experience demonstrating that an integrated, ecosystem- and resilience-based approach to managing coastal areas is an economically feasible and effective response to reduce climate risks and to support sustainable tourism. A recent study on the effects of the condition of marine and coastal environments on tourism in Barbados found that visitors assign high values to improved marine water quality, high resilience to natural disasters, large marine biodiversity, and wider beaches. For example, the study found that tourists were willing to pay up to US\$640 more for a one-week stay at locations where coral reefs hosted increased numbers and variety of marine life; conversely, they would pay US\$1,000 less per week at places where coral reefs have poor quality, and US\$800 less per week for stays at very narrow beaches ([Schuhmann, 2017](#)). Moreover, interventions to improve marine and coastal environments can have high benefit-cost ratios. In another study, Banerjee (2016) analyzed the effects of Bank's 2001-2010 Coastal Infrastructure Program in Barbados, which invested US\$25 million in infrastructure development to revert and prevent the erosion of two important beaches, producing annual benefits of US\$10.35 million for tourists and US\$2.75 million for local residents ([Banerjee et al, 2016](#)).

- 1.27 **Bank Country Strategy with Belize.** The program is consistent with the Bank's Country Strategy with Belize 2013-2017 (GN-2746) which identified tourism as one of four priority areas for support, and disaster risk management and climate change adaptation as cross-cutting issues. The program will contribute to increase the Country Strategy's indicator "Total overnight visitor expenditures," in two ways: (i) shoreline stabilization measures in Caye Caulker and Goff's Caye will contribute to healthy beaches increasing tourist expenditure ([Banerjee et al, 2016](#)); and (ii) flood risk reduction measures in Caye Caulker and Belize City will contribute to reduce the impact of floods in hotels, improving their recovery in the aftermath of a disaster and avoiding tourist expenditure losses. The program is aligned to the country objective of "Improve road infrastructure to facilitate trade and integration and access to emerging tourist destinations", by reducing flooding risk in the streets of Belize City. The program is included in the 2017 Operational Program Report (GN-2884). The program will complement the interventions of the Flood Mitigation Infrastructure Program, in the areas with highest flooding risk of Belize City.
- 1.28 **Strategic alignment.** The program is consistent with the Update to the Institutional Strategy (UIS) 2010-2020 (AB-3008) and is strategically aligned with the development challenge of (ii) productivity and innovation, as flood mitigation measures in tourism areas (Component 1) will contribute to increase the sector's resilience to disasters, reducing losses of tourist expenditure, preserving natural and cultural capital, lessening economic burden and thus increasing productivity. The program also contributes to the Corporate Results Framework (CRF) (GN-2727-6) indicators of (i) "beneficiaries of improved management and sustainable use of natural capital," as a result of the natural enhancement activities of Component 1; and (ii) "government agencies benefited by projects that strengthen technological and managerial tools to improve public service delivery," through the capacity building activities of Component 2. The program is also aligned with the cross-cutting themes of: (i) climate change and environmental

sustainability; and (ii) institutional capacity and rule of law, as the implementation of the National Climate Risk information system (Component 2) will contribute to the understanding of climate change impacts and the development of institutional disaster risk management capacities. According to the [joint MDB approach](#) on climate finance tracking, 100% of total IDB funding for this project results in climate change adaptation activities. This contributes to the IDB's climate finance goal of 30% of combined IDB and IIC operational approvals by year's end 2020. The program will contribute to the CRF through said CDR indicators and the following Auxiliary Indicators: (i) households protected from flood risk; (ii) terrestrial and marine areas with improved management; and (iii) countries that have improved disaster risk management.

- 1.29 In addition, the program is consistent with the Environment and Biodiversity Sector Framework Document (GN-2827-3), and the Climate Change Sector Framework Document (GN-2835-3), and aligned with the Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (GN-2609-1) and the Strategy for Sustainable Infrastructure for Competitiveness and Inclusive Growth (GN-2710-5).

**B. Objective, Components and Cost**

- 1.30 **Objective.** The program's objective is to reduce Belize's climate vulnerability and risk through the implementation of climate resilient measures in the tourism sector and by improving the governance of Belize's DRM. The program will be organized in two components.
- 1.31 **Component 1. Climate risk reduction in the tourism sector (US\$8.53 million).** This component will include: (i) implementation of climate resilient flood control measures that consider Climate Change scenarios to protect public and private infrastructure in tourism and residential areas of downtown Belize City; and (ii) shoreline stabilization measures on public land in public tourism areas in Caye Caulker and Goff's Caye.
- 1.32 In Belize City, this component will finance studies, works and the procurement of goods and services for flood reduction investments in Orange Street, an area that concentrates comparatively higher climate risk. The proposed risk reduction system's backbone is a pumping station that is designed to drain the rainfall accumulated in each rainfall spell within the project area towards the sea. It will connect the low areas through a network of canals, mainly the Collet Canal and East Canal. The pumping facility, located on the coastline at the southern outlet of Collet Canal, includes low maintenance helicoidal (screw) pumps to raise the water to the sea. For the system to be effective, it will include three gates to isolate it from the surrounding water (Haulover Creek, West Canal and the sea, up to a certain level) so that no water enters from the outside. Additionally, a bridge will be built in Belama phase IV neighborhood, to improve the safety of a canal upgraded by the Flood Mitigation Infrastructure Program in Belize City.
- 1.33 In Caye Caulker, the component will finance works and the procurement of goods and services for shoreline stabilization works at Palapa Gardens Beach. The

investments include: (i) the installation of a mangrove groin<sup>16</sup> on the northern end of the beach; and (ii) planting of trees and other suitable vegetation at strategically placed locations. The mangrove groin is designed to function as a sand trap, reducing the effects of erosion on the Beach and encouraging beach accretion. The maintenance of a wider beach is expected in turn to boost tourism investments and activities. Moreover, the mangrove groin will protect infrastructure and settlements along and down-drift from the approximately 50 meters of beach frontage. Finally, the strategic planting of trees and other vegetation will prevent beach erosion and enhance the aesthetics of the beach, thus enhancing tourism activities.

