# Donors Committee
## Short Procedure
Expires on 9 December 2015

MIF/AT-1385
25 November 2015
Original: English
**Public**

**To:** The MIF Representatives

**From:** The Secretary

**Subject:** Barbados. Nonreimbursable technical-cooperation funding for the project "Public-private Partnership to Preserve Coral Reefs"

**Basic Information:**

Executing agency ..... Bellairs Research Institute

Amount ..... up to US$818,550 or its equivalent in other convertible currencies

Source ..... Multilateral Investment Fund

**Inquiries to:** Gregory Watson (extension 2667) or Ruth Houliston (telephone Country Office in Barbados 246-627-8546)

**Remarks:** The Representatives are requested to inform the Secretary, in writing, no later than **9 December 2015** if they wish to interrupt this procedure. If no such communication is received by that date, the attached resolution will be considered adopted by the Donors Committee, and a record to that effect will be made in the minutes of a forthcoming meeting.

**Reference:** PR-3659(11/10), DE-214/10, MIF/AT-1138(7/11), MIF/DE-29/11, MIF/AT-1167(12/11), MIF/DE-59/11

**PUBLIC**

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK
MULTILATERAL INVESTMENT FUND

# BARBADOS

## PUBLIC-PRIVATE PARTNERSHIP TO PRESERVE CORAL REEFS

**(BA-M1014)**

## DONORS MEMORANDUM

This document was prepared by the project team comprised of: Gregory Watson (MIF/ABG); Ruth Houliston (MIF/CBA), Co-Team Leaders; Vashtie Dookiesingh (MIF/CTT); Steven Wilson (MIF/ABG); Cassandra Rogers (RND/CBA); Gerard Alleng (INE/CCS); Michele Lemay (INE/RND); Brian Muraresku (LEG/NSG).

**TABLE OF CONTENTS**

**PROJECT SUMMARY**

**PUBLIC-PRIVATE PARTNERSHIP TO PRESERVE CORAL REEFS**

**(BA-M1014)**

The project seeks to mainstream a business model for coral conservation that will sustain livelihoods in Barbados' key tourism sector. The *central problem* to be addressed by this project is that - without an appropriate intervention - the declining health of Barbados' nearshore reefs is likely to threaten the physical and economic viability of the coastal zone. This will result in biodiversity and habitat loss, destabilization of the beach, and will invariably put at risk the livelihoods of the wide range of stakeholders who depend on the reefs. While the Ministry of Environment, Water Resources, and Drainage's[1] Coastal Zone Management Unit is implementing an IDB project[2] to strengthen public capacity and develop nurseries for coral stock, the government cannot be expected to financially sustain coral restoration work over the long-term on its own.

The project seeks to address these challenges by (i) supporting the establishment of a structured, representative private body to serve as a partner and interlocutor for coral conservation efforts, and (ii) developing a public private partnership approach which builds on public investment in technology for coral conservation, coordinates the interests of the users, creates an economically sustainable approach to leveraging this natural capital, and is funded and implemented by private users. Ensuring sustainability of conservation activities is central to the model, and clear income and revenue-generating activities - that will offset costs over time – are planned for and will be executed as part of the project.

The project will be implemented over a period of forty-eight (48) months. It is expected that this project will result in (i) changes in attitudes and a reduction of harmful practices that affect reef health; (ii) new livelihood opportunities centered on the protection of coral reefs; and (iii) reef recovery and healthier reefs, which in turn will: stabilize income of MSEs (dive operators, sea-based tour operators, fisher folk); contribute to reduced beach erosion/increased beach quality, allowing hotels to maintain occupancy, staff income, and employment levels; and reinstate biodiversity and fish stocks, allowing fisher-folk income levels to stabilize.

The project is expected to develop new and innovative partnerships between at least 25 public and private actors and change the way in which these actors collaborate for improved coral health and economic productivity, including shared risk, and private revenue generation to offset operating costs. The project aims to contribute directly to sustaining operations of at least 40 firms in the tourism value chain; create or maintain at least 80 jobs within firms targeted by the project; and, at a minimum of 7 hotels which are expected to contribute financing towards the project. The project aims to reach 5,000 people through targeted community outreach, and 2,500 people and 250 MSEs are expected to adopt new practices to protect and restore coral reefs.

The business model is centered on coral gardening through which at least 60,000 units of coral, produced in a laboratory, will be transplanted into the marine environment. By the end of the project it is expected that up to 50,000 people will be reached by new tourism product

[1] Hereafter referred to as the Ministry of Environment.

[2] BA-L1014, Coastal Risk Assessment and Management Program

marketing campaigns centered on coral restoration. Of these, up to 10,000 tourists are expected to participate directly in new coral care and restoration tours.

## ANNEXES



## APPENDIXES



## INFORMATION AVAILABLE IN THE TECHNICAL DOCUMENTS SECTION OF MIF PROJECT INFORMATION SYSTEM



## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| **DNA** | Diagnostic of Executing Agency Needs |
| **IADB** | Inter-American Development Bank |
| **MIF** | Multilateral Investment Fund |
| **MSE** | Micro and Small Enterprise |
| **OR** | Operating Regulations |
| **PCU** | Project Coordination Unit |
| **QED** | Quality for Effectiveness in Development |
| **TOR** | Terms of Reference |

**PROJECT INFORMATION**

**PUBLIC-PRIVATE PARTNERSHIP FOR THE PRESERVATION OF CORAL REEFS (RG-M1014)**

| | | | |
|---|---|---|---|
| **Country and Geographic Location:** | Barbados | | |
| **Executing Agency:** | Bellairs Research Institute of McGill University | | |
| **Access Area:** | Access to Basic Services and Green Growth | | |
| **Agenda:** | Leveraging Natural Capital; Adaptation to Climate Change | | |
| **Coordination with Other Donors/Bank Operations:** | Coastal Zone Management Unit (CZMU), Ministry of the Environment, Government of Barbados; 2463-OC-BA; BA-L1014 (Coastal Risk Assessment/Management); RG-1200 (Climate Change Resilience); DR-M1035 (Coral Gardening); RG-T2381 (Coral Reef Restoration) | | |
| **Direct Beneficiaries:** | 40 MSEs (dive operators, sea-based tour operators)<br>4,625 (tourism employees, hotel employees and self-employed fisher folk)[3] | | |
| **Indirect Beneficiaries:** | 2500 people and 250 SMEs that will adopt more environmentally sustainable practices<br>7 hotels that will increase eco brand appeal through participation in the program | | |
| **Financing:** | Technical Cooperation: | US$ 818,550 | 53% |
| | Investment: | US$ 000,000 | |
| | Loan: | US$ 000,000 | |
| | **TOTAL MIF FUNDING:** | US$ 818,500 | |
| | Counterpart: | US$ 722,400 | 47% |
| | Co-financing (if available): | | 00% |
| | **TOTAL PROJECT BUDGET:** | US$ 1,540,950 | 100% |
| **Execution and Disbursement Period:** | 42 months of execution and 48 months of disbursement. | | |
| **Special Contractual Conditions:** | Conditions prior to first disbursement will be: (i) selection of a technical coordinator; and (ii) approval of the Operating Regulations by the MIF Supervision Team Leader. | | |
| **Environmental and Social Impact Review:** | This operation was screened and classified as required by the IDB's safeguard policy (OP-703). Given the limited impacts and risks, the proposed category for the project is C. | | |
| **Unit with Disbursement Responsibility:** | CBA | | |

[3] # Beneficiaries calculated as follows: #lower-income employees of 7 main hotels (approximately 500 employees/hotel); 50% fisher folk (2,125); 15 dive operators, 25 sea-based tour operators

## 1. BACKGROUND AND JUSTIFICATION

### A. Diagnosis of the Problem to be addressed by the Project

1.1. The coastal zone is Barbados' most valuable natural asset and is also its main economic asset. Sandy beaches, coral reefs and other coastal ecosystems distributed along 97 km of shoreline, rich biodiversity, and a warm tropical climate create optimal conditions for the island's dominant tourism industry[4].

1.2. Coastal tourism is the backbone of the Barbadian economy, accounting directly and indirectly for more than 40% of GDP[5]. The *hotels and restaurants* sector is directly responsible for 12% of GDP and, as the second largest employer, accounts for over 10% of total employment. Meanwhile, employment generated by the *wholesale and retail trade sector* - the island's largest employer, contributing to 16% of total employment - is heavily dependent on servicing tourist arrivals[6]. Over 95% of industry's physical-plant is located on or near the coast, and over half the island's population resides along the coast as well. *It is clear that the island's beaches and wider coastal-zone are inextricably linked to the socio-economic well-being of the local population.*

1.3. As a key form of natural capital, coral reefs play a critical role in the maintenance of the island's beaches and coastal zone. First, coral reefs offer essential natural protection against beach loss, storm surge, and wider coastal erosion, through wave attenuation and sand creation. Second, reefs support marine ecosystems by creating an ideal habitat for marine flora and fauna. Coral Reefs are particularly important in the maintenance of fish stocks and biodiversity as they provide a natural haven for juvenile fish.

1.4. **However, coral is degraded, and climate change and climate variability are expected to increase the rate of loss of corals.** Coral damage contributes to the following[7]:

- An intensification of beach and coastal erosion resulting from a combination of higher water levels and increased wave amplitude;
- More severe flood risks and inundation from storm surge;
- Declining fish stocks and biodiversity, as habitats sustained by coral reefs decline;
- Due to damage, many reefs are too geographically dispersed to reproduce sexually which is impeding the recovery process[8].

1.5. Coral reefs are also an *economic asset and public good*, contributing both directly and indirectly to a range of economic activities that support diverse livelihoods across

[4] Coastal Risk Assessment and Management Program (2463/OC-BA; BA-L1014)

[5] IDB Country Strategy with Barbados (2015-2018).

[6] Central Bank of Barbados (employed labor force by industry data, 2013)

[7] Studies for the Preparation of the Barbados Coastal Risk Assessment and Management Program (2463/OC-BA; BA-L1014), Components 1 & 2 – Coastal Risk Assessment, Monitoring and Management & Design of Coastal Infrastructure: Terms of Reference.

[8] Coral can be restored through gardening, which creates new colonies that can grow, and that are closer to each other to encourage sexual reproduction.

coastal communities[9]. With more than one million tourist person days[10] attracted to beach locations across Barbados each year, marine-based recreational service providers (dive operators and vendors of activities including boat tours, snorkeling and glass bottom boat trips etc.) represent an important segment of the tourism industry's ancillary services. The majority of these service providers are micro and small enterprises (MSEs) that depend directly on the prevalence of healthy corals and their associated marine ecosystems for their livelihoods. The quality of recreational marine activities contributes significantly to the overall tourism experience – and visitor satisfaction plays an important part of encouraging repeat tourism on which Barbados is particularly dependent.[11]

1.6. In addition, the fisheries sector supports MSEs that depend on the biodiversity of marine flora and fauna sustained by the island's reefs. MSEs in the fishing industry include fishermen (who go out to sea); fisherwomen/vendors (who clean, prepare and retail the fish); and ancillary service providers including mechanics and carpenters who repair boats/outboard motors and retailers of fishing tackle and supplies. The Government of Barbados does not provide disaggregated data on the fisheries sector. However, data is available on the *Agriculture and Fisheries Sector*, which represents approximately 3.6% of GDP[12] (2014 data). Presently there are 2,125 fisher folk registered with the Fisheries Division, based on the 2007 report data, and 18% (or 382 fishers) of these are coastal fishers. Coastal fishers are particularly important for food security in Barbados, however this group has been significantly impacted by the effects of coral reef erosion and the resulting depletion of the near-shore fish stock. This is evidenced by lower average coastal catches in Barbados, compared to the average catch-range in similar coastal areas/conditions in other countries[13]. The loss of fish stock off the island's coastlines has also affected the incomes of MSEs in this sector, even as the industry remains a very important, in some instances exclusive, source of livelihood for many households across the island's fishing communities[14].

1.7. Finally, hotels along the shoreline depend on healthy coral reefs to protect beaches and beachfront property from coastal erosion, which worsens when reefs are degraded. Tourists stay at hotels for access to wide, clean beaches. These beaches are frequently eroded due to winter swells and storms. As reports of eroded beaches reach tourists, they may choose not to visit Barbados, damaging the tourism industry and resulting in a

[9] Two stakeholder meetings were held in the preparation of this abstract with hotels, dive operators, scientific organizations, and tourism operators to analyze their use of coral as a source of livelihoods.

[10] Central Bank of Barbados 2015 data (long stay arrivals and cruise passengers)

[11] Currently the Government of Barbados' statistics on the tourism sector is based exclusively on data obtained from hotels and restaurants. Disaggregated statistics on other sub-sectors of the tourism industry, including those relevant to this project are not presently available. To address this data gap the Barbados Country Office will undertake a consultancy in the first quarter of 2016: Valuing the Contribution of Tourism's Ancillary Services to the Barbados GDP, which will provide important data for this project. The study will provide (sex-disaggregated) data and analyze the contribution of recreation sea-based service providers (dive operators, catamaran/boat tour operators) to GDP, employment and household income, as well as conduct a gender diagnosis that will be utilized and periodically updated by CORALL during project execution.

[12] Central Bank of Barbados, 2014 data. Non-Sugar *Agriculture and Fisheries* accounted for 3% of total employment in 2014, however disaggregated data on employment in the *fishing industry* is not available.

[13] Mahon R., C. Parker, T. Sinckler, S. Willoughby and J. Johnson. 2007. White paper. The value of Barbados' fisheries: a preliminary assessment. Fisheries Division, Ministry of Agriculture and Rural Development, Barbados (August 2007).

