

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: PIDA8631

Project Name	BZ Marine Conservation and Climate Adaptation (P131408)
Region	LATIN AMERICA AND CARIBBEAN
Country	Belize
Sector(s)	General agriculture, fishing and forestry sector (50%), Public administration- Agriculture, fishing and forestry (50%)
Theme(s)	Climate change (40%), Biodiversity (30%), Environmental policies and institutions (20%), Natural disaster management (5%), Other environment and natural resources management (5%)
Lending Instrument	Investment Project Financing
Project ID	P131408
Borrower(s)	Belize
Implementing Agency	BZ PROTECTED AREAS -PACT, Ministry of Forestry, Fisheries and Sustainable Development
Environmental Category	B-Partial Assessment
Date PID Prepared/Updated	09-Feb-2015
Date PID Approved/Disclosed	10-Feb-2015
Estimated Date of Appraisal Completion	15-Dec-2014
Estimated Date of First Grant Approval	03-Mar-2015
Decision	

I. Project Context

Country Context

Belize is a small, upper-middle income country with a population of 331,900 and a GDP per capita of US\$4,834 (2013). The country is endowed with the largest barrier reef in the Americas and pristine tropical forests. Although the economy has traditionally been oriented towards agriculture, it has undergone a significant transformation over the last decade resulting from the first commercial oil discovery in 2005 and emergence of the tourism industry. The service sector has become the largest contributor to GDP accounting for 54%, while the agricultural sector accounts for 13% of GDP with exports primarily dominated by the sugar and citrus industries.

Since gaining independence in 1981, Belize has experienced a peaceful and democratic transition. The governing party, United Democratic Party (UDP), came to power in 2008 and was re-elected in 2012 for a subsequent five-year term, which ensured political stability and continuity for policy priorities. The Government has worked to establish a transparent and accountable government and has taken concrete steps to address governance issues including the passage of the Freedom of

Information Act, term limits for elected officials (including the Prime Minister), and empowering the Senate's oversight abilities. After suspending its program for several years due to deteriorating fiscal conditions and fiduciary concerns, the World Bank reengaged in 2009, through the preparation of the Interim Strategy Note (ISN) 2009-2011. Under this ISN, the Belize Municipal Development Project (BMDP) was approved by the Executive Directors on September 16, 2010. Since the approval of the BMDP and the successful implementation of the ISN, the relationship between the Bank and the Government of Belize (GoB) has improved and there is a clear commitment from the GoB to the lending and technical assistance programs outlined in the World Bank Group Country Partnership Strategy (CPS) FY2012-2015 (Report No. 63504-BZ, discussed by the Executive Directors on September 8, 2011).

Fiscal space remains limited in Belize and the public debt trajectory vulnerable to various shocks. The Belizean economy is estimated to have grown by only 0.7% in 2013 mainly because of continued decline in oil production and weak agricultural output, especially sugarcane and citrus. In March 2013, the GoB completed the restructuring of the US\$550 million 'Super-Bond', which was issued in the international market in 2007. Over the medium-term, real GDP growth is expected to hover around 2.5% a year as declining oil production would be offset by higher output of other commodity exports, tourism and construction. The authorities' medium term policy plans would maintain the primary surplus around 1% of GDP, as in 2013, which could lead to significant increases in public debt as a share of GDP, especially when a court decision calls for the payment of compensation to the former owners of the recently nationalized companies. There are risks of economic downturn as additional external vulnerabilities could arise from a protracted period of weak growth in advanced economies or complications with PetroCaribe financing. The authorities have, however, been proactive in developing programs to mitigate the potential impact of these risks.

Poverty in Belize substantially increased in recent years, in part due to the stagnating economic situation and impact of natural disasters. GDP per capita remained virtually flat after 2003 because the economy grew close to –and at times even below– the annual rate of growth of the population, estimated around 2.5 percent. After a gradual decline in unemployment levels during the past decade, these figures increased drastically from 8% to 16% between 2008 and 2012. During the 2002-2009 period, the overall poverty rate increased from 34% to 42%, and extreme poverty increased from 11% to 16%. Rising poverty has affected all districts; for example, poverty rates have more than doubled in the Corozal District, from 26% to 56%, and extreme poverty tripled from 6 to 21%. Corozal was also repeatedly impacted by hurricane and flooding, underscoring the population's vulnerability to disasters. As of 2009, income inequality also remains high with a Gini coefficient of 0.42, and the highest rate of economic inequality is concentrated among indigenous Mayan communities. There is also clear evidence of a rural-urban divide based on lower education, low female labor participation and belonging to ethnic minorities.

Sectoral and institutional Context

According to the first National Inventory of Sources and Sinks of Greenhouse Gases required by the UNFCCC, Belize is a net sink for greenhouse gases, i.e., it absorbs more than it emits. Yet, Belize is extremely vulnerable to the adverse impacts of climate change. Therefore, Belize's national objective is focused on identifying feasible adaptation options to address climate change impacts. Climate change related events have already begun to profoundly impact the country's geophysical, biological and socio-economic systems, which results in depleting national budgets.