- 1.34 In Goff's Caye, the component will finance works and the procurement of goods and services to reduce the impacts of intense tourism activities on the surrounding coral reef and sea grasses which provide coastal protection ecosystem services when in healthy condition. These interventions include: (i) implementation of management and monitoring plans for reef and coastal ecosystems to inform sustainable management decision making; (ii) upgrading of Goff's Caye's public installations, including relocation of the palapa, upgrading of the bathrooms to reduce their impacts on coral degradation and coastal erosion, installation of solar panels to replace the diesel power generation system, revegetation to enhance coastal protection and to provide shading, and proper signage to engender coral reef public practices that have lower impacts on; and (iii) installation of three mooring fields for day vessels and a new pier, to avoid damage to coral reefs and sea grasses currently caused by indiscriminate mooring.
- 1.35 The [designs for the climate resilient flood control measures for Belize City](#) and the [designs for Caye Caulker and Goff's Caye interventions](#) have been completed during the preparation of the program (¶3.5).
- 1.36 **Component 2. Governance for disaster risk management and CC adaptation (US\$0.62 million).** This component will finance studies and the procurement of services for: (i) consultancy to develop and disseminate a web based platform that could be input to a National Climate Risk Information System to share existing climate risk information, including an estimation of cost of maintenance in the first two years and training modules in the use of the web-based platform. This will also take into account other similar national initiatives such as the National Spatial Data Infrastructure housed at the Ministry of Natural Resources; (ii) a consultancy to support the Central Building Authority through the provision of technical guide that will provide recommendations for building in coastal areas, including innovative nature-based solutions; and (iii) a consultancy to design a climate risk financing strategy for the tourism and agriculture sectors.

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<sup>16</sup> A mangrove groyne is a rip-rap rock structure built perpendicular to the shore over which mangroves are planted. Unlike traditional groynes, these are semi permeable and become more stable over time as the mangrove rooting system matures.

**Table I-2. Program Costs**

<b>Investment categories</b>	<b>IDB (US\$)</b>	<b>%</b>
<b>Component 1: Climate risk reduction in the tourism sector</b>	<b>8,539,461</b>	<b>85.3</b>
Climate resilient flood control measures in Belize City	6,960,720	69.6
Investments in Caye Caulker and Goff's Caye	961,400	9.6
Environmental measures	200,000	2.0
Coastal monitoring for Goff's Caye (erosion and coral reef)	303,691	3.0
Management plans for Palapa beach (Caye Caulker) and Goff's Caye	113,650	1.1
<b>Component 2: Governance for Disaster Risk Management and CC adaptation</b>	<b>618,241</b>	<b>6.2</b>
Risk information system	478,241	4.8
Designing of building codes	70,000	0.7
Climate risk financing strategy for the tourism and agriculture sectors	70,000	0.7
<b>Project Management</b>	<b>842,298</b>	<b>8.4</b>
Technical Unit	627,298	6.3
Annual Evaluations and Audits	215,000	2.2
<b>Total</b>	<b>10,000,000</b>	<b>100</b>

### **C. Key Results Indicators**

- 1.37 Based on the indicators proposed in the IDB Country Strategy with Belize 2013-2017 (GN-2746), the CRF and the objectives pursued by the program, impacts are expected to be measured in terms of: (i) number of people protected from flood risk in the access and tourist areas of Orange St (Belize City) and Caye Caulker; (ii) avoided economic losses caused by floods in the access and tourist areas of Orange St (Belize City) and Caye Caulker; (iii) avoided tourist expenditure losses in Caye Caulker; and (iv) disaster mortality rate decline. The Results Matrix (Annex II) agreed upon with the EA shows a breakdown of result and output indicators.
- 1.38 **Economic viability.** An [economic evaluation](#) was conducted to assess the viability of flood mitigation infrastructure (pumped flood-reduction scheme) in the Orange Street area of Belize City, shore stabilization measures in Caye Caulker (nature-based and hybrid coastal-protection tourism-enhancing interventions) and Goff's Caye (soft coastal-protection strategies for climate-resilient tourist amenities), considering a discount rate of 12%. Overall, the Net Present Value (NPV) of the program is greater than US\$5.6 million. The Internal Rate of Return (IRR) of the program is robust at 18.5%. For the proposed investments in the Orange St area of Belize City, the NPV amounts to US\$3.4 million, with an IRR of 17.7%. With regard to the proposed investments in Caye Caulker, the NPV of BL-L1028 is US\$1.6 million, with an IRR of 33.2%. As for the proposed investments in Goff's Caye, the NPV equals US\$0.7 million, with an IRR of 15.5%. Sensitivity analyses were also conducted and, under the most conservative assumptions, the NPV of benefits for the Orange St area of Belize City is US\$177,515 with an IRR of 12.3%; the NPV of benefits for Caye Caulker is US\$711,623 with an IRR of 24.9%; and the NPV of benefits for Goff's Caye is US\$55,780 with an IRR of 12.4%, reflecting that the program is a viable investment from an economic standpoint.

## II. FINANCING STRUCTURE AND MAIN RISKS

### A. Financing Instruments

- 2.1 The total program amount is estimated at US\$10,000,000 that will be financed through a specific investment loan by Ordinary Capital of the Bank. The disbursement period will be 48 months. Table II-1 provides the projected disbursement per year (see also the detailed budget in the program [Pluriannual Execution Plan](#) [PEP]).

**Table II-1. Project Disbursement Projections (US\$ thousands)**

	Year 1	Year 2	Year 3	Year 4	Total
<b>BID</b>	1,533	1,500	1,936	5,031	10,000
<b>%</b>	15	15	20	50	100

- 2.2 Pursuant to Document AB-2990, the disbursement of Bank financing will be subject to the following maximum limits: (i) up to 15% during the first 12 months; (ii) up to 30% during the first 24 months; and (iii) up to 50% during the first 36 months. All these periods will be counted from the time the loan operation is approved by the Board of Executive Directors. These limits may be rendered inapplicable to the extent that the requirements set forth in the Bank's policy regarding said limitations have been fulfilled, provided that the borrower has been notified of the same in writing.