[14] ATN/ME-12887-RG Building Resilience of Coastal Communities (Community Adaptation Plans Oistins and Weston)

need for reactive measures. Beach erosion has resulted in hotels having to close for months at a time for costly beach restoration activities[15]. When these hotels close, large numbers of their employees, and those who provide goods and services to the hotels, either lose their jobs or lose income. Hotels are particularly interested in supporting coral restoration by funding innovative coral projects, as coral can naturally prevent erosion, provide part of the sand that otherwise would have been washed out, and prevent the costly need to close for beach restoration. Indeed, in the stakeholder meetings held during the preparation of this abstract large hotels such as Sandy Lane and the Colony Club, which employ hundreds of people, indicated that they have plans in place to close for periods of time should the beachfront of their properties require extensive restoration.

1.8. The **central problem** is that the health of Barbados' nearshore reefs is declining and, w*ithout an appropriate intervention*, human and environmental stressors exacerbated by natural disasters and climate change are likely to threaten the physical and economic viability of the coastal zone.[16] If the limestone structures of coral colonies are destroyed, this will result in biodiversity and habitat loss, destabilization of the beach, land reclamation by the sea, and the loss of important barriers that protect beaches from wave destruction. The declining condition of the island's coral reefs must be addressed, otherwise invariably the livelihoods of the wide range of stakeholders who depend on the reefs will be put at risk. While the Ministry of Environment's Coastal Zone Management Unit is implementing an IDB loan operation to strengthen public capacity, undertake technical studies on coral cultivation, and develop nurseries for coral stock, the government cannot address this complex challenge on its own. A structured, representative private body to serve as a technical and financial partner and interlocutor for coral conservation efforts is required, and a private-sector approach which coordinates the interests of the users of coral and that is funded and implemented by private users as a complement to public investment and stewardship of this critical natural infrastructure is necessary. A public private partnership model will create an economically sustainable approach to restore, protect and leverage this natural capital.

The causes of the problem are complex and multifaceted, and include primarily the following:

(i) **Poor environmental practices** such as littering and pollution from chemicals and other harmful substances primarily domestic sewage and artificial fertilizers (e.g. landscaping, golf course maintenance, and agriculture) which damage coral ecosystems;

(ii) **A general lack of awareness of the drivers of coral degradation** among dive operators, fisher folk, and the general population (e.g. detrimental fishing practices, careless recreational users etc.), which perpetuates the continuation of harmful practices;

(iii) **The lack of a national framework for institutionalized coordination and engagement amongst public and private stakeholders** fosters the perception of "competing interests". Various sectors do not work together to implement holistic solutions. The government has a dedicated unit devoted to coastal issues, the Coastal Zone Management Unit (CZMU), which oversees coastal policy, research, and programs in

[15] One example is the Mango Bay hotel which closed for a period of time for beach restoration.

[16] Coastal Risk Assessment and Management Program (2463/OC-BA; BA-L1014)

collaboration with the private sector. However, the lack of a private body to liaise with the CZMU results in competition among private interests and difficulty in partnering with the government in a systematic way.

(iv) **Inadequate legislated protection of the marine environment means that the Government cannot solve this problem alone.** There is currently only one small no-take legislated Marine Protected Area (MPA) in Barbados, the Folkestone Park and Marine Reserve on the West Coast. The resources required to indefinitely support an expanded base of MPAs are too large for the public sector alone to sustain.

1.9. **Economic Impact:** Tourism is a primary contributor to GDP and particularly foreign exchange earnings. In the medium to long term a reduction in the number of visitors and/or length of visitor stays due to hotel closures and degradation of beaches and marine ecosystems - which are the primary draws for the Barbados tourism product - will have a negative impact on the economy.

1.10. **Collective Action and Possible Solutions:** The technology now exists to successfully culture corals from fragments of a parent colony. Cultured corals can subsequently be transplanted to degraded or damaged reefs. Restoration of coral reefs through asexual culture is considered a low-cost, long-term mitigation measure to combat coastal erosion as well as an adaptation measure to climate change. Enhancing the abundance of selected, thermally-resistant, reef-building corals would strengthen reef systems, resulting in improved coastal resilience, wider beaches and sustainability of livelihoods. Healthy and restored coral reefs increase biodiversity by serving as spawning, nursery, breeding and feeding grounds for many species. Globally there is increasing interest and recognition of the need for active restoration techniques - and coral nursery programs now stand at the forefront of reef rehabilitation campaigns.

1.11. Research[17] has demonstrated that restoration should not be considered a one-off job - a successful nursery and restoration program requires a long-term commitment of financial capital and human resources, as it will take many years before desired systemic impact is achieved. In addition, this is not an initiative that can be successful without the participation of multiple stakeholders and government departments, including the tourism sector (hotels and ancillary tourism services), fishing industry, academia, and local populations. The degradation of corals in Barbados is therefore categorized as a collective action problem.

1.12. The Government of Barbados through the CZMU is executing the *Coastal Risk Assessment and Management Program (BA-L1014)* financed by an IDB loan, which is aimed at building resilience to coastal risks through improved conservation and management of the coastal zone. Under the loan, the CZMU is implementing an *Ecosystem-based Adaptation Pilot Project in Coral Reef Restoration* which will pilot a coral reef nursery program in Barbados for the first time. The pilot nursey program includes comprehensive field work/research to support selection of potential donor,

[17] Edwards, A. and E. Gomez (2007). Reef restoration concepts and guidelines: making sensible management choices in the face of uncertainty. The Coral Reef Targeted Research and Capacity Building for Management Program, University of Queensland, St Lucia, Australia.

nursery and recipient sites and establishing a terrestrial nursery for culturing coral fragments – to be transplanted later into the marine environment.

1.13. The CZMU have begun their nursery pilot in collaboration with the Bellairs Research Institute (Bellairs), a McGill University teaching and research facility[18] on the West Coast of Barbados, and the proposed Executing Agency (EA) for this project. Funding under IDB Loan BA-L1014 will allow CZMU to retrofit and equip an existing wet-laboratory at Bellairs to create a coral nursery for the cultivation of coral species.

1.14. The transplanting of cultured coral to the marine environment will commence within 12-18 months of initiating the coral nursery. It is expected that within 18 months following transplanting, reef systems will be strengthened with restoration efforts demonstrating adaptation and income generation results.[19]

1.15. However, the CZMU lacks the adequate human and financial resources to single-handedly undertake the sustained operation, maintenance, monitoring and adaptive management of coral nurseries and coral restoration. In the absence of a public-private partnership solution, sustainability of the coral nurseries beyond the duration of the pilot project financed under the loan is unlikely. Fortuitously, asexual propagation of corals requires technology that has been demonstrated to be within reach of small low-cost community-based projects that have access to scientific advice which favors a public-private partnership approach to sustaining the coral restoration initiative. This project is designed to structure this public-private approach.

## B. Project Beneficiaries

1.16. The target beneficiary groups of this project include MSEs operating in the marine-based recreational services sector and fishing industry[20] as well as those individuals employed directly by the island's hotels and restaurants. Target beneficiary groups can be classified as follows:

1.17. **Dive Operators:** There are approximately fifteen (15) dive operators in Barbados, most of whom are micro and small businesses. Dive operators are particularly affected by degraded coral, as the primary motivation for most divers to visit the country is to see coral and reef fish. Dive operators report that declining coral quality has already manifested itself in lower incomes, as customers, disappointed in the seascape they see, do not return as repeat customers, as had been the case in the past. This effect has been documented by tour operators in the stakeholder meetings held to prepare this MIF project.

[18] Bellairs Research Institute is Canada's only teaching and research facility in the tropics. Located in Holetown, Barbados, Bellairs Research Institute is a McGill University facility which maintains an open-door policy to all researchers with academic interests in tropical terrestrial and marine environments

[19] CZMU aims to determine required reefs dimensions (height, breadth) to achieve longer term results in terms of coastal resilience and beach restoration. Building coastal resilience and beach restoration is however highly variable and subject to many externalities – many of which this proposed MIF project will seek to address (e.g. attitudinal change, harmful fishing/marine practices, water quality).

[20] For the purpose of this project, MSEs in the fishing industry have been included as a *target beneficiary*, not only given their direct dependence on coral reefs, but also given their existing and potential impact on the natural capital. Without their involvement, harmful fishing practices will continue to impact negatively reefs and their dependent marine ecosystems.

1.18. **Sea-based Tour Operators:** These entrepreneurs include an estimated twenty-five (25) small and medium businesses such as catamaran, glass bottom and other boat tour operators. Their livelihoods are also negatively affected by the declining health of the reefs and dependent flora and fauna. Low levels of customer satisfaction, due to the condition of the reefs affects client demand, resulting in income loss.

1.19. **Fisher folk:** There are approximately 2,125 registered fisher folk in Barbados[21]. As a result of habitat and biodiversity loss, fisher folk are forced to travel further out in the ocean to catch fish, incurring higher fuel costs, and many have cut back on the number of days they fish. As a result, the volume of the catch and sales have fallen, resulting in reduced incomes.

1.20. **Hotel employees:** Higher intensity wave action and sea-swells, resulting in increased beach loss, particularly during the January to March period, has become a significant and growing concern to hoteliers, as this period of high-tides coincides with the peak tourism season (December to April). Beach loss is experienced acutely on Barbados' Platinum Coast (on the west coast) where most high-end resorts which employ large numbers of people are located. The Platinum Coast is impacted by this phenomenon more than other coastal areas because recreational beaches and sandy bays tend to be narrower here than in other parts of the island. Beach erosion has become so severe on the Platinum Coast that hotels face the possibility of temporary closure, should the quality of the beach experience decline to unacceptable levels. High-end operators are especially unlikely to compromise on the excellence in their product offering, given the reputational risk, as many depend heavily on return guests[22]. There are approximately 14,000 to 16,500 workers[23] employed in hotels and associated restaurants in Barbados. Closure of these tourism businesses, even for a short period, would result in a loss of thousands of jobs and livelihoods, particularly for lower-income employees.

1.21. There is a lack of empirical data on the MSE sector within Barbados, and at the time of project design, data is not available to support sex-disaggregation of targeted beneficiaries beyond expert and key stakeholder views that women are currently well represented in hotel employment, fishing, and as sea based tour operators. To address this data gap the Barbados Country Office will undertake a consultancy in the first quarter of 2016 to analyze the contribution of recreation sea-based service providers (dive operators, catamaran/boat tour operators) to GDP, employment, and household income; and will conduct a gender diagnosis of the MSEs (owners and employees). This information will be used and periodically updated by CORALL during execution.

## C. Contribution to MIF Mandate, Access Framework and IDB Strategy

1.22. This project seeks to develop a private sector business model that will complement, and provide sustainability for, a public initiative. First, the project will organize the private sector into a cohesive group within a body that will facilitate collective action between

[21] Fisheries Division Statistics (2015)

[22] MIF consultation with *Beach Regeneration Inc.* founded by the Sandy Lane Hotel Board of Directors. BRI Inc.'s mandate is to identify and implement measures to arrest beach-loss in the *Sandy Lane Bay* (March 2015);

[23] Ministry of Tourism and International Transport Statistics (2014). Variations account for (high-low) seasonality.

private actors, and serve as an interlocutor with the government. Through this body, tourism and other products will be designed and deployed to generate income for micro and small businesses and to provide sustainability for the coral gardening program over time, eventually covering all costs. Mechanisms will be developed to channel funds from large hotels, who depend on coral as natural capital, into the program. As described in the background section, many micro and small businesses in Barbados depend on coral as natural capital for income generation, and employment in hotels can be impacted by continued declines in coral health. Without this project, reductions in income, livelihoods, and employment in Barbados could be seen.

1.23. Link to the Agenda. This project contributes to both the Leveraging Natural Capital and Adaptation agendas. First, it seeks to protect and sustainably use a natural resource, coral, for livelihoods and income generation. Second, coral reefs have adaptive properties that reduce the impacts of climate change on coastal areas. This project seeks to both leverage the natural resource and increase its adaptive capacity, as coral is important for reducing storm surges and beach loss. In addition, the project helps to create alternate livelihoods for MSEs impacted by climate change (fisherfolk), who will provide tourism services in the context of the project. The project will contribute to the knowledge of the PROADAPT facility by providing an example of a business model that supports both adaptation and income generation.

1.24. Collaboration with the Bank Group. This project is consistent with the Ninth General Capital Increase in Resources for the Inter-American Development Bank (GCI-9) (AB-2764), as it contributes to the overall strategic goals of (i) supporting development in small and vulnerable countries by reducing poverty and inequality and promoting sustainable growth; (ii) facilitating development through the private sector, especially by increasing support for SMEs; and (iii) by protecting the environment and responding to climate change. It is also consistent with the IDB's Institutional Strategy, which calls for the sustainable use of natural resources, the IDB's Climate Change Strategy and Biodiversity Platforms, which encourage projects that support natural capital and adaptation, and priority business area 5 of NewCo, which encourages projects related to green growth.

1.25. This project is well aligned with the overall objective of the IDB's Barbados Country Strategy 2014-18 which is to focus on "private sector competitiveness and improved efficiency of public sector services to address binding constraints to growth. Moreover, the project directly supports two of the four Country Strategy priority areas: (i) Tourism: under which the Country Strategy "aims to support competitive and sustainable tourism growth in Barbados (and) provide support to diversify tourism products"; and (iv) Integrated Coastal Zone Management and Climate Resilience (ICZMU), under which the Bank will "continue ongoing interventions and expand support for risk-based coastal planning, long-term shoreline protection and beach enhancement, including the use of hazard-resilient coastal infrastructure and ecosystems-based adaptation measures." The proposed project is a relevant and responsive private sector and community driven complement to the extensive work that has been undertaken in Barbados to strengthen Integrated Coastal Zone Management and will leverage and strengthen the technical and economic impact and sustainability of investments made under the currently disbursing IDB Loan 2463/OC-BA, described above.