Belize is a country with extensive, low-lying, coastal areas vulnerable to climate related disasters such as tropical cyclones and flooding. Furthermore, the economy is small and concentrated with most centers of population located in the most vulnerable areas. The UNFCCC recognizes Belize as one of the countries most vulnerable to adverse impacts of climate change due to it: (i) possessing a long, low-lying coastline, (ii) consisting of over 1,060 small islands, (iii) having the second longest barrier reef in the world (and the largest reef in the Western Hemisphere and the Americas), and (iv) maintaining 17,276 km² of forest cover, each of which supports fragile ecosystems. Thus, the vulnerability of the country to the foreseeable adverse physical, environmental, and economic impacts of climate change indicates that priority attention must be directed towards the implementation of viable adaptation measures targeting the most vulnerable sectors and ecosystems of Belize.

Belize derives significant benefits from the ecosystem services generated by the coral reefs and mangroves. It has been estimated that the value of ecosystem services (fishing, tourism, shoreline protection) generated by the coral reefs and mangroves contributes between 15% and 22% of GDP in Belize (in the range of US\$395–559 million per year) (WRI, 2008). Tourism accounts for over 15% of GDP, is the largest source of foreign exchange earnings, and generates significant employment. The economic impact of climate change on Belize's tourism sector has been estimated at US\$48.3 million, which includes the effects of reduced tourism demand and the loss of facilities (from sea level rise), beaches (from coastal erosion), and reef-based ecotourism. The Belize Barrier Reef not only supports vibrant tourism, fishing industries, and livelihoods for communities, but also shelters Belize's extensive coast from high velocity winds that cause erosion and coastal damage. According to the World Resources Institute's assessment in 2008, approximately two-thirds of the mainland coast is protected by coral reefs. The degree of protection varies with reef type, depth and distance from the shore, as well as with the elevation and slope of the shore, the geological origin of the area, and the wave energy along the coast. Emergent reefs, such as the Barrier Reef, can mitigate over three-quarters of wave energy. Reefs close to shore provide the most protection since waves have less chance to regenerate. A study estimates that the economic losses associated with a 90% coral collapse in the Caribbean can be at between 9 and 12 billion dollars per year (Vergara et al., 2009).

While most nations and natural capital assets in the Latin America and Caribbean region are likely to be heavily impacted by climate change, Belize presents an early case of negative ecosystem-wide impacts on its coral reef induced by climate change related damages that are exacerbated by local stressors (e.g., sedimentation, nutrient pollution from agrochemicals, and unsustainable uses of reef resources). Of the ecosystems in Belize, the barrier reef ecosystem is assessed as being highly vulnerable and is identified as a "Critical Area for Conservation: [with] high species richness and potentially severe climate-induced destabilization." Several indicators support this: increasingly frequent and wide-scale bleaching events throughout the Caribbean Region induced by gradual and consistent increases in sea surface temperatures; increasing ocean acidification; reduction of coral cover as a consequence; and reduction in fisheries annual catch. High sea surface temperature anomalies have significant impacts on coral reefs in the Caribbean, especially if no significant large-scale adaptation measures are undertaken. Optimal water temperatures for Caribbean corals range from 25°C to 29°C. There is some evidence that corals have the ability to adapt to higher temperatures if given enough time to adapt without other chronic stressors (e.g., overfishing, pollution, rapid coastal development, etc.).

The anticipated intensification and increase in the frequency of hurricanes threatens the survival of

coral reefs. The frequency of occurrence of major hurricanes is indicative of a broader increase in average tropical cyclone wind speeds as sea surface temperatures rise, as well as a shift in the intensity distribution towards more Category 4 and 5 hurricanes. An analysis of the global tropical cyclone intensity data beginning in 1970 indicates an average increase in intensity of 6% for a 0.6° C SST increase. High-resolution climate models indicate a 2% intensity increase when scaled for a 0.6° C SST increase, and potential intensity theory yields an increase between 2.7% and 5.3%. Hurricane events lead to disturbance and mortality of coral recruits through sediment scouring, direct mechanical breakage, and the removal of substratum. Post-hurricane events such as an ephemeral bloom of blue-green and filamentous green algae may also create further stress. Hurricanes cause a devastating reduction in live coral cover when they coincide with a bleaching event. It has been reported that a mass-bleaching event coinciding with hurricane Mitch in 1998 resulted in a 48% reduction in live coral cover across the Belize reef system (Handwerk et al., 2003).