### B. Environmental and Social Safeguard Risks

- 2.3 The program has been classified as Category "B" as it is anticipated that it is likely to cause local negative environmental and social impacts for which effective mitigation measures will be implemented. Consequently, following B.3 and B.5 Directives of Operation Policy 703 (OP-703), an Environmental and Social Assessment and a Livelihood Restoration Plan (addressing physical displacement, economic displacement and economic losses, following OP-710 and OP-703), were prepared by a local consultant for the GoB. The ESA includes a description of the general environmental and social settings of the three locations where the intervention will occur (Belize City, Caye Caulker, and Goff's Caye). Key impacts and risks as: (i) physical displacement of sewerage systems of houses in Belize City; (ii) temporary economic losses for pier owners and economic displacement of fisherfolks in Belize City; (iv) displacement of chairs and vendors in Caye Caulker; and (iv) management of dredging hazardous waste in Belize City; have been identified based on the preliminary project details available to enable a good understanding of their nature and scale. The ESA includes a specific dredging and sediments management plan for Belize City that will have to be ready and finalized by the Borrower before construction. Contaminated sediments will have to be treated, neutralized, and disposed an authorized site in line with IDB policies. The LRP includes a comprehensive cadaster of people and businesses that may be physically or economically displaced and takes into consideration their possible economic losses. The LRP assessed the expected physical displacement to the sewerage systems of 22 houses close to the canals, the temporary economic losses of two pier-owners and economic displacement of six fisher folks (Belize City) and displacement of 19 artists, two vendors and one business (Palapa

Gardens area, Caye Caulker). In both cases, mitigation and compensation measures were defined for all the eligible Project Affected People (PAP). Public consultations were performed in compliance with the social and environmental policies of the Bank at all three project sites (Belize City, Caye Caulker, and Goff's Caye) during project preparation. The disaster risk defined for this project is moderate, type 1, particularly associated with possible passage of hurricanes and floods.

### **C. Fiduciary Risk**

- 2.4 Fiduciary risks in financial and procurement management are considered medium (see Annex III). The fiduciary risks include: (i) limited availability of reliable and timely financial information for decision making, (ii) inadequate support for the fiduciary management and oversight of the project, (iii) weak internal control systems and procedures/system documentation and (iv) limited knowledge of IDB procurement, disbursements and financial reporting procedures. The mitigation measures include respectively: (i) establish a separate chart of accounts for this program to facilitate accounting and reporting using the existing QuickBooks software; (ii) increase the financial management capacity of the PMU by hiring an accounts clerk with the suitable skill and qualification, preferably with experience managing donor-funded programs; (iii) establish an adequate internal control, system for the PMU and document in the Program Operations Manual (POM); and (iv) strengthen capacity within the PMU through training on the Bank's procurement, financial management procedures and requirements.

### **D. Other Key Issues and Risks**

- 2.5 The main risks identified with the GoB (all of them classified as medium) also correspond to the category of Public Management and governance, and are associated with: (i) lack of coordination between the involved ministries; (ii) lack of coordination between different initiatives in Caye Caulker; and (iii) inappropriate maintenance of the flood control works.
- 2.6 Mitigations measures are respectively: (i) inclusion of a steering committee for inter-ministerial coordination as part of the Program Operational Manual; (ii) coordination with the Local Tourism Committee to articulate the interventions planned in Caye Caulker; and (iii) the final design consultant for the works under the current operation prepare the maintenance requirements and budgets for input into the BCC's maintenance system.
- 2.7 **Sustainability.** The capacity building activities of Component 2 and the definition of responsibilities for the maintenance of the works through MOUs will contribute to the sustainability of the program. On the other hand, the design of the works considers low maintenance cost techniques (i.e., screw pumps), as well as natural-based solutions.



### III. IMPLEMENTATION AND MANAGEMENT PLAN

#### A. Summary of Implementation Arrangements

- 3.1 The MoW will be the EA for the loan. The EA will establish a Program Management Unit (PMU) exclusively dedicated to Bank projects. The unit will be staffed by a program coordinator, a project manager specific to each of the Bank projects, a coastal engineer, and by specialists from each one of these areas: (i) financial management; (ii) procurement; (iii) monitoring and evaluation; (iv) social; and (v) environmental. The PMU will also be staffed by an administrative assistant and accounts clerk, that will support this program and other Bank operations. In order to ensure an effective start of the program, **the establishment of the PMU and the appointment of the program coordinator, the project manager, the fiduciary (financial and procurement) specialists and the administrative assistant will be a special contractual condition prior to the first disbursement of the financing.**
- 3.2 The administrative and technical staff of the PMU will report to the respective project manager, who will report to the program coordinator. The program coordinator will report to the CEO of MOW as well as to a Project Steering Committee. The remuneration of the coastal engineer will be financed by the program for the period of loan execution; the GoB will institutionalize the coastal engineer position thereafter. The cost of the other technical and administrative staff of the PMU including the program coordinator will be shared by the respective projects.
- 3.3 A Project Steering Committee (PSC) will be created to facilitate the coordination between the different agencies involved. This SC will consist of key implementing agencies and stakeholders and will be chaired by the Ministry of Economic Development and Petroleum, Investment, Trade and Commerce (MEDPTIC). The PSC will be responsible for the monitoring and oversight and strategic advice to the program. The PSC will be integrated by the MOW, Ministry of Labour, Local Government and Rural Development, Ministry of Finance and Natural Resources, Ministry of Tourism and Civil Aviation (MTCA), Coastal Zone Management Authority and Institute (CZMAI), the ministry responsible for the National Emergency Management Organization (NEMO), and the Ministry of Agriculture, Fisheries, Forestry, the Environment, Sustainable Development and Immigration.
- 3.4 **Program Operations Manual (POM).** The POM, which establishes standards and procedures for the EA with regard to programming activities, procurement audits, and monitoring and evaluation, among others will govern program execution. The POM will include the definition of the role of the PSC and the coordination mechanism between the different ministries and entities involved in the implementation of the program. **Approval of the POM (including the Environmental and Social Management Report “ESMR”) shall be a special contractual condition prior to the first disbursement of the financing,** in order to ensure a proper interinstitutional coordination.
- 3.5 The Belize City Council, Caye Caulker Village Council and CZMAI will undertake the management of the projects financed under Component 1 when completed,

including responsibility for operation and maintenance. In order to ensure the maintenance of the works, the legal possession of the properties and the compliance with national environmental regulations, the following are conditions prior to the signing of the contracts for the construction/rehabilitation of works: (i) agreements/MOUs between the Borrower, EA and the participating entities to specify the responsibilities for management of the site under their jurisdiction once the transferring of the works is completed, including responsibilities for operation and maintenance with sustainable financial mechanism in place; (ii) evidence of legal possession of the property where the construction of the respective work is to take place, easements or other rights required for its construction and use; and (iii) permits and any other documentation needed as referred in the ESMR.