1.26. Thus, the project is aligned with the recommendations of the *Country Program Evaluation: Barbados 2010-2013* to "strengthen the relevance and development effectiveness of the Bank's program in Barbados through a greater engagement with the private sector – in particular making better use of MIF operations"

1.27. The MIF portfolio in Barbados responds to two key development challenges, first the strengthening of linkages between MSEs and the island's dominant tourism sector, and second, the related issue of climate change adaptation, particularly in coastal communities. The MIF is currently financing two operations to support the integration of micro and small producers, processors, and service providers into the supply chain of cruise liners and hotels and restaurants anchoring the tourism sector. In addition a MIF regional project to support climate change adaptation by communities and micro businesses in 8 coastal communities and 4 countries[24] was executed from Barbados. Finally, a recently completed MIF operation supported the greening of micro and small enterprises to reduce their environmental footprints while realizing savings through increased efficiency and waste reduction. The development of a public private partnership for sustainable restoration and management of the island's coral reefs is a cross cutting initiative that complements existing investments and support provided by MIF.

## 2. PROJECT DESCRIPTION

### A. Objectives

2.1. The **objective at the results level** is to establish a sustainable public-private multi-stakeholder model to achieve long-term restoration of coral reefs, an essential public good for all of Barbados and a key asset for the country's dominant economic sector, tourism. The **objective at the impact level** is to leverage this restored natural capital to sustain employment from associated tourism businesses.

2.2. It is expected that this project will result in: (i) new livelihood opportunities centered on the protection of coral reefs; (ii) changes in attitudes and negative practices that impact negatively on reef health; and (iii) reef recovery and healthier reefs; which in turn will:

- **Stabilize the business operation of MSEs** (dive operators, sea-based tour operators, fisher folk) by developing coral gardening related diving/sea-based tour experiences; securing return guests; and involving tourists in coral gardening activities which will provide new income earning opportunities. It is possible that new non-traditional visitors will be attracted to Barbados given the opportunity to participate in eco-system restoration, further increasing tourism sector income opportunities.
- **Contribute to reduced beach erosion**, and therefore increased beach quality, allowing hotels to maintain operations, occupancy, staff income, and employment levels while also contributing to Barbados' adaptive capacity to climate change.

[24] RG-M1200

- **Reinstate biodiversity and fish stocks** closer to the shore allowing fisher-folk greater opportunities to fish closer to coastline at reduced costs. Fisher-folk income levels will be maintained through a combination of increased yield, lower/stabilized operational costs and potentially new income through involvement in coral gardening activities.

**B. Description of Model/Solution/Intervention**

2.3. **The MIF project seeks to mainstream a business model for coral conservation that will provide new income opportunities for micro and small businesses and sustain livelihoods in the country's key tourism sector.** To ensure sustainability of conservation activities it is essential that the intervention include clear revenue generating activities that will offset costs over time and also secure and sustain the engagement and direct participation of key stakeholders. Remuneration to MSEs will be sufficient to cover costs and provide a profit.

2.4. The design of this solution has incorporated the following critical factors:

- Structuring of a practical model for Public-Private management of coral conservation interventions. A key success factor of this model is the organization of diverse private actors within a representative agency the Coral Reef Restoration Alliance - Barbados (CORALL-Barbados) which will simplify the public sector's ability to engage private interests. Funds from the MIF will be used to foster trust and ensure active collaboration of all stakeholders.
- A shared value approach to the monetization of coral cultivation and gardening practices which include new tourism products/revenue; investment by hotels in coral restoration activities; academic fees for the use of laboratory facilities and associated research; as well as potential sale of cultured corals[25]
- Effecting behavioral change to reduce harmful practices that impact negatively on the health of coral reefs.

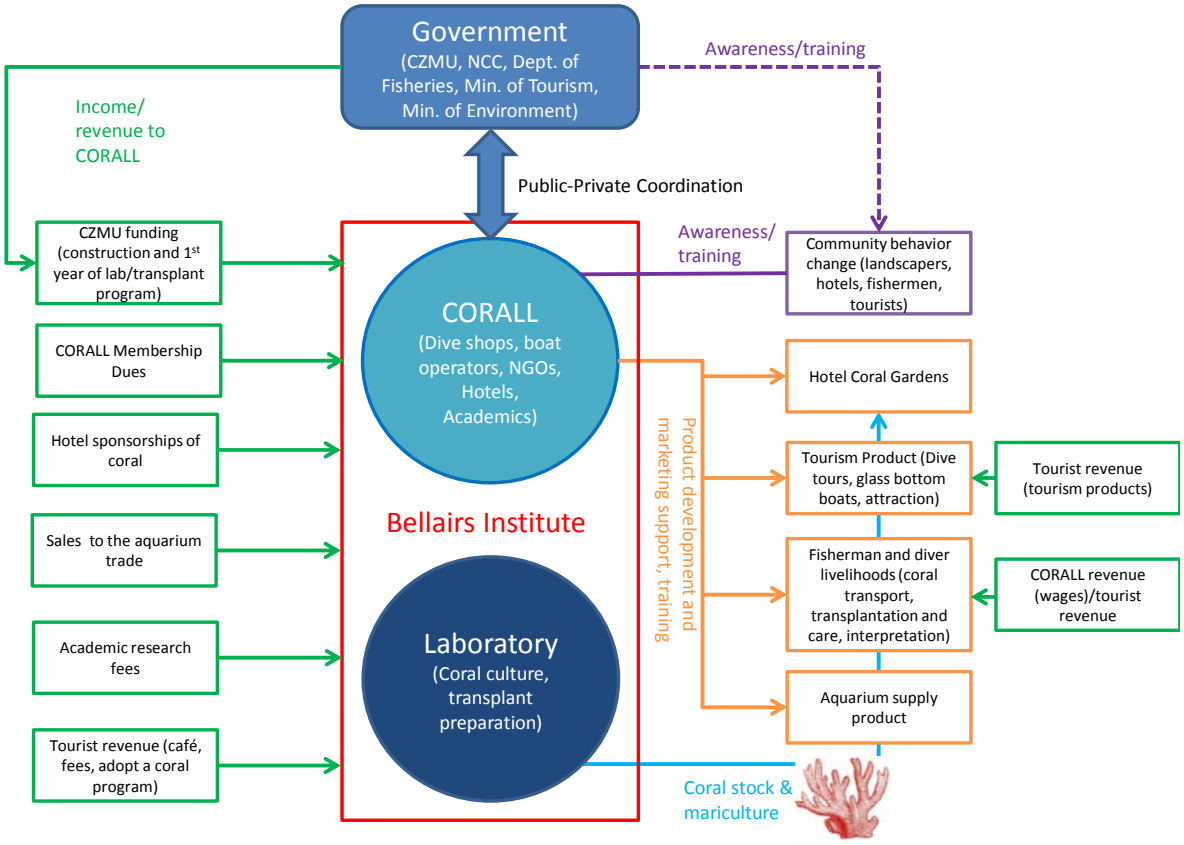
2.5. The intervention model's sustainability structure is outlined in Figure 1 below. A laboratory for coral aquaculture will be established at and operated by Bellairs with an initial capital investment provided by the Government of Barbados via the CZMU. MIF resources will support the development and marketing of a series of products and services linked to coral cultivation and restoration, including: tourism products, hotel coral gardens, alternate livelihoods and cultured coral sales. These products will generate diverse revenue streams to sustain and build coral cultivation and restoration activities over the medium term. Most of the revenue from tourism activities will accrue to MSEs. Revenue from other sources will accrue to CORALL for management of the program, strengthening of the Alliance, and ongoing laboratory costs.

2.6. In addition, MIF resources will incubate CORALL-Barbados within Bellairs, to support private investment, engage communities in a range of coral restoration activities and coordinate responses to coral restoration with key public actors within the Government of Barbados. This initiative will facilitate a more collective, integrated and sustainable

[25] Cultured corals are those that are grown in the laboratory but not viable for transplantation to the marine environment. These are by-products of the coral aquaculture facility.

response to climate and behavioral threats to the country's critical coral reef assets and effectively constitutes a public-private partnership approach to management of Barbados' coral infrastructure based on: investment by public and private actors, private sector led management of coral cultivation and coverage of ongoing operational costs from "user fees", community behavior change, and shared risk.

**Figure 1: Coral Restoration Intervention & Revenue Model:**




The proposed intervention model will be implemented through the following 4 project components:

## C. Components

**Component I: Creating a Resilient Partnership Ecosystem. (MIF: US$254,000); Counterpart: US$45,500).**

2.7. The objective of this component is to foster strong sustainable dialogue and engagement between key private, public and civil society actors. In recognition of the symbiotic dependence of a wide range of stakeholders on the health of coral reefs, and urgent need for coordinated action to arrest their decline, key civil society and private sector actors are in the process of establishing a **Coral Reef Restoration Alliance -**

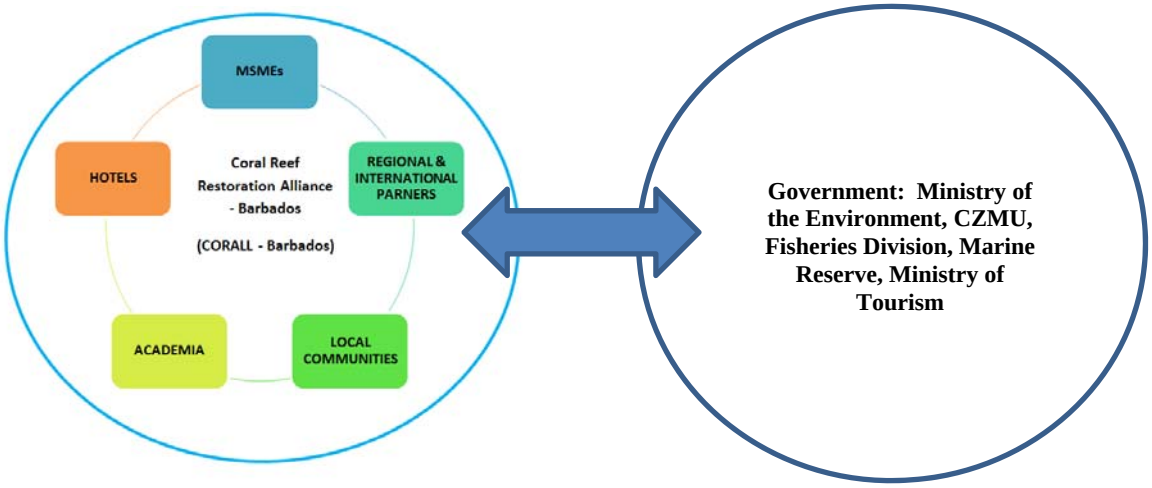
**Barbados** (CORALL–Barbados), with associated governance and structural arrangements. This private alliance is expected to be created by the time the project begins (see Figure 2 below).

2.8. The formation of CORALL–Barbados is being spearheaded by Bellairs. The proposed MIF project will work with Bellairs to support the Alliance in bringing together key local, regional, and international private sector and civil society stakeholders. CORALL-Barbados will provide a needed platform for inter-institutional engagement, joint-action and oversight in coral restoration, and will serve as the main coordination body representing the private sector in related policy and program dialogue with the government. The project will develop this collaboration mechanism to bring economic and institutional sustainability to the process of coral restoration. The alliance represents a critical pathway for addressing this collective active problem.

Key actors in the Alliance include Private sector, Academic Institutions, Civil Society and Regional and International Partners.

2.9. Importantly, by convening these actors, CORALL - Barbados will provide a more structured, rigorous and organized platform for sustained dialogue and engagement with the public sector.

**Figure 2. Coral Reef Restoration Alliance – Barbados as a counterpart for government**




2.10. Under this component MIF will operationalize and incubate CORALL - Barbados, develop partnership and fund raising strategies for the organization's financial sustainability, and create a structured mechanism for public-private collaboration.

2.11. The activities and products included under this component are as follows:

(i) Development of the CORALL - Barbados vision, mission and strategy.

(ii) *Creation of a plan to support medium term financial sustainability* and spin-off of CORALL-Barbados, including a business plan and fund raising strategy.

(iii) *Strengthening of public-private collaboration* through establishment of a collaboration structure and protocol between CORALL-Barbados and the public

sector, quarterly meetings of public and private stakeholders, and coordination of public and private activities in coral restoration.

(iv) *Development of a Resource Kit* for formalized structured engagement and funding of coral restoration by Hotels modelled after similar programs in Hawaii.[26]

(v) *Delivery of a targeted community outreach program* using the Ridge 2 Reef (R2R)[27] management approach.

**Component II: Development of the Ecological Restoration Business Model. (MIF: US$250,800; Counterpart: US$644,600).**

2.12. The objective of this component is to demonstrate the commercial viability of new sustainable business practices centered on the protection of coral reefs. This will be achieved by developing a diversified range of income generating products and services built on coral cultivation and restoration activities (see Figure 1). The delivery of these products and services will generate income for MSEs as well as CORALL - Barbados for reinvestment in coverage of ongoing operating costs of coral cultivation, transplanting, and monitoring, as well as ongoing stakeholder engagement and community awareness building beyond the period of MIF investment. Revenues from these sources will be shared between MSE beneficiaries and CORALL, resulting in a sustainable business model based on shared value. The business model will incorporate lessons learned and best practices arising from experiences with coral restoration within and beyond the Caribbean region, including a previous MIF project in the Dominican Republic[28], which demonstrated that coral gardening can be a profitable and sustainable MSE business model.