Given Belize's location and vulnerability to climate change, one effective way of adapting to climate change is through promotion of ecosystem-based adaptation measures that strengthen the resilience of the reef and associated habitats. An effective approach to protect corals is to strengthen and improve the overall health of the ecosystems associated with the coral reef. A recent study demonstrated that bleached corals recover to normal growth rates more quickly when they have clean water and plentiful sea life at their side (Carilli et al., 2009). Researchers found that following a major bleaching event, star coral (*Montastraea faveolata*) on various reefs in Honduras and Belize was able to recover and grow normally within two to three years when the surrounding waters and reef were relatively healthy. In comparison, those corals living with excessive local stresses, such as pollution, were not able to fully recover after eight years. Similarly, a study (Mumby, 2006) found that reefs in Belize with healthy populations of grazers (e.g., parrotfish and surgeonfish) were far more likely to recover from hurricane damage and achieve prior levels of live coral cover than reefs whose grazers had been overfished, the latter being far more likely to undergo a phase shift to an algal dominated reef. In a related study, Mumby et al. also found that reefs contiguous to healthy mangrove habitats were more likely to recover from environmental stress, demonstrating the importance of habitat connectivity in maintaining the health of the coral reef ecosystem. Therefore, adaptation measures for coral reefs must include broader management measures, such as controlling overfishing and associated ecological imbalances through the establishment of replenishment marine reserves as well as controlling land-based threats to reefs.

II. Proposed Development Objectives

The objective of the proposed Project is to implement priority ecosystem-based marine conservation and climate adaptation measures to strengthen the climate resilience of the Belize Barrier Reef System.

III. Project Description

Component Name

Component 1. Improving the protection regime of marine and coastal ecosystems

Comments (optional)

Component Name

Component 2. Promotion of Viable Alternative Livelihoods

Comments (optional)

Component Name

Component 3. Raising Awareness and Building Local Capacity

Comments (optional)**Component Name**

Component 4. Project Management, Monitoring and Assessment

Comments (optional)**IV. Financing (in USD Million)**

Total Project Cost:	7.31	Total Bank Financing:	0.00
Financing Gap:	0.00		
For Loans/Credits/Others			Amount
Borrower			1.78
Adaptation Fund			5.53
Total			7.31

V. Implementation

The Financial Secretary of the Ministry of Finance and Economic Development (MFED) is the designated authority who is charged to endorse the proposed Adaptation Fund Project. The Ministry of Forestry, Fisheries and Sustainable Development (MFFSD) is responsible for the overall implementation of the Project with the fiduciary assistance of Protected Areas Conservation Trust (PACT). MFFSD houses key units for the implementation of the Project, including Fisheries Department, Coastal Zone Management Authority and Institute (CZMAI), and National Protected Areas Secretariat (NPAS). Particularly, Fisheries Department is responsible for capture fisheries, aquaculture, as well as MPAs, thus assumes the central role in implementing the proposed Project.

The Project Steering Committee (PSC) will support general Project strategic guidance and implementation oversight. The PSC will be chaired by the Chief Executive Officer (CEO) of the MFFSD, and comprised of representatives of key ministries/organizations including the MFED, CZMAI, NPAS, and PACT. The Technical Advisory Committee (TAC) will provide general technical guidance for Project implementation, as further set forth in the Project Operational Manual (POM). The TAC is comprised of representatives from Fisheries Department, the Department of the Environment, Climate Change Office, Economic Development under the MFED, NPAS, and PACT.

Project Implementing Agency Group (PIAG) within MFFSD would carry out the day-to-day management of the Project and Sub-projects, including coordination, supervision, monitoring, quality control, socio-environmental management, and reporting in accordance with the Grant Agreement and the Project Operational Manual (POM). The PIAG will consist of a Project Coordinator, a Senior Technical Officer, staff from Fisheries Department, and fiduciary staff of PACT. PACT will be responsible for ensuring sound fiduciary management of the Project's resources. Funds will be transferred to PACT under a Subsidiary Agreement with the Government. No funds will flow directly to the Sub-project beneficiaries.

VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04	x	
Forests OP/BP 4.36	x	
Pest Management OP 4.09	x	
Physical Cultural Resources OP/BP 4.11	x	
Indigenous Peoples OP/BP 4.10	x	
Involuntary Resettlement OP/BP 4.12	x	
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60	x	

Comments (optional)**VII. Contact point****World Bank**

Contact: Enos E. Esikuri
 Title: Senior Environmental Specialis
 Tel: 458-7225
 Email: eesikuri@worldbank.org

Borrower/Client/Recipient

Name: Belize
 Contact:
 Title:
 Tel:
 Email:

Implementing Agencies

Name: BZ PROTECTED AREAS -PACT
 Contact: Dennisia Francisco
 Title: Executive Director
 Tel: 5018223637
 Email: Dennisia@pactbelize.org

Name: Ministry of Forestry, Fisheries and Sustainable Development
 Contact: Adele Catzim-Sanchez
 Title: Chief Executive Officer
 Tel: 501-822-1401
 Email: ceo@ffsd.gov.bz

VIII. For more information contact:

The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-4500
Fax: (202) 522-1500
Web: <http://www.worldbank.org/infoshop>