- 3.6 **Procurement execution.** Procurements for the proposed project will be carried out in accordance with Document GN-2349-9 ("Policies for the Procurement of Goods and Works Financed by the IDB"), and Document GN-2350-9 ("Policies for the Selection and Contracting of Consultants Financed by the IDB"), as well as the addition, for all projects, the Borrower is required to prepare and submit to the Bank a draft General Procurement Notice (GPN).

## **B. Summary of Arrangements for Monitoring Results**

- 3.7 **Planning and monitoring.** The MoW will prepare a detailed Annual Operations Plan (AOP) 60 days prior to the beginning of each calendar year. The AOP, including the updated PEP, will be supported by the Project Procurement Plan (PP) for the acquisition of goods and services; and a financial plan, based on estimated procurement costs and other program activities to be undertaken. The AOP and Progress Reports (PR) will be prepared following a template consistent with the Bank's Project Monitoring Report (PMR). The AOP for the following calendar year shall include: (i) a forecast of disbursements; (ii) an updated PP and PEP; (iii) detail achievements in relation to planned activities, outputs and outcomes, among others; (iv) an environmental and social compliance report; (v) budget analysis, disbursement and financial plan; and (vi) Output Indicators and Costs – PMR Matrix. The semi-annual PRs including the PEP will be presented within 60 days after the end of June and December of each year during the disbursement period. The semi-annual PR will focus on fulfillment of output indicators and progress towards achieving outcomes in the Results Framework, analyze problems encountered and propose corrective measures. Within 60 days of the last disbursement date, the MoW will prepare a final report, summarizing all the PR prepared during the program's life and organize a closing workshop to present and discuss the Bank's Project Completion Report.
- 3.8 **Evaluation.** The MoW will submit to the Bank: (i) a mid-term, independent evaluation report no later than 36 months after the date of signature of the loan agreement; and (ii) a final independent evaluation report, within 90 days after the date on which 90% of the loan proceeds have been disbursed or after the Bank's official request. The final evaluation report shall include the results of the program's impact evaluation.
- 3.9 **The Monitoring and Evaluation (M&E) Arrangements** were agreed upon with the GoB. The plan presents the methodology, data collection plan, indicators to be measured, sample design and budget allocated to each activity. The proposed



empirical strategy is based on a difference-in-differences research design combined with entropy balancing. The objective is to study the causal effects of flood mitigation infrastructure on climate vulnerability and risk. The main hypothesis of the proposed impact evaluation is that the program will reduce the economic losses caused by floods in the Orange St area of Belize City and Caye Caulker. It is also anticipated that the intervention will decrease the human vulnerability to floods, operationalized as the number of people affected (i.e., injured, evacuated, relocated, with houses and its assets being damaged or destroyed, or requiring emergency assistance) by floods in these areas. This evaluation is one of the first efforts to estimate risk empirically using primary information, offering an innovative methodological approach for rigorous quantitative risk assessment, which traditionally resorts to Monte Carlo simulations and the construction of synthetic scenarios. Unlike other hazards with long return periods, which are not likely to occur during the life of the project and make it difficult to attribute observed outcomes to the intervention, the objective of the program is to mitigate the negative effect of high-frequency phenomena, so the risk of inevaluability as a result of the absence of a disaster is scant. Frequency analysis, based on the project's baseline survey that collects pluriannual information, shows that the flood recurrence interval is short, supporting the capitalization of the identification strategy.

**C. Significant Design Activities Post Approval**

- 3.10 One hundred percent of the works have been designed. Sixty-seven percent of the works investments are ready for bidding and for the remaining 33% final designs and bidding documents will be contracted with US\$400,000 from ATN/JF-16295-BL. The hiring process of the final designs and bidding document has started already and the designs will be completed by June 2018. Surveys for the baseline data of the project have been already contracted with funds from ATN/OC-16149-BL and should be completed by February 2018.

**D. Other**

- 3.11 As requested by the GoB, simultaneously and after the approval of the loan, the potential of access to climate financing through the Green Climate Fund (GCF) will be explored to carry out additional interventions on shoreline stabilization interventions in high tourism value areas (see [OEL-8](#)). The funds of the program will be used as counterpart for the GCF proposal.

Development Effectiveness Matrix		
Summary		
I. Corporate and Country Priorities		
1. IDB Development Objectives	Yes	
Development Challenges & Cross-cutting Themes	-Productivity and Innovation -Climate Change and Environmental Sustainability -Institutional Capacity and the Rule of Law	
Country Development Results Indicators	-Beneficiaries of improved management and sustainable use of natural capital (#)* -Government agencies benefited by projects that strengthen technological and managerial tools to improve public service delivery (#)* -Households protected from flood risk (#)* -Terrestrial and marine areas with improved management (ha)*	
2. Country Development Objectives	Yes	
Country Strategy Results Matrix	GN-2746	i) Increase overnight visitor demand and expenditures in a sustainable manner, and ii) Improve road infrastructure to facilitate trade and integration and access to emerging tourist destinations.
Country Program Results Matrix	GN-2884	The intervention is included in the 2017 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability	Evaluable	
3. Evidence-based Assessment & Solution	9.6	
3.1 Program Diagnosis	2.6	
3.2 Proposed Interventions or Solutions	4.0	
3.3 Results Matrix Quality	3.0	
4. Ex ante Economic Analysis	10.0	
4.1 The program has an ERR/NPV, a Cost-Effectiveness Analysis or a General Economic Analysis	4.0	
4.2 Identified and Quantified Benefits	1.5	
4.3 Identified and Quantified Costs	1.5	
4.4 Reasonable Assumptions	1.5	
4.5 Sensitivity Analysis	1.5	
5. Monitoring and Evaluation	10.0	
5.1 Monitoring Mechanisms	2.5	
5.2 Evaluation Plan	7.5	
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood	Medium	
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	
IV. IDB's Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Accounting and Reporting, External Control.  Procurement: Information System.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Gender Equality		
Labor		
Environment		
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	Yes	Technical Cooperation BL-T1080 is providing technical assistance to the Ministry of Works in coastal engineering.
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan	Yes	The proposed empirical strategy is based on a differences-in-differences methodology combined with entropy balancing. The objective is to study the causal effects of flood infrastructure on climate risk.