2.13. The shared value model will:

- create new livelihood opportunities around coral restoration and stabilize income levels of MSEs that rely on coastal natural capital;
- ensure the introduction of proper maintenance and monitoring protocols for coral nurseries;
- build capacity/skills (of local communities/MSEs/other stakeholders) in the application of these protocols;
- result in cultured coral being transplanted into the marine environment; and
- ensure commercial viability and economic sustainability of the system of coral restoration.

2.14. The activities and the products included under this component are as follows:

(i) *Creation of a coral culture laboratory.* Counterpart investment will be utilized to retrofit a building at Bellairs and equip it to serve as a bio-level safety 2.0 laboratory for coral cultivation. Cultured coral from this laboratory will be used as coral stock

[26] Coral Reef Alliance, Hawai'i Hotel Reef Stewardship Program

[27] The R2R approach was first introduced by the United States in the Pacific in 2001. The US Coral Reef Task Force, in collaboration with the National Oceanic and Atmospheric Administration (NOAA), and the *Hawaii Coral Reef Strategy* identified the reef ecosystem along the West Maui region as the priority management area. The MIF project builds on the best practice arising from the West Maui R2R initiative, see the following website for details: http://www.westmauir2r.com/;

[28] DR-M1035: *Coral Gardening to Enhance Tourism and Support Coral Reef Conservation*

for transplantation to the marine environment. Counterpart investment will also be used to fund operating and staffing costs of the facility for an initial period of 12 months.

(ii) *Training of MSEs, fisher folk, and hotel staff.* MIF resources will be used for training local MSEs to provide coral transplantation and care services. This will be achieved by using a train the trainer approach wherein local divers will be certified in PADI coral care adapted from MIF project DR-M1035.

(iii) *Tourism product development.* MIF resources will finance the development and marketing of a range of tourism packages around coral gardening that will provide income to MSEs and CORALL Barbados.

(iv) *Branding and marketing.* The MIF will support the development of a Brand and Logo for these tourism products and will finance a targeted promotional campaign domestically and abroad to launch the tourism products in the local market.

(v) *Training in tourism product offering.* Training in interpretation of coral gardening and restoration activities will be provided to dive operators, boat operators and fisherfolk.

**Component III: Research, Academic Partnerships, Monitoring and Evaluation. (MIF: US$62,000); Counterpart: [US$28,300).**

2.15. The objective of this component is to promote research (including paid use of the coral gardening facilities), market Bellairs as a cutting-edge global leader in coral gardening, and monitor and evaluate project results. This will be achieved by working closely with other local, regional and international academic institutions to develop research opportunities that can be monetized to support financial sustainability of coral restoration over the medium term. Research will be undertaken in the following core areas:

- Scientific & Technical Research: Control sites, similar to the sites selected for transplantation, will be monitored to provide a clear baseline against which to measure success. This research will assist in the development and distillation of key, lessons learned to support scaling of the project approach by national and international actors.
- Social Research: Research students will assess the social dimensions that contribute to the restoration initiative, including: attitudes to community stewardship and the best methods to engage and involve key stakeholders.
- Monitoring & Evaluation: Specific monitoring and evaluation systems for the project will be developed, based on scientific best-practice.

2.16. Under this component Bellairs will undertake the following main activities: (i) complete a Baseline Study and Data Collection and Monitoring System utilizing GIS and underwater imaging; (ii) execute periodic surveys of beneficiary MSEs; and (iii) attract fees from academic and international partners for use of the laboratory facilities, knowledge assets and related services of Bellairs and CORALL as part of a comprehensive fund raising strategy.

**Component IV: Knowledge Management and Communications Strategy. (MIF US$27,750; Counterpart US$4,000).**

2.17. Knowledge Exchange will be particularly important in the context of this project, as the MIF has financed a project with similar objectives in the Dominican Republic which has developed capacity and knowledge in coral gardening that can be adapted to the economic, social and environmental context of Barbados.

2.18. The objective of this component is to incorporate expertise and knowledge from a similar MIF project into the execution of this project, and to systematize project knowledge and results so that others may replicate the model.

2.19. In order to incorporate past lessons learned, the MIF will support the travel of key trainers from the MIF financed Dominican Republic project to Barbados to provide input on project execution, and will also support a knowledge exchange for key actors from Barbados to travel to the Dominican Republic, to conduct site visits and peer to peer discussions.

2.20. In terms of developing new knowledge, the project will seek to fill the knowledge gaps described below through specific products developed for the identified audiences.

2.21. **Knowledge Gap:** The project will contribute to reducing the Natural Capital and Adaptation Agendas' knowledge gaps, generating knowledge and lessons learned in:

(i) the application of an coral restoration business model as a collective action solution to the problem of coral degradation in Barbados, which can be applied to other islands in the region;

(ii) sustainable approaches to leveraging shared-value partnerships to facilitate stewardship/restoration of natural capital (coral reefs).

2.22. **Knowledge Objective:** The objective of this component is to systematize, document, and disseminate the experience and knowledge generated in this project, in order to:

(i) Raise awareness of the importance of coral restoration to sustain livelihoods

(ii) Replicate and broaden the results obtained through the design and testing of the coral restoration business model.

2.23. **Audiences:** The strategic audiences of the project are:

(i) Other civil society organizations, multilateral organizations and networks of experts interested in developing similar coral restoration projects;

(ii) Regional and International Environmental Agencies such as International Reef Restoration (Jamaica) interested customizing and replicating this project.

(iii) Government officials with an interest in expanding marine/coral restoration.

(iv) The Caribbean Tourism Organization.

2.24. Bellairs as a recognized international research center has extensive contacts with local and international marine environmental agencies. These relationships will be leveraged to reach the audiences above.

2.25. **Knowledge Products:** In order to meet these audiences' knowledge needs, the following knowledge products will be developed within the framework of the project:

(i) A Case Study on the application of a coral restoration business model as a collective action solution to the problem of coral degradation in Barbados. The model is potentially applicable to other Caribbean countries. Audiences include the Government of Barbados, hoteliers, dive operators in other coral-rich countries, academic and conservation organizations supporting sustainability of marine/coastal based livelihoods

(ii) Infographics to compile visual representations emphasizing the model, project milestones and accomplishments.

2.26. Knowledge products will be disseminated through two (2) existing relevant knowledge fora in Barbados and the region and through three special (3) events convened to share results with stakeholders and partners. At the project's closing, a workshop will be held with the Government Barbados and other private sector and civil society stakeholders to transfer knowledge. Given the government's high level of investment in the project's infrastructure (the aquaculture laboratory at Bellairs), and the importance of coral reef restoration to the Barbadian economy, the government is keenly interested in project results and scaling.

2.27. On an annual basis, the Executing Agency will update the Project Fact Sheet, which highlights basic information on the project, its challenges, the intervention strategy and results.

**D. Project Governance and Execution Mechanism**

2.28. **Execution Mechanism:** Bellairs will be the Executing Agency responsible for implementation of the project. Technical and managerial oversight will be provided by the Academic and Managing Director. To facilitate planning, implementation and co-ordination of project activities and continuous compliance with MIF's contractual requirements of the Executing Agency, Bellairs will establish a dedicated project executing unit.

2.29. The project executing unit will be resourced by a full-time Technical Coordinator who will be responsible for the day-to-day coordination of all project activities and will lead activities relating to business development; tourism marketing, outreach and fund-raising. The Technical Coordinator will also support Bellairs in managing the incubation of CORALL. The Technical Coordinator will report to the Academic and Managing Director. A draft Terms of Reference for the Technical Coordinator is included in Annex X in the project technical files.

2.30. In addition, the project execution unit will be staffed by a full time project assistant, a part time research assistant, and a part-time Accountant. The Project Execution Unit will be based within the Bellairs offices and supported by Bellairs' existing administrative and accounting staff. Details on the structure and reporting

requirements of the project executing unit will be defined in Project's Operating Regulations.

2.31. Bellairs, as the Executing Agency, will also be responsible for providing progress reports on project implementation and compliance with defined fiduciary requirements. Details on reporting and fiduciary management requirements are presented in Annex VII in the project technical files.

2.32. Technical activities in coral cultivation and transplanting and scientific input into monitoring of impact on coral reef health will be supported by laboratory assistants. For the initial year of operation the CZMU will fund 2 assistants to operate the laboratory, and laboratory activities will be transitioned to 2 part-time assistants financed through the project thereafter.

2.33. **Governance:** The project intervention model is focused on mobilizing and involving private interests in a partnership with public actors to address the collective action problem of coral reef degradation in Barbados. In order to secure and sustain a partnership approach, key stakeholders need to be represented in the governance structure of the project

2.34. To ensure that key public and private stakeholders are engaged in delivery of targeted results, the following governance structure is proposed:

2.35. The Bellairs Institute will lead and support the formation and development of CORALL-Barbados. The Technical Coordinator, supported by relevant expert consultants, will be assigned a key role to build out a strategic and business plan, including a fund raising strategy to ensure that project activities continue to be led by CORALL-Barbados after the period of MIF investment

2.36. While day to day management of project activities will be the responsibility of Bellairs, given the multi-stakeholder interests that will be necessary for the implementation of the intervention, and to ensure that both private and public key stakeholder participate in strategic oversight and decision making, a project steering committee will be convened. Details regarding the steering committee will be defined in the Operating Regulations.

2.37. One year before the project ends, a sustainability workshop will be held with all key stakeholders to identify specific actions needed to ensure the continuity of the project's activities and results.

**E. Sustainability**

2.38. The project will seek to achieve sustainability at two levels:

- CORALL will be incubated within Bellairs so that it will eventually become self-financing - ensuring the sustainability of the coral laboratory and associated coral restoration initiatives. The project is designed to leverage the technical research, lab infrastructure and initial operating costs for coral cultivation financed by the Government of Barbados via private business models that will generate revenue for the ongoing costs of CORALL. In addition, there are activities in the project to create strategies that will generate dues, fees, private sector financing and sponsorships.

- The public private management and investment model piloted by MIF is likely to be sustained beyond the life of the project. Over the years the Government of Barbados has utilized IDB loan and other public resources for capacity building and investment in coastal zone management but has recognized that the sustainability of these efforts over time requires partnership with the private sector. The intervention logic and governance structure of the proposed project will seek to build capacity and a sustainable framework for ongoing public private partnerships in restoration and management of the island's coral reef infrastructure ,

2.39. There are specific indicators related to the generation of income and CORALL's self-sufficiency which will close monitoring of progress towards sustainability. These indicators ensure an incremental commitment to full sustainability by month 48, with a key milestone at month 18 to show progress in this regard.

2.40. As a market driven model it is envisaged that MSE and livelihood activities will be sustainable through compensation. The project includes activities to design the tourism and commercial products so that they generate income for MSEs. Training will be provided to MSEs to build their capacity to maximize opportunities for income generation; and tourism products will be professionally branded and marketed to 50,000 tourists over the duration of the project. By the end of the project CORALL is expected to be able to finance these on-going marketing and training costs.

**F. Experience and Lessons Learned from MIF or other Institutions**

2.41. The proposed project will be implemented in close partnership with the CZMU which has begun the implementation of an Ecosystem-based Adaptation Pilot Project in Coral Reef Restoration, under the Coastal Risk Assessment and Management Program financed by the IDB (BA-L1014). Under this pilot project, marine coral nursery sites and recipient sites (along both the south and west coast) will be identified and piloted; and guidelines for transplantation, scheduling of evaluation, maintenance, and assessment plans will be established. These inputs will inform activities to be implemented under the MIF project.

2.42. The nursery program and restoration initiative will be integrated within the context of large country-wide initiatives including integrated coastal and watershed planning and marine spatial planning. Many of these important initiatives are already ongoing under the leadership of the CZMU with the continued support of the IDB under the Country Strategy 2015-2018. Also, under the IDB Loan, the CZMU continues to bring specialized consulting services in highly specialized areas of relevance to the project.

2.43. The project will benefit from lessons learned arising from the following key projects:

2.44. **ATN/ME-13126-BA Coral Gardening to Enhance Tourism, Support Coral Reef Restoration in the Dominican Republic**. The following key lessons learned arising from this project have been applied during the design of the Barbados project:

2.45. Early and sustained engagement with beneficiaries is necessary to ensure beneficiaries perceive their interests are being captured, thus ensuring their sustained involvement in the project. The Bellairs Research Institute has a long association with a wide range of private, public, and civil society stakeholders including key government agencies in the environmental and conservation field. The EA has worked closely with the MIF team to identify and ensure key stakeholders are actively involved, commencing with their early engagement in stakeholder consultations during the design of the project. A number of these agencies will become strategic partners, driving beneficiary participation.

2.46. Adequate provisions must be made for internal capacity (operational and financial support) as well as specialized inputs from expert consulting services given the highly specialized nature of the intervention area. Through its extensive network, the EA for the Barbados project has access to specialized inputs from the public and private sectors, as well as academia and civil society.

2.47. Specifically, the PADI certification on coral care developed under DR-M1035 will be transferred to Barbados by the trainer trained under that project. In addition, reports on the structure of the tourism product developed in the Dominican Republic will be used as inputs in the design of similar products in Barbados.

