FEASIBILITY STUDIES FOR A CLIMATE RISK-RESILIENT COASTAL ZONE MANAGEMENT PROGRAM IN THE BAHAMAS

BH-T1038	**US$150,000**	**BIO**
BH-T1029	**US$500,000**	**FDP**

CERTIFICATION

I hereby certify that these operations were approved for financing under the following funds: (i) Special Program for Biodiversity and Ecosystem Services (BIO) in the amount of US$150,000; and (ii) Disaster Prevention Fund (FDP) in the amount of US$500,000 through a communication dated November 5, 2013 subscribed by Gerhard Lair (ORP/GCM) and Jane de Souza Silva, (ORP/GCM), respectively.

Also, I certify that resources from the BIO are available up to US$150,000 and US$500,000 from the FDP in order to finance the activities described and budgeted in this document. This certification reserves resources for the referenced project for a period of four (4) calendar months counted from the date of eligibility. If the project is not approved by the IDB within that period, the reserve of resources will be cancelled, except in the case a new certification is granted. The commitment and disbursement of these resources shall be made only by the Bank in US dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except in the case of local consultants working in their own borrowing member country who shall have their remuneration defined and paid in the currency of such country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this operation. Amounts greater than the certified amount may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, for which the Fund is not at risk.

Feasibility studies for a climate risk-resilient coastal zone management investment program in the Bahamas

I. Basic Information for TC

▪ Country/Region:	The Bahamas
▪ TC Name:	Feasibility studies for a climate risk-resilient coastal zone management program in the Bahamas
▪ TC Number:	BH-T1029 and BH-T1038
▪ Associated Loan/Guarantee Name:	The Government of The Bahamas has expressed interest in an investment program in coastal risk management that could be presented for eventual IDB financing. However, the 2014 programming exercise is pending and no number has been assigned.
▪ Associated Loan/Guarantee Number:	N/A
▪ Team Leader/Members:	Team Leader: Cassandra Rogers (RND/CBA); Alternate Team Leader: Michele Lemay (INE/RND); Members: Maria Claudia Perazza, Joseph Milewski, Enrique Ibarra and Lisa Restrepo (INE/RND); Gerard Alleng (INE/CCS); Roy Parahoo (FMP/CBA); Mario Castenada (FMP/CES); Javier Bedoya (LEG/SGO) and Syreta Roberts (CCB/CBH).
▪ Date of TC Abstract authorization:	November 5, 2013
▪ Beneficiary:	Government of The Bahamas (GOBH)
▪ Executing Agencies and contact name	Executing Agencies: Ministry of the Environment and Housing (MEH) for Component 1; and for Component 2, the Inter-American Development Bank
▪ IDB Funding Requested:	US$650,000 (US$500,000 Disaster Prevention Fund (BH-T1029); US$150,000 Biodiversity and Ecosystems Services Fund (BH-T1038))
▪ Local counterpart funding, if any:	US$125,000
▪ Disbursement period	20 months
▪ Execution period	18 months
▪ Required start date:	January 2014
▪ Types of consultants (firm or individual consultants):	Firm and individual consultants
▪ Prepared by Unit:	INE/RND
▪ Unit of Disbursement Responsibility:	CCB/CBH
▪ TC Included in Country Strategy (y/n): ▪ TC included in CPD (y/n):	N Y
▪ GCI-9 Sector Priority:	(i) Supporting development in small and vulnerable countries and (ii) climate change and environmental sustainability

II. Objectives and Justification of the TC

2.1 The general objective of the TC is to strengthen capacity for the phased establishment of a climate risk-resilient Integrated Coastal Zone Management (ICZM) Program in The Bahamas. The specific objectives of the technical cooperation are to: (i) support existing initiatives that could contribute to a national ICZM policy framework; (ii) build the foundational capacity for developing and implementing an investment program in ICZM; and (iii) provide designs and feasibility analyses for the investment program for consideration for

financing. The investment program to be designed through the technical cooperation would be aimed at optimizing the contribution of the coastal zone to national sustainable economic development and building resilience to coastal hazards including the impacts of climate change through ICZM. The implementation of a risk-based ICZM approach will also assist the country in meeting the development target of 20% conservation of the nearshore environment by 2020.

2.2 The Bahamas consists of more than 700 low lying islands and cays extending over an area of 5000 sq. km. and encompassing a variety of coastal and marine ecosystems, mangroves, extensive beaches and coral reefs. The coastal zone is a critical asset for the national economy. It harbors much of the islands' critical infrastructure in the tourism[1] and fisheries sectors, including industrial complexes, ports, fish processing plants and tourism resorts and associated services; as well as 80% of the island's residential population. Coastal ecosystems themselves provide goods and services that are also vital to these sectors, including for example the provision of nursery habitat for fish stocks, buffering public infrastructure and coastal populations from coastal erosion and flooding, and supporting tourism and recreation.