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

Given Belize's vulnerability to natural disasters and the adverse effects of climate change, the country needs to improve its limited institutional capacity for disaster and climate risk management to protect its economy from significant losses, particularly in the important tourism sector. The program proposes a solution with a two-pronged approach, wherein it aims to simultaneously reduce infrastructure vulnerabilities by implementing flood control and shoreline stabilization measures in three key locations, and to improve disaster risk and climate change governance.

The documentation is well-structured. The diagnostic is based on empirical evidence of the high occurrence of flooding as well as the threats of increasing sea level rise and extreme weather events, and its adverse effects on infrastructure and the tourism industry. The proposed solution is then linked to the problems identified. The results matrix (RM) reflects the objectives of the program and establishes a clear vertical logic, including impact indicators that can capture the program's overall effect on reduced economic losses of households due to flooding as well as reduction of losses of overnight visitor expenditures. The RM includes SMART indicators at the impact, outcome and output level, with their respective baseline values and targets and the means to gather information.

The economic analysis includes a Cost-Benefit Analysis that considers the benefits in terms of avoided damages to infrastructure and the population, as well as increases of property values in targeted intervention areas. In general, the benefits are based on a good understanding of the theory of change, and the economic costs include all resource costs as well as costs from a social perspective. Overall assumptions appear reasonable and appropriate; a sensitivity analysis contemplates key parameters.

The monitoring and evaluation plan presents all outputs and associated costs. The evaluation plan proposes a two-pronged approach that evaluates the climate risk reduction measures in two of the three locations. A quasi-experimental approach using difference-in-differences with entropy balancing is used to evaluate flood mitigation measures in Belize City, while a before-after comparison is proposed to measure impact in Caye Caulker. This second evaluation does not allow for direct attribution of impact. The plan provides sufficient detail on methodological and logistical considerations. Given the current lack of rigorous evidence of the impact of such climate risk management interventions, the proposed evaluation of activities in Belize City promises to make an important contribution to the literature and to future policy design.

The risk matrix identifies eleven risks; all of which are classified as Medium. All of them seem reasonable and include appropriate mitigating actions and compliance indicators.

**RESULTS MATRIX**

**Project Objective:** Reduce Belize's climate vulnerability and risk through the implementation of climate resilient measures in the tourism sector and by improving the governance of Belize's Disaster Risk Management (DRM).

**EXPECTED IMPACT**

Indicators	Unit of measure	Baseline	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations
<b>IMPACT #1: Climate vulnerability and risk reduced</b>										
Reduction of household annual economic losses caused by recurrent floods in the Orange St area.	% change	0	2015-2017				100	100	Baseline and follow-up surveys for ex ante economic analysis and impact evaluation	Economic losses caused by floods represent the economic vulnerability to floods. They include the disaster effects on physical assets and economic flows and consider comparable recurrent events (1-5 years).
Reduction of household annual economic losses caused by recurrent floods in Caye Caulker.	% change	0	2015-2017				100	100	Baseline and follow-up surveys for ex ante economic analysis and impact evaluation	Economic losses caused by floods represent the economic vulnerability to floods. They include the disaster effects on physical assets and economic flows and consider comparable recurrent events (1-5 years).

Indicators	Unit of measure	Baseline	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations
<b>IMPACT #1: Climate vulnerability and risk reduced</b>										
Reduction of projected losses of overnight visitor expenditures in Belize City	% change	0	2017				12	12	Risk assessment model for Belize City, adjusted with baseline and follow-up survey data for ex ante economic analysis and impact evaluation, and data from The Belize Tourism Board	The intervention will result in avoided visitor expenditure losses.
Reduction of projected losses of overnight visitor expenditures in Caye Caulker.	% change	0	2017				12	12	Risk assessment model for Caye Caulker, adjusted with baseline and follow-up survey data for ex ante economic analysis and impact evaluation, and data from The Belize Tourism Board	The intervention will result in avoided visitor expenditure losses.
Decrease in the annual disaster mortality rate in Belize City	% change	0	2017				3	3	Statistical Institute of Belize and National Emergency Management Office	Expected decrease based on estimates by Guerrero, Salazar and Lacambra (2017).

## EXPECTED OUTCOMES

Indicators	Unit of Measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations
<b>OUTCOME # 1: Mitigation of risk for residents</b>										
Reduction of people affected by recurrent floods in the Orange St area.	People (#)	0	2017				7,079	7,079	Risk assessment model for Belize City, adjusted with baseline and follow-up surveys information for ex ante economic analysis and impact evaluation	People affected by floods represent the human vulnerability to floods. People affected include injured, evacuated, relocated, with houses and its assets being damaged or destroyed, or requiring emergency assistance and considers comparable recurrent events (1-5 years).
Reduction of people affected by recurrent floods in Caye Caulker.	People (#)	0	2017				144	144	Risk assessment model for Caye Caulker, adjusted with baseline and follow-up surveys information for ex ante economic analysis and impact evaluation	People affected by floods represent the human vulnerability to floods. People affected include injured, evacuated, relocated, with houses and assets being damaged or destroyed, or

Indicators	Unit of Measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations
										requiring emergency assistance and considers comparable recurrent events (1-5 years).
<b>OUTCOME #2: Enhanced tourism</b>										
Tourist satisfaction in Palapa Beach (Caye Caulker) and Goff's Caye	Score (#)	59	2016				67	67	Baseline and follow up surveys for the ex ante economic analysis and impact evaluation and Goff's Caye Visitor Satisfaction Survey Report	Score is the percentage of respondents who answered that the overall satisfaction of the site/reef is high.

Indicators	Unit of Measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations
<b>OUTCOME # 3: Improved government performance in disaster risk governance</b>										
Government agencies benefited by projects that strengthen technological and managerial tools to improve public service delivery	Government agencies (#)	0	2017			5		5	Semiannual progress reports	The Ministry of Works (MoW), the Ministry of Tourism and Civil Aviation (MTCA), the Climate Change Office (NCCO), the National Emergency Management Office (NEMO) and the Coastal Zone Management Authority and Institute (CZMAI) will be the target agencies. The MoW will execute the investments of Component 1, and the MoW, MTCA and CZMAI will be the users of the Climate Risk Information System, building codes and financial protection strategy.