2.48. **ATN/ME-12887-RG Climate Change, Coastal Community Enterprises, Adaptation, Resilience, and Knowledge (CCCCC-ARK)**. This project provides lessons learned on the best mechanisms for community-based adaptation. These lessons include: the importance of describing the economic benefits of action in a holistic manner so that all stakeholders are able to see how their interests intersect (i.e. linking beach health to tourist arrivals to service demand, etc.); a need to ensure that the executing agency has technical skills in marine management; and management mechanisms for informal private protected areas. By involving the executing agency of CCCCC-ARK, CARIBSAVE, in the Association, the project will leverage CARIBSAVE's existing analyses of MSMEs in the tourism value chain, as well as their scientific knowledge on climate change, coastal zones, and coral restoration in the region.

2.49. **Carlisle Bay (Barbados) Marine Management Framework.** There is one successful example in Barbados of collective voluntary action in marine management amongst key stakeholders (including the Government of Barbados's Coastal Zone Management Unit (CZMU)), dive operators, fisher-folk, residents and hoteliers) located and operating on the Carlisle Bay on the South Coast. This group has established a multi-stakeholder marine management framework which functions as a voluntary Marine Protected Area (MPA). The main lessons learned from this initiative have been its success in obtaining results through intense public awareness/educational campaigns (financed by CZMU); engagement with the local community, tourists, and other users; and voluntary monitoring. However, as the initiative remains unlegislated and largely voluntary, there have been some important lessons regarding the limitations to its potential scope and impact.

## G. MIF Additionality

2.50. Non-Financial Additionality. The MIF brings significant non-financial additionality to this project. First, as part of the Bank Group, the MIF is able to effectively collaborate with the IDB to ensure that this project is implemented in concert with the IDB Loan (BA-L1014). In addition, the MIF has experience developing a similar project in the Dominican Republic (DR-M1035) and will leverage the studies, products and training developed in that project to reduce costs within the Barbados project, and ensure that lessons learned are incorporated. The MIF will develop cross-country learning opportunities to encourage this collaboration.

2.51. Financial Additionality. MIF funding is fundamental to providing sustainability to the coral gardening program. While the government is investing in the costs of the coral laboratory and transplantation for the first year, it is expected that the costs of the coral gardening program will eventually transfer to private stakeholders. The MIF's funds will (i) serve as a bridge to sustainability while private funding ramps up; (ii) fund the creation of business lines and income generating products that can fund ongoing operations; (iii) and develop an alliance of the private sector to collaborate on ongoing work in this sector.

## H. Project Results

2.52. It is expected that this project will result in (i) changes in attitudes and negative practices that impact negatively on reef health; (ii) new livelihood opportunities centered on the protection of coral reefs; and (iii) reef recovery and healthier reefs; which in turn will:

a. stabilize/possibly increase income of MSEs (dive operators, sea-based tour operators, fisher folk) as a result of the enhanced natural capital and improved diving/sea-based tour experiences; securing return guests; involving tourists in coral gardening activities which will increase income earning opportunities. In addition, it is possible that new non-traditional visitors will be attracted to Barbados given the opportunity to participate in eco-system restoration.

b. contribute to reduced beach erosion, and therefore increased beach quality, allowing hotels to maintain occupancy, staff income, and employment levels while also contributing to Barbados' adaptive capacity to climate change.

c. reinstate biodiversity and fish stocks closer to the shore. With this intervention, fisher-folk will be able to fish closer to coastline and their costs will stabilize. Fisher-folk income levels will be maintained through a combination of increased yield, lower/stabilized operational costs and new income from coral gardening activity.

2.53. By the end of the project it is expected that: (i) 250 firms (hotels, MSEs operating in the marine-based recreational services sector, landscapers, and fishing industry) will have adopted new coral restoration/gardening practices or technologies to protect coral

reefs; (ii) 2,500 people (fishers, divers, tourists/visitors, sunscreen vendors, hotel employees, residents) will have adopted new practices or technologies to protect coral reefs; and (iii) 60,000 units of coral will have been transplanted into the marine environment.

### I. Project Impact

2.54. The impact of this project will be the creation of new MSEs to implement the coral gardening project, and the adoption of new practices and the offering new products by existing MSEs.

2.55. The expected impacts include: (i) at least 40 firms still in operation 12 months after project completion; (ii) at least 80 jobs created, or maintained, by targeted firms by the end of the project; and (ii) none of the hotels operating in the project area need to close due to beach erosion.

### J. Systemic Impact

2.56. The project will advance systemic change by developing new partnerships between public and private actors and changing the way that these actors collaborate for improved coral health. By the end of this project it is expected that 25 public/private actors or institutions will change or apply new practices based on the MIF-sponsored project.

## 3. MONITORING AND EVALUATION STRATEGY

3.1. Baseline: Sex-disaggregated baseline data will be sourced from two primary resources. First, the project will use detailed scientific and economic studies completed in the context of the IDB loan program (BA-L1014), which provide a wealth of baseline information. Additionally, the project will collect specific baseline data that would not otherwise be available by undertaking surveys of beneficiaries. The CORALL Alliance will be leveraged in the collection of this data. Bellairs, as an academic research center, has experience collecting this kind of data, and will incorporate some of the baseline work in to student research projects.

3.2. Monitoring: Monitoring will be done consistently. Environmental indicators will be monitored through a combination of laboratory work, on-site visits to the transplantation sites, and collaboration with the government. Economic and social indicators will be measured through surveys of the beneficiary MSEs, reports to the CORALL Alliance by members, and revision of primary material such as financial statements and web hit reports. All data will be disaggregated by sex, where possible.

3.3. Evaluation: The project will undergo a mid-term and final evaluation. The mid-term evaluation will take place prior to month 26. The mid-term evaluation should focus on the success of the coral gardening approach, level of financial sustainability achieved, and degree of MSE behavior change. The final evaluation will focus on the same questions plus the following: Is coral gardening a cost-effective adaptation measure?; What income impacts can be expected to be seen through the leveraging of coral as

natural capital?; Which behavioral change strategies worked best with (i) the general population' (ii) tourists; (iii) MSEs; (iv) hotels?

3.4. The project final evaluation will review the success of public/private collaboration through interviews with the key actors in Barbados. In addition, the evaluation will review whether targeted audiences of the knowledge products have begun implementing similar projects.

3.5. Closing Workshop. The executing agency will organize a closing workshop at the appropriate time to assess along with other key stakeholder the outcomes achieve, identify additional tasks to guarantee sustainability and identify and disseminate lessons learned and best practices.

## 4. COST AND FINANCING

4.1. The project has a total cost of US $1,540,950, of which US$818,550 (53%) will be provided by the MIF, and US $722,400 (47%) by the counterpart. The execution period will be of 42 months and the disbursement period will be of 48 months.

4.2. Counterpart funding includes cash contributions from the Government of Barbados in retrofitting and outfitting a wet lab for coral cultivation at Bellairs Institute as well as financing of lab personnel, supplies and operating overheads for the initial 12 months of operation. In addition a key goal of the project will be to leverage additional funding from hotels and tourism operators to serve as medium to long-term revenue sources for sustainability of coral gardening (see Figure 1). While several hotels have indicated a willingness to support the project financially, none are ready to formally commit until the tourism products are developed, and the pilot nursery sites (funded by the existing counterpart) are active. In order to ensure that the project is sustainable, activities are included to develop a fund-raising strategy and to close negotiations with hotels. In addition, the project has set strict log frame indicators and milestones to measure progress in fundraising. Should these milestones not be met, the project will not disburse further MIF funds, limiting MIF's risk and financial exposure.

4.3. Retroactive Recognition of Counterpart Funds. Retroactive financing of up to US $180,000 representing costs of physical space and retrofitting of the laboratory and storage space will be recognized from November 1, 2015.

| | MIF | Counterpart | Total |
|---|---|---|---|
| **Project Components** | $ | $ | $ |
| Component 1 Creating a Resilient Partnership Ecosystem | 254,000 | 45,500 | 299,500 |
| Component 2 Development of the Ecological Restoration Business Model | 250,800 | 644,600 | 895,400 |
| Component 3 Research, Monitoring and Evaluation | 62,000 | 28,300 | 90,300 |
| Component 4 Knowledge Management and Communications Strategy | 27,750 | 4,000 | 31,750 |
| **Execution and Supervision Components** | | | |

| | | | |
|---|---|---|---|
| Executing Agency/ Administrative Costs | 169,000 | 0 | 169,000 |
| Mid-Term Evaluation | 10,000 | | 10,000 |
| Final Evaluation | 20,000 | | 20,000 |
| Ex Post Evaluation | 5,000 | | 5,000 |
| Ex post reviews (Fiduciary support & assurance) | 10,000 | | 10,000 |
| Contingencies | 10,000 | | 10,000 |
| **% of Financing** | **53%** | **47 %** | **100%** |
| **Grand Total** | **818,550** | **722,400** | **1,538,950** |

## 5. EXECUTING AGENCY

5.1. Bellairs Research Institute (Bellairs), is a McGill University facility located in Barbados which offers academic teaching and research opportunities in tropical marine and terrestrial environments and , will be the Executing Agency for this project. Bellairs was founded in 1954 and remains Canada's only teaching and research facility in the tropics. Bellairs Institute forms part of the McGill University Faculty of Science but is also registered as a local organization in Barbados.

5.2. Bellairs is incorporated under the Barbados Companies Act (Cap 308), as a non-profit company. The governance structure includes a 15 member, non-executive Board of Directors including a Chairman and an Academic and Managing Director. The Chairman and members of the Board each serve for a period of three (3) years while the Academic and Managing Director is appointed by the Provost of McGill. The term of the current Academic and Managing Director continues until May, 2018. The Board of Directors governs the policies of the organization, while implementation of day-to day operations and research are managed by the Academic and Managing Director and a complement of three (3) technical, accounting and administrative part-time support staff.

5.3. Bellairs' goal is to contribute - as a Learning Institute and through partnerships with other entities – to building the science/practice interface with emphasis on the sustainable management of the environment. The three main objectives of Bellairs are (i) to conduct *inter-disciplinary research* through Bellairs which contributes to national policy priorities and programs; (ii) to *increase public appreciation* of the value of scientific and technical research in terms of academic endeavors and best practice; and (iii) to *increase international exchange* on ideas and research focused on the future development of Barbados, the Caribbean and the global community.

5.4. Bellairs has successfully implemented several projects funded by local and international donors including CIDA, the British High Commission and the Peter Moore's Trust and has demonstrated technical capacity in community engagement, applied research and interventions in environmental sustainability as well as fiduciary systems and procedures that support implementation, management and discrete reporting on donor financed development initiatives.

5.5. The proposed project is directly aligned with Bellairs' goal and objectives in sustainable management of the environment and the engagement of community, private and public stakeholders in the research and testing of initiatives to improve the quality of Barbados marine ecology and assets.

5.6. The Institute hosts local and international students and scientists for field courses, workshops and research projects involving both marine and terrestrial environments. Research at Bellairs has broadened to a wide spectrum of disciplines in the natural and social sciences, such as environmentally-sound business, international development studies, food security, bio-resource engineering, climatology, ecology, water management and sustainability.

5.7. Bellairs maintains a close association with local academic, government, private, and non-government organizations in all of its operations. Bellairs directly implements and participates in development projects with local communities and engages in national awareness and public relations campaigns on issues of relevance to the marine and terrestrial environment.

5.8. Bellairs has maintained a long-standing strong reputation as a key actor in Barbados on matters relating to the protection and preservation of the marine environment. The work of Bellairs on coral communities began with Emeritus Professor John B. Lewis who was the first Director of the Institute. Professor Lewis published over thirty scientific papers on the marine ecology of Barbados, beginning with seminal works on coral reefs in the 1950s and 60s. This work was continued by subsequent Directors and students, most notably Professor Wayne Hunte who is currently the Pro Vice Chancellor, Research, at the University of the West Indies. The current Board of Directors of Bellairs is also distinguished in the area of marine ecology by Dr. Leonard Nurse who is a graduate of McGill in Geography, and a Nobel Laureate in the field of Climate Change. Dr. Nurse is a previous Director of the Coastal Zone Management Unit of the Government of Barbados.

5.9. Through the skill-sets of all Board Members and multi-disciplinary academic mentoring model, Bellairs currently enjoys a strong relationship with a wide range of academic, public, private and civil society actors. This is continuously strengthened by the Barbados Field Studies Semester programs for McGill students who undertake internships in collaboration with mentors in Barbados. The research, monitoring, and evaluation components of this project would be the subject of such internships.

**Strategic Partners**

5.10. The project emphasizes the need for engagement with strategic partners –which will be formalized and sustained under Component 1: Creating a Resilient Partnership Ecosystem. To enhance on-going work in the area of coral restoration in Barbados, and build on expertise across the region, the EA will engage strategically with the following key partners:

5.11. **The Ministry of the Environment's Coastal Zone Management Unit (CZMU)** (see section V. Knowledge for details) who have begun the implementation of the Pilot Coral Reef Nursery Program, under the Coastal Risk Assessment and Management Program

financed by an IDB (BA-L1014). The EA will work very closely with the CZMU ensuring a strong partnership and collaboration on relevant activities.

5.12. **CARIBSAVE** a Regional not-for-profit organization headquartered in Barbados. CARIBSAVE is the Caribbean chapter of the INTASAVE Group, a global not-for-profit organization. CARIBSAVE works across four key areas including: (i) Climate Change Science, Policy and Practice; (ii) Low Carbon Development and Renewable Energy; (iii) Society and Sustainable Livelihoods and (iv) Biodiversity, Ecosystems and Marine Conservation. This project will build on the CARIBSAVE's extensive relevant work and expertise.