Indicators	Unit of Measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations
Improvement in iGOPP's Financial Protection component	% Increase	0	2017				12.5	12.5	iGOPP report for Belize; follow-up iGOPP estimation after completion of the program	The current value of the financial protection index is 8% and with the intervention it's expected that the indicator FP-2-15 ( <i>Does the Ministry of Agriculture have a structure for the financial protection of the agriculture sector (or equivalent) against disaster risk?</i> ) will be fulfilled and the sub-index will reach a value of 9% (increase 12.5%). Improvement derives from actions not financed by the project but attributable to the intervention.



Indicators	Unit of Measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations
Improvement in iGOPP's Risk Identification component	% Increase	0	2017				62.5	62.5	iGOPP report for Belize; follow-up iGOPP estimation after completion of the program	The current value of the risk identification index is 8% and with the intervention it's expected that the indicator IR-1A-3 ( <i>Are there regulations ordering the creation and maintenance of Information Systems for Disaster Risk Management?</i> ) against disaster risk?) will be fulfilled and the sub-index reach a value of 13% (increase 62.5%). Improvement derives from actions not financed by the project but attributable to the intervention.

## OUTPUTS

Outputs	Estimated Amount (USD)	Unit of measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations
<b>Component # 1: Climate risk reduction in the tourism sector</b>											
<b>Output 1.1:</b> Flood reduction investment works in Belize City, executed	6,853,460	Project sites (#)	0	2017			1	1	2	Semiannual progress reports	The project sites will include: - Collet Canal and - East Canal
<b>Output 1.2:</b> Coastal protection hybrid and nature-based infrastructure in Caye Caulker, implemented	396,000	Number off structures (#)	0	2017			2		2	Semiannual progress reports	Beach and dune stabilization measures in Caye Caulker, with: - Beach management through groyne structures
<b>Output 1.3:</b> Coastal protection intervention and tourism enhancement in Goff's Caye, implemented	975,190	Number off structures (#)	0	2017		2	3		5	Semiannual progress reports	Coastal protection interventions include revegetation and designation of mooring zones. Tourism enhancements include the palapa relocation, jetty, signage and facility upgrading and solar panels.
<b>Output 1.4:</b> Management plans approved	100,000	Plans (#) approved	0	2017			3		3	Semiannual progress reports	In: - Caye Caulker and - Goff's Caye (includes one management

Outputs	Estimated Amount (USD)	Unit of measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations
											plan and one monitoring plan). The plans will be approved by CZMAI and the Caye Caulker Village Council.
<b>Component #2: Governance for disaster risk management and cc adaptation</b>											
<b>Output 2.1:</b> Climate Risk Information System, in operation	418,241	Accomplishment of milestone (#)	0	2017			1		1	Semiannual progress reports	
<b>Milestone 2.1.1:</b> Climate Risk Information System, designed		System design completion (%)	0	2017		100			100	Semiannual progress reports	
<b>Output 2.2:</b> Communication plan for risk information accessibility, completed	60,000	Planning document (#)	0	2017			1		1	Semiannual progress reports	Awareness raising and replicable guidelines targeting decision makers, technicians, private sector and the general population for risk identification efforts.
<b>Output 2.3:</b> Tourism and land use building codes incorporating nature-based solutions, approved	70,000	Proposal document submitted (#)	0	2017			1		1	Semiannual progress reports	Approved by the Central Building Authority and Local Building Authorities and endorsed by the Project Steering Committee (PSC).

Outputs	Estimated Amount (USD)	Unit of measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	End of Project	Means of verification	Observations
<b>Output 2.4.:</b> Climate Risk Financial Strategy for the Agricultural and Tourist Sector	70,000	Proposal document and a 5-year operative plan submitted (#)	0	2017			2		2	Semiannual progress reports	Proposal documents submitted to Cabinet by the Executing Agency. The Climate Risk Financial Strategy will be the guiding documents and the 5-year operative plans will include proposed activities for the accomplishment of goals proposed by the strategy.

## **FIDUCIARY ARRANGEMENTS**

**Country:** Belize  
**Name:** Climate Vulnerability Reduction Program  
**Project:** BL-L1028  
**Executing Agency (EA):** Ministry of Works (MoW)  
**Fiduciary Team:** Brodrick Watson, Financial Management Specialist  
John Primo, Procurement Specialist

### **I. EXECUTIVE SUMMARY**

- 1.1 The fiduciary evaluation of the program, which was undertaken using the Institutional Capacity Assessment Systems (ICAS) methodology, took place in September 2017. The evaluation included meetings with staff of MoW and staff of the Project Executing Unit (PEU) for the George Price Highway Rehabilitation Program (3344/OC-BL) who will form part of a centralized Program Management Unit (PMU) that will execute this and other Bank funded programs.
- 1.2 Public Financial Management (PFM) in Belize includes the main functions of budget formulation, budget execution, cash management, accounting, and external control; however, internal audit functions are non-existent and the procurement system not adequately developed. Important challenges exist as it relates to the availability of and limited capacity of personnel in charge of managing the PFM systems; The personnel are mainly public servants and guided by the rules of the Ministry of Public Service. There is also no specific career stream or regular training programs.
- 1.3 Based on the results of the evaluation of the program and the state of the country's PFM, the overall fiduciary risk of the program is determined to be medium. The MoW has adequate systems in place with regards to some aspects of financial management. As a result, the Bank is recommending the use of the national system for the following aspects of financial management through the Government's Smart Stream system; budget, cash management and accounting. Additionally, the Bank recommends that Smart Stream system is supplemented by the use of an off the shelf accounting package for financial reporting. The use of national systems is not yet approved for the procurement of goods, consulting or non-consulting services for the program. The program will be funded entirely with IDB loan financing of US\$10 million.

### **II. EXECUTING AGENCY'S FIDUCIARY CONTEXT**

- 2.1 The MoW, through a PMU, will be the EA of the program. The national system, Smart Stream, is used by the MoW for budgeting, accounting, cash management and financial reporting. The Auditor General of Belize provides external control oversight to the MoW. The accounts section, which is comprised of eleven (11) staff, will provide cash management support to the PMU. Given the limitations with regards to fiduciary management in the MoW, a new centralized PMU dedicated to the implementation of Bank funded programs, including this program, will be established. The other programs, so far, are George Price Highway Rehabilitation Program (3344/OC-BL) and the Capacity Building for Climate Vulnerability Reduction grant (ATN/JF-16295-BL).

### III. FIDUCIARY RISK EVALUATION AND MITIGATION ACTIONS

- 3.1 The overall fiduciary risk for the program, which was evaluated using the ICAS methodology, is deemed to be medium. Below are the fiduciary risks which were identified and their respective risk rating and mitigation measures.

**Table 1. Main Risk Areas and Mitigating Measures**

<b>Risk</b>	<b>Risk rating</b>	<b>Mitigation measures</b>
Limited availability of reliable and timely financial information for decision making	Medium	With the existing QuickBooks software that the PEU of BL-L1019 uses, establish a separate chart of accounts for this program to facilitate accounting and reporting.  <b>Responsibility for implementation:</b> PMU/Borrower  <b>Timeline for implementation:</b> Prior to 1 <sup>st</sup> disbursement of the loan
Inadequate support for the fiduciary management and oversight of the project	Medium	Increase the financial management capacity of the PMU by hiring an accounts clerk with the suitable skill and qualification, preferably with experience managing donor-funded programs.  <b>Responsibility for implementation:</b> PMU/Borrower  <b>Timeline for implementation:</b> To be determined during execution as part of the periodic financial management visit by the Bank to the PMU.
Weak internal control systems and procedures/system documentation	Medium	Establish an adequate internal control system for the PMU and document in the Program Operations Manual (POM).  <b>Responsibility for implementation:</b> Borrower/IDB  <b>Timeline for implementation:</b> Prior to 1st disbursement of the loan
Limited knowledge of IDB procurement, disbursements and financial reporting procedures	Medium	Strengthen capacity within the PMU through trainings on IDB's procurement and financial management procedures and requirements  <b>Responsibility for implementation:</b> IDB  <b>Timeline for implementation:</b> during project design and throughout project execution

### IV. ASPECTS TO BE CONSIDERED IN THE SPECIAL CONDITIONS OF CONTRACT

- 4.1 The following fiduciary requirements are to be incorporated into the special conditions:
- Rate of exchange agreed with the EA.** For purposes of determining the equivalency of expenditures incurred in local currency of the reimbursement of expenditures chargeable to the loan, the agreed exchange rate shall be the exchange rate in force on the date of payment of the expenditure in the local currency of the Borrower's country.
  - Financial statements and reports:** (i) semi-annual financial reports are to be included in the semi-annual progress report which will be submitted by the PMU to the Bank; (ii) annual financial statements of the project, audited by a firm of independent public accountants acceptable to the Bank, are to be submitted to the Bank within 120 days at the end of each fiscal year, beginning with the fiscal year in which the first project expenditures are incurred; and (iii) final financial statements, audited by a firm of independent public accountants acceptable to the Bank, are to be submitted to the Bank within 120 days following the last disbursement date of the program.

- c. **Disbursement restrictions.** Pursuant to Document AB-2990, disbursement by the Bank of resources will be subject to the following maximum limits: (i) up to 15% during the first 12 months; (ii) up to 30% during the first 24 months; and (iii) up to 50% during the first 36 months. All these periods will be counted from the time the loan operation is approved by the Board of Executive Directors. These limitations may be rendered inapplicable to the extent that the requirements set forth in the Bank's policy regarding said limitations have been fulfilled, provided that the borrower has been notified of the same in writing.

## **V. FIDUCIARY ARRANGEMENTS FOR PROCUREMENT EXECUTION**

- 5.1 The procurement fiduciary arrangements establish the conditions applicable to all procurement execution activities in the project.
- 5.2 **Procurement execution.** Procurements for the proposed project will be carried out in accordance with Document GN-2349-9 ("Policies for the Procurement of Goods and Works Financed by the Inter-American Development Bank") dated March 2011 and; Document GN-2350-9 ("Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank") dated March 2011, as well as the provisions established in the loan contract and the Procurement Plan (PP). In addition, for all projects, the Borrower is required to prepare and submit to the Bank a draft General Procurement Notice (GPN).
- i. **Procurement of works, goods and non-consulting services.** The procurement plan (PP) for the program, covering the duration of project execution, can be accessed through the following [link](#). The PP indicates the procurement method to be used for the acquisition of goods and the contracting of works or non-consulting services. The review of technical specifications in all cases, during the process of selection is the responsibility of the sector specialist of the operation.
- ii. **Procurement of consulting services.** The PP for the operation, covering the duration of project execution, can be accessed through the following [link](#). The PP indicates the procurement method to be used for the selection and contracting of consulting services. The Borrower is responsible for preparing and implementing the project; and therefore, for preparing the Terms of References (ToRs), short lists, selecting the consultants, and awarding and subsequently administering the contract.
- a. **Sole source selection and/or direct contracting.** To be used only in exceptional circumstances and is based on the Bank's no objection to the justification. The requirements for single source selection are provided for under Sections 3.6 and 3.7 (GN-2349-9) and Sections 3.9 – 3.13 (GN-2350-9).
- b. **Selection of individual consultants.** Individual consultants are employed on assignments for which: (i) teams of personnel are not required; (ii) no additional outside (home office) professional support is required; and (iii) the experience and qualifications of the individual are the paramount requirement. Individual consultants are selected on the basis on their qualifications for the assignment. Advertisement is not required and consultants do not need to submit proposals. Consultants shall be selected through comparison of qualifications of at least three candidates among those who have expressed interest in the assignment or have been approached directly by the Borrower. Individual consultants may be selected on a sole-source basis with due justification in exceptional cases. This is to be carried out in accordance with Section V (Selection of Individual Consultants) of GN-2350-9 in paragraphs 5.1- 5.4.