5.13. **Hotels:** the EA will collaborate closely with large hotels located on the adjacent coastline to the key sites for this project, including, (but not limited to): Colony Club, Crystal Cove, Hilton, Tamarind Hotel, The House, and Turtle Beach Hotel. The EA will engage with hotels in activities proposed under Component 2: Development of the Business Model. This component will, inter alia, design a program aimed at mobilization Hotels' participation through corporate social responsibility/sponsorship initiatives – to support sustainability of the intervention.

5.14. Other key partners, who will transfer scientific knowledge into the project, and be targets for project knowledge transfer on the business model at the end of the project include:

5.15. **Fragments of Hope**[29] (Belize) is a non-profit group whose mission is to (i) re-seed devastated reefs with genetically robust, diverse and resilient corals that will mature to spawning age/size, and (ii) to begin to understand the biology and mechanisms of coral bleaching (i.e. the role of the coral host versus its symbiotic algae, the zooxanthellae when it comes to resisting or recovering from bleaching events).

5.16. **Discovery Bay Marine Laboratory** (Jamaica) is a facility of the University of the West Indies dedicated to supporting research and the teaching of biology, chemistry, ecology, geology, hydrology and geography. The facility also seeks to apply the knowledge gleaned to the management of the natural resources in Jamaica's coastal zone and could potentially replicate and scale the proposed MIF intervention in Jamaica.

5.17. **The Caribbean Community (CARICOM) Climate Change Centre (CCCCC)** is the region's Centre of Excellence on climate change. Officially opened in August 2005, CCCCC is responsible for coordinating the region's response to climate change. It is repository

[29] IDB's Climate Change and Sustainability Division's (INE/CCS) RG-T2381 Coral Reef Restoration Project (Belize & Jamaica) has contracted both Fragments of Hope (Belize) and Discovery Bay Marine Laboratory (Jamaica) as executing partners. The objective of this ongoing project is to address knowledge gaps of coral species capable of surviving climate variation and change; and on this basis to support applied adaptation measures that will improve the resilience of these systems. In addition to the research objectives, this project will also directly support the implementation and expansion of coral propagation and restoration practices both Placencia (Belize) and the north coast of Jamaica. The project will also help to increase private sector involvement in the restoration efforts and actively disseminate information on best practices and lessons learned to research institutions, laboratories and public sector entities (with the mandate for coral reef protection or coastal zone management) across the Caribbean region. The project is scheduled to end in the first quarter of 2016 and lessons learned and experiences will inform the implementation of the proposed MIF intervention on coral gardening in Barbados.

and clearing house for regional climate change information and data and provides climate change-related policy advice and guidelines to the Caribbean Community (CARICOM) Member States through the CARICOM Secretariat. In this role, the Centre is recognized by the United Nations Framework Convention on Climate Change (UNFCCC) and other international agencies as the focal point for climate change issues in the Caribbean. CCCCC will be a key agent for scaling the results regionally.

5.18. Both CORALL – Barbados and the EA for this project will establish close linkages with these agencies to ensure that lessons learned and best practice are distilled and applied to the Barbados program and context.

## 6. PROJECT RISKS

6.1. In terms of achieving the project's developmental objectives, the key risk is that the coral cultivation and transplantation activities prove inadequate to arrest and support restoration of the coral reefs due to worsening effects of climate change, natural disasters, and failure to effect change in behaviors of organizations, communities and individuals that negatively impact coral health through the introduction of harmful chemicals and pollutants into the coral reef marine ecosystem.

6.2. This risk is rated as medium and mitigation strategies include: (i) the technical approach to coral restoration is based on extensive scientific studies, will focus on cultivation of resilient species, and has demonstrated results in other jurisdictions (ii) through CORALL-Barbados, its Board, and network with regional and international research institutions, Bellairs Institute will consult scientists with extensive expertise to advise and support the coral restoration process. The partnership and investment of CZMU is representative of the public sector's commitment to the success of the initiative and will support actions to mitigate technical issues, as well as the implementation of the important public education that must accompany this project. Finally, the project includes resources for public and visitor education and awareness, and will build on lessons learned in this area in the Dominican Republic.

6.3. The key financial and sustainability risk identified in the project analysis is that CORALL-Barbados could be unable to mobilize resources to ensure that laboratory, transplantation, and coral gardening activities are funded. This risk is rated as medium and is mitigated through the following: (i) financial commitment of CZMU to outfitting the laboratory and coverage of corresponding operating costs including inputs, human resources and overheads for a period of one year (ii) the development and implementation of a funding strategy for CORALL- Barbados to mobilize private investment, and (iii,) the intervention model includes diverse revenue streams that will collectively contribute to financial sustainability including the hotel stewardship program, tourism products and fees for research and teaching associated with this pioneering technical and social innovation to address coral restoration

6.4. In terms of executing agency risk, The Bellairs Institute has strong credibility as a center for teaching and research in marine and terrestrial environmental studies. Bellairs has strong technical capacity, and can mobilize research students to engage in laboratory operations as well as monitoring and evaluation at a relatively low cost. However, Bellairs currently lacks a sufficiently broad human resource base to implement a multi-

faceted complex intervention. To mitigate this risk, the project design includes resourcing of a technical coordinator supported by research and administrative personnel. The technical coordinator, as well as the business model consultant envisioned in the budget, will be expected to have a strong business background in order to strengthen Bellairs' capacity in this area.

## 7. Environmental and Social Effects

7.1. The project is expected to have positive environmental effects, increasing biodiversity, reversing reef death, and providing important ecosystem-based adaptation services. This operation was screened and classified as required by the IDB's safeguard policy (OP-703). Given the limited impacts and risks, the proposed category for the project is C.

## 8. Compliance with Milestones and Special Fiduciary Arrangements

8.1. **Disbursement by Results and Fiduciary Arrangements.** The Executing Agency will adhere to the standard MIF disbursement by results, procurement and financial management arrangements specified in Annex VII.

## 9. Information Disclosure and Intellectual Property

9.1 **Information Disclosure.** This information in this project classified as public and will be made available through the Bank's systems.

| SYSTEMIC IMPACTS | | | | | | | | | RISKS |
|---|---|---|---|---|---|---|---|---|---|
| | ***Indicator 1*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | |
| The project should 1) develop new partnerships between public and private actors; (2) change the way that these actors collaborate for improved coral health | Number of key public, private actors or institutions changing or applying new practices based on MIF-sponsored projects (450300) | 0 | 0 | 0 | 0 | 0 | 0 | 25 | |
| | ***Formula/Definition*** | | | | | | | | |
| | Sum of public/private collaborating, as evidenced by the strengthening of a collaboration group, regular meetings, examples of cross-sector input and collaboration | ***Source: Final evaluation, list of CORALL members and strategic partners*** | | | | | | | |

| FINAL OUTCOMES (IMPACTS) | | | | | | | | | RISKS |
|---|---|---|---|---|---|---|---|---|---|
| Leverage natural capital to sutain employment from associated tourism businesses.<br><br>MSEs will be created to implement the coral gardening program, or existing MSEs will adopt new practices, offer new products. Expected macro impacts:<br><br>(i) Stabilization/possible increase income of MSEs (dive operators, sea-based tour operators, fisher folk) as a result of the enhanced natural capital and improved diving/sea-based tour experiences; securing return guests; involving tourists in coral gardening activities which will increase income earning opportunities.<br><br>(ii) Contribution to reduced beach erosion, and therefore increased beach quality, allowing hotels to maintain occupancy, staff income, and employment levels while also contributing to Barbados' adaptive capacity to climate change.<br><br>(iii) Reinstatement of biodiversity and fish stocks closer to the shore. With this intervention, fisher-folk will be able to fish closer to coastline and their costs will stabilize. Fisher-folk income levels will be maintained through a combination of increased yield, lower/stabilized operational costs and new income from coral gardening | ***Indicator 1*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 60 (Cumulative)* | **Risk:** Coral Gardening is insufficient to reverse/retard the degradation of coral reefs due to external factors, beyond the reach of the intervention (such as accelerated rise in sea temperatures due to climate change). **Mitigation:** (i) the intervention will bring together the leading coral reef restoration practitioners and experts within and outside the region. (ii) the laboratory will aim to propagate and transplant the most resistant genotypes of corals into the marine environment. (iii) the Government of Barbados and IDB are investing heavily in coastal risk assessment and management that strongly complement the objectives of this operation (iv) the project will build on lessons learned and knowledge generated under relevant ongoing operations - including DR-M1035; RG-T2381; 2463-OC-BA. **Risk Rating:** Medium |
| | Number of firms (MSEs) in operation 3 years after program participation (330200) | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| | ***Formula/Definition*** | | | | | | | | |
| | Sum of firms involved in the project that are profitable at the time of observations. NOTE: Disaggregate by type of MSE (fisherman, dive operator, boat operator, etc.) | ***Source: Ex-post review*** | | | | | | | |
| | ***Indicator 2*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | |
| | Number of net jobs created or maintained by targeted firms (established by the project's intervention) 330301 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | |
| | ***Formula/Definition*** | | | | | | | | |
| | Sum of all full-time-equivalents in MSEs. NOTE: Disaggregate by type of MSE (fisherman, dive operator, boat operator, etc.) | ***Source: Report from participant MSEs/Surveys*** | | | | | | | |
| | ***Indicator 3*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | |
| | % of hotels operating in project area do not close due to beach erosion | 0 | 0 | 0 | 0 | 0 | 0 | 100% | |
| | ***Formula/Definition*** | | | | | | | | |
| | Total number of hotels/hotels that do not close due beach erosion. | ***Source: Survey of beach-front hotels in project areas*** | | | | | | | |

| INTERMEDIATE OUTCOMES (RESULTS) | | | | | | | | | RISKS |
|---|---|---|---|---|---|---|---|---|---|
| Establish a sustainable multi-stakeholder model to achieve long-term restoration of coral reefs, an essential public good for the whole Barbados.<br><br>It is expected that this project will result in (i) changes in attitudes and negative practices that impact negatively on reef health; (ii) new livelihood opportunities centered on the protection of coral reefs; and (iii) reef recovery and healthier reefs | ***Indicator 1*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | **Risk:** Key stakeholders/actors have not implemented behavioral changes or adopted new practices required to protect coral reefs. **Mitigation:** (i) the project design assigns resources for continuous awareness building, engagement, training and outreach to effect desirable changes. (ii) Bellairs as proposed EA has a track record and reputation as a trusted partner with influence within the targeted stakeholder community, that is already working to effect change in harmful practices. **Risk Rating:** Medium-High |
| | Number of firms (hotels, MSEs operating in the marine-based recreational services sector, landscapers, and fishing industry) that have adopted new coral restoration/gardening practices or technologies to protect coral reefs (230100) | 0 | 0 | 0 | 10 | 50 | 150 | 250 | |
| | ***Formula/Definition*** | | | | | | | | |
| | Sum of MSEs trained and actively implementing coral restoration activities designed by the project. | ***Source: Training workshop agendas, participation lists. Site visits by the EA.*** | | | | | | | |
| | ***Indicator 2*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | |
| | Number of people (fishers, divers, tourists/visitors, sunscreen vendors, hotel employees, residents) who have adopted new practices or technologies to protect coral reefs (210400) | 0 | 0 | 100 | 500 | 1250 | 2000 | 2500 | |
| | ***Formula/Definition*** | | | | | | | | |
| | The sum of the number of people that have verifiably changed business practices or adopted new technologies | ***Source: Training workshop agendas, participation lists. Site visits by the EA.*** | | | | | | | |
| | ***Indicator 3*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | |
| | Units of coral transplanted into marine environment | *0* | *0* | *0* | *0* | *20,000* | *40,000* | *60,000* | |
| | ***Formula/Definition*** | | | | | | | | |
| | Individual units of coral transplanted to marine environment | ***Source: Laboratory Report, transplantation records, site visits by EA.*** | | | | | | | |

| COMPONENT 1 | | | | | | | | | RISKS |
|---|---|---|---|---|---|---|---|---|---|
| | ***Indicator 1*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | **Risk**: CORALL is unable to generate sufficient financing for sustainability **Mitigation:** CORALL will pursue diversified revenue generation opportunities based on a specific fund raising strategy to be developed under the project. These will include e.g.: income from tourism products, contribution from hotels to offset coral cultivation and transplantation costs; attraction of research grants, corporate and international development partner sponsorships. **Risk Level:** Medium |
| | Market Study to value economic impact of coral restoration completed | 0 | 1 | | | | | | |
| | ***Formula/Definition*** | | | | | | | | |
| | Market Study | ***Source: Market Study accepted by CORALL*** | | | | | | | |
| | ***Indicator 2*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | |
| **Component 1: Creating a Resilient Partnership Ecosystem:** The objective of this component is to foster strong sustainable | CORALL Business Plan completed | 0 | 0 | 1 | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| component is to foster strong sustainable dialogue and engagement between key private, public and civil society actors | ***Formula/Definition*** | | | | | | | |
| | Business Plan endorsed by CORALL Board | ***Source: Business Plan and minutes of Board Meeting confirming endorsement*** | | | | | | |
| | ***Indicator 3*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* |
| | Percentage of revenue covering the operating budget of CORALL, as a combination of income and fund raising | *0* | *0* | *5* | *10* | *25* | *75* | *100* |
| | ***Formula/Definition*** | | | | | | | |
| | Percentage of revenue/costs | ***Source: CORALL's Annual Financial Statements*** | | | | | | |
| | ***Indicator 4*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* |
| | Number of people reached through community R2R outreach programs | *0* | *0* | *0* | *500* | *1,000* | *3,000* | *5,000* |
| | ***Formula/Definition*** | | | | | | | |
| | Sum of participants in workshops, events and social media campaigns | ***Source: Registration records for live events and web statistics*** | | | | | | |
| | ***Indicator 5*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* |
| | Number of Hotels providing financing to CORALL for coral restoration | *0* | *0* | *1* | | | | |
| | ***Formula/Definition*** | | | | | | | |
| | Sum of hotels contributing financing | ***Source: Report on donor contributions prepared by CORALL*** | | | | | | |
| **COMPONENT 2** | | | | | | | | **RISKS** |
| **Component 2: Development of the Ecological Restoration Business Model**<br>The objective of this component is to demonstrate the commercial viability of new sustainable business practices centered on the protection of coral reefs. This will be achieved by developing and executing an ecological restoration business model applied to integrated coral reef nursery conservation. | ***Indicator 1*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* |
| | Laboratory operating and producing live coral stock | 0 | *0* | *0* | *5,000* | *25,000* | *50,000* | *75,000* |
| | ***Formula/Definition*** | | | | | | | |
| | Number of viable units of coral ready for transplantation | ***Source: Laboratory Report*** | | | | | | |
| | ***Indicator 2*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* |
| | Number of people (local divers and tourists) certified in PADI Coral Care and Reef First Aid (110100) | 0 | 0 | 2 | 12 | 25 | 40 | 50 |
| | ***Formula/Definition*** | | | | | | | |
| | Sum of people certified | ***Source: PADI Certification Record*** | | | | | | |
| | ***Indicator 3*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* |
| | Number of people reached by CORALL Tourism Product Marketing Campaign, with corresponding brand and logo | *0* | *0* | *0* | *500* | *5,500* | *25,500* | *50,000* |
| | ***Formula/Definition*** | | | | | | | |
| | Sum of all people reached by brand marketing products | ***Source: Marketing Firm Reach Reports*** | | | | | | |
| | ***Indicator 4*** | ***Month 0*** *Baseline* | ***Month 6*** | ***Month 12*** *(Cumulative)* | ***Month 18*** *(Cumulative)* | ***Month 24*** *(Cumulative)* | ***Month 36*** *(Cumulative)* | ***Month 48*** *(Cumulative)* |
| | Number of fisher-folk, diver operators, and boat operators trained in coral gardening tourism product interpretation. | *0* | *0* | *0* | *30* | *40* | *60* | *80* |
| | ***Formula/Definition*** | | | | | | | |
| | Sum of all individuals within these groups trained. | ***Source: Curricula, training attendance sheets, agendas.*** | | | | | | |
| | ***Indicator 5*** | ***Month 0*** *Baseline* | ***Month 6*** | ***Month 12*** *(Cumulative)* | ***Month 18*** *(Cumulative)* | ***Month 24*** *(Cumulative)* | ***Month 36*** *(Cumulative)* | ***Month 48*** *(Cumulative)* |
| | Number of fisher-folk and hotel staff trained in maintenance of coral gardens (110100) | *0* | *0* | *0* | *30* | *40* | *60* | *80* |
| | ***Formula/Definition*** | | | | | | | |
| | Sum of all individuals within these groups trained. | ***Source: Curricula, training attendance sheets, agendas.*** | | | | | | |
| | ***Indicator 6*** | ***Month 0*** *Baseline* | ***Month 6*** | ***Month 12*** *(Cumulative)* | ***Month 18*** *(Cumulative)* | ***Month 24*** *(Cumulative)* | ***Month 36*** *(Cumulative)* | ***Month 48*** *(Cumulative)* |
| | Number of MSEs trained to provide coral transplantation and care services (130100) | *0* | *0* | *0* | *10* | *20* | *30* | *40* |
| | ***Formula/Definition*** | | | | | | | |
| | Sum of all MSEs trained. | ***Source: Curricula, training attendance sheets, agendas.*** | | | | | | |
| | ***Indicator 7*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* |
| | Number of Visitors participating in Coral Care and Reef First Aid Product Tours | *0* | *0* | *0* | *100* | *1,100* | *5,100* | *10,000* |
| | ***Formula/Definition*** | | | | | | | |
| | Sum of all tourists paying for any one of the tourist products developed by | ***Source: Tourism Operator Records*** | | | | | | |
| **COMPONENT 3** | | | | | | | | **RISKS** |
| **Component 3: Research, Monitoring and Evaluation**<br>Research, monitoring and evaluation are essential if knowledge is to be gained on what works best in the local context. Under this component, the Bellairs Research Institute of McGill University (the Executing Agency for | ***Indicator 1*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* |
| | Baseline and Data Collection System completed | 0 | 1 | | | | | |
| | ***Formula/Definition*** | | | | | | | |
| | Baseline and Data Collection System Report | ***Source: Report and Data Collection System Operational - as approved by CORALL*** | | | | | | |
| | ***Indicator 2*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* |
| | Academic Partnerships established and providing income for CORALL | 0 | 0 | 1 | 2 | 2 | 3 | 5 |
| | ***Formula/Definition*** | | | | | | | |

**Risk:** The laboratory is not retrofitted and operational. **Mitigation:** There is high government commitment, supported by an existing financial commitment to complete the laboratory in the first 12 mn. This is also evidenced by the considerable investment in technical research that is driving the investment decision. **Risk Rating:** low.

**Risk:** High coral mortality following transplantation. **Mitigation:** (i) Growth of resistant coral in highly controlled environment. (ii) The identification of coral nursery and restoration sites is based on extensive scientific analysis. (iii) Outreach activities are included targeted behavioral change to address harmful practices that damage corals and affect water quality. **Risk Level:** Medium

**Risk:** The tourism model is not successful in attracting sufficient income to sustain MSE livelihoods. **Mitigation:** Experts will be contracted to undertake marketing strategies and develop specialized tourism products. **Risk Rating:** Medium

**Risk:** The research agenda envisaged in the project is pioneering given that this is a frontier field for marine science and environmental conservation. As a result there are few established experts in this field. **Mitigation:** Through the involvement of CZMU and their engagement of Baird Consulting as well as the composition of CORALL and Bellairs Research Institute, McGill University, the Executing Agency has access and involvement of global experts in this project. **Risk Rating:** Low

**Risk:** Experience indicates that collecting

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| McGill University (the Executing Agency for this project) will work closely with the Centre for Resource Management and Environmental Studies (CERMES), University of the West Indies, and other academic institutions to develop research. | Sum of all academic organizations that are participating in coral restoration research programs at Bellairs | ***Source: Form of Agreement between Bellairs and Academic Institutions*** | | | | | | **Risk:** Experience indicates that collecting data on MSE business operations is challenging. **Mitigation:** The EA has access to a cadre of research students who have experience in conducting community based research with local MSEs. **Risk Rating:** Low |
| | ***Indicator 3*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | |
| | Number of periodic surveys of MSMEs on income, sales, and behaviors completed | *0* | *1* | *1* | *1* | *2* | *3* | *4* | |
| | ***Formula/Definition*** | | | | | | | | |
| | Sum of all surveys filled in by MSMEs | ***Sources: surveys and compilation reports (analysis)*** | | | | | | | |
| **COMPONENT 4** | | | | | | | | | **RISKS** |
| **Component 4: Knowledge & Dissemination:** production and sharing of knowledge gained in the course of project implementation | ***Indicator 1*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | **Risk:** There are insufficient audiences that are interested in the knowledge created and or they are difficult to reach. **Mitigation:** Bellairs as Executing Agency is an established learning institution with extensive relationships with other academic organizations. CORALL as the coordinating body for the private stakeholders in Coral Conservation in Barbados and Coastal Zone Management Unit as a key financial partner collectively represent the key interested individual and institutional audiences. **Risk Rating:** Low |
| | Number of individuals from Barbados or other islands who receive case study and knowledge transfer on project model, market, and processes (110200) | 0 | 0 | 0 | 0 | 0 | 0 | 200 | |
| | ***Formula/Definition*** | | | | | | | | |
| | The sum of individuals deliberately targeted as recipients of knowledge who acquire a product that imparts information, attend an event that imparts information (excluding trainings or courses), or are recipients of any transfer of information. | ***Source: Training Agendas, Participation Lists*** | | | | | | | |
| | ***Indicator 2*** | *Month 0 Baseline* | *Month 6* | *Month 12 (Cumulative)* | *Month 18 (Cumulative)* | *Month 24 (Cumulative)* | *Month 36 (Cumulative)* | *Month 48 (Cumulative)* | |
| | Number of institutions (government, NGOs, private sector) that receive case study and knowledge transfer on project model, market and techniques. (150100) | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| | ***Formula/Definition*** | | | | | | | | |
| | The sum of institutions deliberately targeted as recipients of knowledge who acquire a product that imparts information, attend an event that imparts information (excluding trainings or courses), or are recipients of any transfer of information. | ***Source: Email Mailing Lists*** | | | | | | | |