- c. **Training.** The detailed PP indicates to which consultancy services training and workshops are applicable. As per GN-2350-9 if the assignment includes an important component for training or transfer of knowledge to Borrower staff or national consultants, the TOR shall indicate the objectives, nature, scope, and goals of the training program, including details on trainers and trainees, skills to be transferred, time frame, and monitoring and evaluation arrangements. The cost for the training program shall be included in the consultant's contract and in the budget for the assignment.
- iii. **Recurrent expenses.** Include payment of utilities and other office operating expenses of the PMU, if any.
  - a. **Domestic preference.** Determining whether it is appropriate and necessary to use domestic preference in the evaluation of bids should be guided by Appendix 2 of GN-2349-9 paragraph 1- 6.
  - b. **Other.** Use of national or other documents than the Bank standard documents for competitive bidding: none.

**Table 2 - Thresholds (in US\$)**

International competitive bidding threshold*		National competitive bidding range ** (complex works and non-common goods)		Consulting services
Works	Goods	Works	Goods	International short list
>1,000,000	>100,000	100,000 – 1,000,000	25,000 - 100,000	>200,000

\* When procuring simple works and common goods and their amount is under the International Competitive Bidding thresholds, Shopping may be used.

\*\* When procuring complex works and non-common goods with amounts under the NCB range, Shopping shall be used.

- 5.3 **Procurement supervision – PP and supervision.** The PP for the operation covering the duration of project execution can be accessed through the following the [link](#). It indicates the procedures to be used for the procurement of goods, the contracting of works or services, and the method of selecting consultants, for each contract or group of contracts. It also indicates cases requiring prequalification; the estimated cost of each contract or group of contracts; the requirement for prior or post review by the Bank. The procurement plan will be prepared to cover an initial period of eighteen (18) months and updated annually or whenever necessary, or as required by the Bank ([www.iadb.org/procurement](http://www.iadb.org/procurement)).

## VI. FINANCIAL MANAGEMENT

- 6.1 **Programming and budget.** The Borrower will commit to allocate, for each fiscal year of program execution, adequate fiscal space to guarantee the execution of the program. The amount allocated will be determined based on amounts indicated in the budget submission forms submitted to the Ministry of Finance and Economic Development via the MoW. These estimates will be prepared based on information contained in the project execution plan, the financial plan and the procurement plan.
- 6.2 **Accounting and information systems.** Project accounting will be performed using the Government's financial management system, Smart Stream, in accordance with international financial and reporting standards and international public-sector accounting standards when applicable. Smart Stream will be supplemented with the use of the QuickBooks accounting system to facilitate reporting under the project. Should the program reporting functionalities of Smart Stream be upgraded during the life of the



project, the IDB Financial Management Specialist will assess its performance and adequacy to determine whether the use of the parallel accounting system can be discontinued. It is expected that the accounting and reporting system of the project will: (i) facilitate the recording and classification of all financial transactions according to source of funding and categories of investment; and (ii) provide information related to, planned versus actual financial execution of the program, commitments made under the prog, the financial plan for a six months period, financial statements, performance reports and any other reports that may be required from time to time by the MoW and/or the Bank.

- 6.3 **Disbursements and funds flows.** As per the norms of the Government of Belize, a designated bank account within the Central Bank of Belize will be utilized for the receipt of loan resources. For day-to-day operational expenses, the PMU will make payments from the Ministry's account (consolidated account) and on submission of a memo to the Ministry of Finance and Economic Development (MFED), the funds are then reimbursed from the Central Bank Account to the consolidated account.
- 6.4 As evidenced from the disbursing norms of loans and the anticipated commitments and obligations of the project, it is expected that the Advance of Funds methodology will be mainly used for the project. The Advance of funds when used, will be based on the true liquidity needs of the project for a period not exceeding six months. Subsequent advances may be disbursed once 80% of the total accumulated balance pending justification has been submitted and accepted by the Bank. Disbursements will be processed using the ex post methodology.
- 6.5 **Internal control and audit.** The PMU will assume the responsibility for designing and implementing a sound system of internal control for the program. The system to be established should provide reasonable assurance that funds are used for its intended purpose and should be documented in the POM.
- 6.6 **External control and reporting.** For each fiscal year during project execution, the MoW will be responsible to produce semi-annual financial reports for the project, as well as annual audited financial statements and one final audited financial statement at the end of the project. The financial statements will be audited by a firm of independent public accountants acceptable to the Bank. The firm for the auditing of the program will be selected according to the Bank's procedures for the contracting of external audit services.
- 6.7 **Financial supervision plan.** The initial financial supervision plan of the project will focus on: (i) activities related to the implementation and follow-up of arrangements and systems being implemented for the fiduciary management of the project; (ii) follow-up on the implementation status of risk mitigating measures; and (iii) capacity building of PMU personnel in the Bank's procedures and requirements.
- 6.8 **Execution mechanism.** The MoW will be the EA for the program. Under the MoW, a centralized PMU dedicated to the implementation of IDB funded programs, including this program, will be established. The MoW will coordinate with several MDAs for the implementation of aspects of Component 2, governance for disaster risk management and climate change adaptation. The MoW will sign coordination agreements/Memoranda of Understanding (MOUs) with the relevant MDAs outlining the roles and responsibilities.
- 6.9 The PMU will be staffed by a program coordinator, a project manager specific to each of the Bank programs, a coastal engineer and by specialists from each of these areas: (i) financial management; (ii) procurement; (iii) monitoring and evaluation; (iv) social; and (v) environmental. The PMU will also be staffed with an administrative assistant and an accounts clerk that will support this program and the other Bank operations. In order to

ensure an effective start of the program, the establishment of the PMU and the appointment of the program coordinator, the project manager, the fiduciary (financial and procurement) specialists and the administrative assistant will be a special condition prior to first disbursement of the financing. The administrative and technical staff of the PMU will report to the respective program manager, who will report to the program coordinator. The program coordinator will report to the CEO of the MoW as well as to a Project Steering Committee (PSC).

- 6.10 The PSC will include representatives from the key Implementing Agencies and will be chaired by Ministry of Economic Development, Petroleum, Investment, Trade and Commerce.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-\_\_\_/17

Belize. Loan \_\_\_\_/OC-BL to Belize  
Climate Vulnerability Reduction 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 Belize, as Borrower, for the purpose of granting it a financing to cooperate in the execution of the Climate Vulnerability Reduction Program. Such financing will be for the amount of up to US\$10,000,000 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 \_\_ \_\_\_\_\_ 2017)