**DETAILED BUDGET**

**PUBLIC-PRIVATE PARTNERSHIP FOR THE PRESERVATION OF CORAL REEFS**
**BA-M1014**

| Ref. # (Refer to number in execution plan) | COMPONENTS | Project Total Amount | MIF | Local Counterpart | | |
|---|---|---|---|---|---|---|
| | | | | Cash | in kind | TOTAL |
| | **COMPONENT 1: CREATING A RESILIENT PARTNERSHIP ECOSYSTEM** | **299,500** | **254,000** | **-** | **45,500** | **45,500** |
| | **INCUBATION OF *CORALL REEF RESTORATION ALLIANCE* (CORALL) & OUTREACH** | | | | | |
| *1.1* | *Incubation of CORALL Partnership & Outreach byTechnical Coordinator (30% of contract cost)* | **72,000** | **72,000** | - | - | - |
| *1.2* | *Technical support and facilitation for development of **a collective action organization to support coral stewardship** : This will include Development of shared Vision, Mission and Strategy for CORALL; preparation of By-Laws, Governance systems; Management Framework/Legal Engagement with CZMU and Formal Registration and ongoing stakeholder engagement to align and maintain shareed objectives interests and co-ordination (Workshop, Facilitator & retainer w/days)* | **16,500** | **12,000** | | **4,500** | **4,500** |
| *1.3* | *Market Study to value the economic impact of coral restoration for MSMEs (fisheries, dive operators, marine tours), hotels (arresting coastal erosion/marine ecosystem) and national stakeholder; and distill data to communicate findings to key stakeholders* | **15,000** | **10,000** | - | **5,000** | **5,000** |
| *1.4* | *Detailed business plan for CORALL including membership requirements, dues, commissions (e.g. commercial/research) and financial sustainability beyond MIF investment* | **5,000** | **5,000** | - | - | - |
| | *Develop Fund Raising Strategy, Action Plan and targets* | **5,000** | **5,000** | - | - | - |
| *1.5* | *Quarterly Meeting of CORALL Members with Government and other partners US$250 x 16 meetings: catering* | **4,000** | **4,000** | - | - | - |
| *1.6* | *Office Equipment (computer/software; scanner/printer & Cell Phone)* | **3,500** | **3,500** | - | | - |
| *1.7* | *Office Space, Utilities & Telecommunications* | **36,000** | - | - | **36,000** | **36,000** |
| | **COMMUNITY AWARENESS & RIDGE TO REEF (R2R)** | | | | | |
| *1.8* | *Design of a strategic community outreach program targeting key stakeholders/users, on behavioural impact on coral health and the economic value of reefs to livelihoods* | **18,000** | **18,000** | - | - | - |
| *1.9* | *Conduct extended community and stakeholder communication program (events, social media, booths, workshops etc.) events over 48 months* | **35,500** | **35,500** | - | - | - |
| *1.10* | *Conduct training sessions with key stakeholders on R2R (Ridge to Reef) awareness and behavior changes to reduce negative impact on coral reef health (includes cost of facilitator. logistics, materials etc.)* | **50,000** | **50,000** | - | - | - |
| | **HOTEL CORAL REEF STEWARDSHIP PROGRAM** | | | | | |
| *1.11* | *Develop a Resource Kit for formalised, structured engagement and funding by hotels* | **10,000** | **10,000** | - | - | - |
| *1.12* | *Produce Outreach Materials for Hotels (printed materials/business decision support etc.)* | **5,000** | **5,000** | - | - | - |
| *1.13* | *Fund Raising outreach by Technical Coordinator (10% of contract cost)* | **24,000** | **24,000** | - | - | - |
| | **COMPONENT 2: DEVELOPMENT OF THE ECOLOGICAL RESTORATION BUSINESS MODEL** | **895,400** | **250,800** | **540,000** | **104,600** | **644,600** |
| | **CORAL CULTURE & TRANSPLANTATION** | | | | | |
| *2.1* | *Provision of Physical Plant for Coral Aquaculture Facility , storage & lab office* | **150,000** | - | - | **150,000** | **150,000** |
| *2.2* | *Retrofit Coral Aquaculture Facility to biolevel safety 2.0 standard* | **30,000** | - | **30,000** | - | **30,000** |
| *2.3* | *Equip Coral Aquaculture Facility (wave tanks, pumps, generator, tank equipment)* | **310,000** | - | **310,000** | - | **310,000** |
| *2.4* | *Coral Aquaculture Facility Operating Costs (electricity, water, chemicals, filters, building mainenance) up to 2017 December cost will be counterpart (US$40,000 /yr; US$30,000 per year thereafter)* | **130,000** | - | **130,000** | - | **130,000** |
| | *Technical oversight and training lab technicians and infrastructure* | **30,000** | **9,000** | **21,000** | - | **21,000** |
| *2.5* | *Laboratory Technician(s) 1 full-time (US$50,000/yr) & 1 part-time (25,000 US$/yr)* | **225,000** | **75,000** | **75,000** | **75,000** | **150,000** |
| *2.6* | *Demo lab - Visitor attraction (for tourists & awareness building) -* | **15,000** | **5,000** | - | **10,000** | **10,000** |
| *2.7* | *Transplantation equipment (mariculture structures & anchoring)* | **4,000** | - | **4,000** | - | **4,000** |
| *2.8* | *Transportation costs for transfer of coral stock to mariculture transplant site (US$300/mo x for 36 months)* | **10,800** | **7,800** | - | **3,000** | **3,000** |
| | *Travel Costs and stipend to bring trainer from DR-M1035 to Barbados to certify local PADI Coral Care & Reef First Aid trainers* | **15,000** | **10,000** | - | **5,000** | **5,000** |
| | *Local PADI Trainer to train divers in PADI certification* | **8,000** | **3,000** | - | **5,000** | **5,000** |
| | *Local PADI Trainer to train fisherfolk & hotel staff in PADI Open Water and Certification* | **3,000** | **3,000** | - | - | - |
| *2.9* | *Labour cost for transplantation of coral and maintenace of reefs (24 maintenance trips/yr for 3 year + 24 transplantation trips total)* | **9,600** | **3,000** | - | **6,600** | **6,600** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **TOURISM PRODUCT DEVELOPMENT & MARKETING** | | | | | |
| *2.13* | *Coordination of Product Development, Outreach & Promotion by Technical Coordinator (25% of contract cost)* | 60,000 | 60,000 | - | - | - |
| *2.14* | *Development of educational and experiential tour for visitors to Barbados - (including logistics, content, packages, pricing) (based on DR inputs) Development of curriculum in interpretation (divers, marine tour operators, fisherfolk) & Delivery of training in interpretation* | 18,000 | 18,000 | - | - | - |
| | *Training events for delivery and interpretation of new visitor product offering - dive operators (4) marine tour operatiors (4) and fishermen (4) - includes logistics. Materials and facilitation costs* | 12,000 | 12,000 | - | - | - |
| *2.15* | *Promotion and Branding Consultancy support including (i) Develompent of Promotional Campaign and Branding Strategy (incl. logo, web/digital, mkt & linkages to cruise operators, niche markets) (ii) Development of Promotional Materials (e.g. including printed and digital materials* | 35,000 | 35,000 | - | - | - |
| *2.20* | *Develop coral restoration dive or snorkel niche tourism product* | 5,000 | 5,000 | - | - | - |
| | **AQUARIUM PRODUCT DEVELOPMENT & MARKETING** | | | | | |
| | *Market study and comercialization of aquarium coral product* | 5,000 | 5,000 | - | - | - |
| | **COMPONENT 3: RESEARCH, ACADEMIC PARTNERSHIPS, MONITORING AND EVALUATION** | 90,300 | 62,000 | - | 28,300 | 28,300 |
| | **OUTREACH - ACADEMIC & RESEARCH PARTNERSHIPS** | | | | | |
| | *Logistics/Travel costs for Academic & International Funding Partner Outreach basd on fund raising plan (approx 5 trips over 48 months)* | 10,000 | 7,500 | - | 2,500 | 2,500 |
| | **SCIENTIFIC/TECHNICAL, ECONOMIC & SOCIAL RESEARCH** | | | | | |
| | *Execution of periodic surveys of MSEs (4 surveys over 48 months)* | 18,000 | 6,000 | - | 12,000 | 12,000 |
| | *Monitorinig and surveillance of laboratory and coral restoration sites (48 observations over 48 months)* | 4,800 | - | - | 4,800 | 4,800 |
| | *Execution of R2R and related scientific surveys (e.g. use of TBT paint, water quality etc.) 4 surveys over 48 months* | 4,000 | | - | 4,000 | 4,000 |
| | **MONITORING & EVALUATION** | | | | | |
| | *Monitoring & Evaluation Officer (part-time) over 36 months* | 18,000 | 18,000 | - | - | - |
| | *Baseline Study & establishment of data collection system* | 20,000 | 15,000 | - | 5,000 | 5,000 |
| | *GIS Software to support data collection and analysis for M&E* | 3,000 | 3,000 | - | - | - |
| | *Underwater camera -to support collection of data* | 500 | 500 | - | - | - |
| | *Support for Monitoring & Evaluation by Technical Coordinator (5% of contract cost)* | 12,000 | 12,000 | - | - | - |
| | **COMPONENT 4: KNOWLEDGE AND DISSEMINATION** | 31,750 | 27,750 | 2,000 | 2,000 | 4,000 |
| | *Support for knowledge dissemination provided by Technical Coordinator (5% of contract cost)* | 12,000 | 12,000 | - | - | - |
| | **WORKSHOPS** | | | | | |
| *4.2* | *Events to share results with stakeholders & partners (3 events over 48 mnths)* | 1,500 | 1,500 | - | - | - |
| | *Conduct Sustainability Workshop to transfer operational and financial management of CORALL to it's Board (12 mn before closing)* | 1,500 | 1,500 | - | - | - |
| *4.5* | *Closing Workshop to transfer knowledge to Government and local Stakeholders for replication* | 1,500 | 1,500 | - | - | - |
| | **KNOWLEDGE EXCHANGE** | | | | | |
| | *Travel costs for 1 Visit for 4 persons to Dominican Republic (DR-M1035 Project) to learn from best practices, (Project Coordinator, Bellairs Manager, one representative from CZMU, participating Hotel and Diver Operator)* | 6,000 | 6,000 | - | - | - |
| | *Travel Costs for 2 persons from DR-M1035 project to Barbados to advise CORALL on structure and focus of PADI training programs, leveraging lessons learned in the DR project context.* | 4,000 | 2,000 | 2,000 | - | 2,000 |
| | **DEVELOPMENT & DISSEMINATION OF KNOWLEDGE PRODUCTS** | | | | | - |
| | *Development and production of Case Study & Infographic (lump sum contract)* | 2,750 | 750 | - | 2,000 | 2,000 |
| | *Dissemination of Knowledge Products at existing and relevant knowledge forums in Barbados and the region: 2 trips x 1 person (travel & Per diem & hotel costs)* | 2,500 | 2,500 | - | - | - |
| | **Execution and Supervision** | 169,000 | 169,000 | - | - | - |
| | *Technical Coordinator (25%)* | 60,000 | 60,000 | - | - | - |
| | *Project Assistant (full-time 42 mn)* | 84,000 | 84,000 | - | - | - |
| | *Accountant ( 4 days month x 48mn)* | 25,000 | 25,000 | - | - | - |
| | **Monitoring, Evaluation and Ex-post Review of Accounts** | 45,000 | 45,000 | - | - | - |
| | *Fiduciary Support & Assurance* | 10,000 | 10,000 | - | - | - |
| | *Mid Term Evaluation* | 10,000 | 10,000 | - | - | - |
| | *Final Evaluation* | 20,000 | 20,000 | - | - | - |
| | *Ex - Post Evaluation* | 5,000 | 5,000 | - | - | - |
| | **Contingencies** | 10,000 | 10,000 | - | - | - |
| | *Contingencies* | 10,000 | 10,000 | - | - | - |
| | **TOTAL** | 1,540,950 | 818,550 | 542,000 | 180,400 | 722,400 |
| | **% of Financing** | 100% | 53.12% | 35.17% | 11.71% | 46.88% |

Multilateral Investment Fund
Member of the IDB Group

# Quality for Effectiveness in Development - (QED)

Donors Memorandum
November 13, 2015

## SECTION 1: PROJECT SUMMARY

| | |
|---|---|
| **PROJECT NAME:** Public-Private Partnership for the Preservation of Coral Reefs | Project Number: BA-M1014 |
| | |
| **DESIGN TEAM LEADER:** Greg Watson | |

## SECTION 2: QED CONTENT

| 1. Project Characteristics and alignment | **6.8** |
|---|---|
| Specific benefits for women **(5 Points)** | |
| 1.1.1. The project has specific benefits for women | 0 |
| Specific benefits for excluded populations and at-risk youth **(2 Points)** | |
| 1.1.2. The project has specific benefits for excluded populations | 0 |
| 1.1.3. The project has specific benefits for this excluded populations | 0 |
| The project targets firms with significant growth and job potential **(3 Points)** | |
| 1.1.4. The project targets firms with significant growth and job potential | 0 |
| Specific benefits for the environment**(2 Points)** | |
| 1.1.5. The project has specific benefits for the enviroment (GHG reduction, water savings, conservation, biodiversity) | 2 |
| Systemic Impact **(3 Points)** | |
| 1.1.6. The project contributes to systemic impact, by (i) creating or expanding markets, (ii) scaling or replicating development models, or (iii) improving policies, regulations, or legal frameworks, or (iv) promoting adoption of practices by key public or private actors or institutions. | 2 |
| Innovation **(3 Points)** | |
| 1.1.7. The project seeks to introduce new products or services into markets or fosters new processes within businesses or organizations | 1 |
| Experimentation **(2 Points)** | |
| 1.1.8. The project will test new solution(s) to a specific problem under controlled conditions, using rigorous methodologies. | 1 |
| Target 1: Private Sector Development **(50 Points)** | |
| 1.2.1. Foster entrepreneurship including innovative early stage firms | 1 |
| 1.2.2. Improve the productivity of micro and small firms and small farms | 2 |
| 1.2.3. Strengthen business environment including public/private collaboration | 2 |
| 1.2.4. Inclusive Green Growth | 2 |
| 1.2.5. Expand inclusive access to markets | 0 |
| 1.2.6. Expand access to financial services and develop financial markets and institutions | 0 |
| 1.2.7. Expand private sector provision of basic services | 0 |
| Target 2: Poverty reduction **(20 Points)** | |
| 1.2.8. The project will be implemented in a region with a high incidence of poverty or target beneficiaries from the poor strata | 0 |
| 1.3.1. Collaboration within the Bank Group. The document mentions how the project aligns with other Bank interventions, in both the public and private sectors, as appropriate. | 2 |
| 1.3.2. Collaboration with outside actors for scalability and policy impact. The project has potential for scalability after execution. Project design includes activities aimed at fostering partnerships with the intention to scale, raising additional funds for replication and/or | 2 |

| | |
|---|---|
| other similar activities. | |
| 2. Project Diagnosis | **8.9** |
| Diagnostic of the problem **(60 Points)** | |
| 2.1. The problem is identified | 2 |
| 2.2. The causes of the problem are identified | 2 |
| 2.3. The effects of the problem are identified | 2 |
| 2.4. Gender inequality issues are identified | 0 |
| 2.5. Beneficiary identification | 2 |
| Proposed Solution **(40 Points)** | |
| 2.6. Logic of the intervention | 2 |
| 2.7. Description of the model | 2 |
| 2.8. Description of the components | 2 |
| 2.9. Gender issues addressed by the components | 1 |
| 2.10. Lessons learned | 0 |
| 2.11. Evidence | 1 |
| 3. Additionality | **8.8** |
| 3.1. Non-financial contribution | 2 |
| 3.2. Financial contribution | 2 |
| 3.3. Additional funding | 1 |
| 3.4. Executing agency strengthening | 2 |
| 4. Monitoring & Evaluation, Knowledge Sharing and Strategic Communication | **9.3** |
| Monitoring & Evaluation **(50 Points)** | |
| 4.1. Monitoring mechanisms | 2 |
| 4.2. Evaluation questions | 1 |
| 4.3. Evaluation methodology | 2 |
| 4.4. Evaluation activities | 2 |
| Knowledge Sharing & Strategic Communication **(50 Points)** | |
| 4.5. Knowledge gap | 2 |
| 4.6. Knowledge sharing products are defined and appropriate to the audiences | 2 |
| 4.7. Communication strategy | 2 |
| 5. Logical Framework Quality | **9.5** |
| 5.1. Project impact and results | 2 |
| 5.2. Vertical logic | 2 |
| 5.3. Horizontal logic | 2 |
| 5.4. Baseline, intermediate and target values | 2 |
| 5.5. SMART Indicators | 2 |
| 5.6. Indicators are sex-disaggregated | 1 |

| | |
|---|---|
| 5.7. Source, or means for collecting data | 2 |
| 5.8. Risks/assumptions column of the logical framework | 2 |
| 6. Risks | **8.8** |
| 6.1. Experience and the skills of the executing agency | 2 |
| 6.2. Risks identification | 2 |
| 6.3. Mitigation measures | 1 |
| 6.4. IDB environmental/social policies | 2 |

| | |
|---|---|
| **TOTAL** | **8.6** |

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK
MULTILATERAL INVESTMENT FUND

PROPOSED RESOLUTION MIF/DE-__/16

Barbados. Nonreimbursable Technical Cooperation ATN/ME-____-BA
Public-Private Partnership to Preserve Coral Reefs

The Donors Committee of the Multilateral Investment Fund

RESOLVES:

1. That the President of the Inter-American Development Bank or such representative as he shall designate is authorized, in the name and on behalf of the Bank, as Administrator of the Multilateral Investment Fund, to enter into such agreements as may be necessary with Bellairs Research Institute, and to take such additional measures as may be pertinent for the execution of the project proposal contained in document MIF/AT-___ with respect to technical cooperation for a public-private partnership to preserve coral reefs.

2. That up to the amount of US$818,550 or its equivalent in other convertible currencies, shall be authorized for the purpose of this resolution, chargeable to the resources of the Multilateral Investment Fund.

3. That the above-mentioned sum is to be provided on a nonreimbursable basis.

(Adopted on __ _____ 2016)

LEG/NSG/IDBDOCS:39948672
BA-M1014