2.3 Natural disasters pose a recurring and substantial threat to the well-being of the country's coastal and marine assets and tourism plant, and thus to the country's economy. Bahamas on average is affected by a hurricane once every three years and three of the Bahamas islands (Andros, Abaco and Grand Bahama) are ranked among the top 10 in terms of effects from tropical systems of all cities, islands and countries in the North Atlantic Basin. Coastal erosion present additional threats; and the densely populated coastal zone is also prone to flooding. There is also increasing evidence that increased intensity and frequency of storms associated with climate change and sea level rise is affecting the health of the country's coastal and marine biodiversity including reef degradation and coral bleaching due to increased temperatures and physical damage and loss of reefs. As most coastal development, tourism, industry, and residential sites occur at elevations of one to four meters above sea level, and more than 90% of all fresh water resources lie within 1.5 meters of the surface, significant property damage, potential loss of life, and long-term damage to coastal biodiversity is predicted (ICF, Bahamas National Report). Other impacts include greater inundation of low-lying coastal lands, loss of beaches, inland migration of coastal wetlands (notably mangroves) and increased groundwater contamination due to saltwater intrusion.

2.4 The GOBH has recognized that future growth and diversification of its tourism-dependent economy depend on the health and prosperity of the coastal environment and on enhancing the resilience of economic activities to coastal risks associated with natural and anthropogenic hazards such as erosion, flooding and climate change, as well as threats to biodiversity such as habitat degradation and land based sources of pollution. Given the strategic importance of the country's coastal zone to economic development, the GOBH has made several advances towards climate risk-resilient ICZM which make this TC and the investment program it proposes to develop a timely initiative in its shift towards a sustainable economy.

[1] Coastal tourism accounted for 60% of Gross Domestic Product (GDP) and 50% of employment in 2008. 80% of the hotel plant is located on the coast.

2.5 Advances include, for example, planning legislation approved in 2010 (Planning and Subdivisions Act of 2010), which includes provision for land use planning, environmental management and the protection of natural resources for New Providence and the Family Islands, the provision of infrastructure and services to the built environment that address the issues of the coastal zone vulnerability and sensitivity to habitat protection, and the establishment of a Town Planning Committee to support the implementation of the Act; and the Bahamas National Geographic Information Systems Centre as the national focal point for technical management, training and clearing house of geospatial data. In addition, the National Climate Change Committee, a multisectoral group of key public and private sector agencies and non-governmental organizations, was formed as a sub-committee under the Bahamas Environment, Science and Technology (BEST) Commission, with the responsibility for coordinating the national response to climate change at the local, national, regional and international levels. The Ministry of Tourism and the National Coastal Awareness Committee are also implementing several related activities including public education and outreach awareness programs; and initial studies in storm surge modeling and in coastal and marine research and data collection have been completed. These recent developments complement several on-going activities and studies in coastal and marine research and data collection and hazard mapping and vulnerability assessments conducted by the Bahamas National Trust as well as private sector stakeholders that can all contribute to a solid foundation for a permanent ICZM Program.

2.6 The proposed TC would help consolidate these on-going efforts by filling in the gaps in scientific baseline data and by designing an integrated information platform for coastal risk assessment and management. The proposed TC would also support the GOBH in conducting the analytical work and consensus-building activities in support of ICZM policy formulation while simultaneously building capacity among the network of institutions likely to be involved in implementing the policy and investment program.

2.7 In discussions held with the Bank, the GOBH and MEH have reiterated that coastal protection including the mitigation of beach and cliff instability and coastal flooding is a priority for a future investment program. The proposed TC would support the GOBH in identifying priority sites for coastal works for which baseline studies, designs and analyses of their economic, environmental and financial feasibility are required, and designing and assessing cost-effective, low maintenance coastal stabilization measures as well as associated works to control coastal flooding and improve coastal access based on the best available scientific data.

2.8 The proposed TC will contribute to the following GCI-9 lending program priority targets: (i) supporting development in small and vulnerable countries (GN-2616-2); (ii) climate change, sustainable (including renewable) energy, and environmental sustainability; and (iii) the IDB's Integrated Strategy for Climate Change Adaptation and Mitigation and Sustainable Renewable Energy (GN-2609-1) and its Action Plan (2012-2015 GN-2609-3), specifically its strategic line to strengthen institutional capacity through the economic assessment of climate change vulnerabilities to the Region and benefits of alternative adaptation measures.2 The technical cooperation is also aligned with the objectives of the

[2] http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36938123

Disaster Prevention Fund (FDP) and the Biodiversity and Ecosystem Services Program. The proposed TC is included in the 2013 Bahamas Country Programming Document.

III. Description of activities/components and budget

The proposed TC will comprise the following components and associated activities:

3.1 **Component 1: Support to Policy Framework and Institutional Sustainability for risk-resilient ICZM.** This component will assist the GOBH in establishing a fully-endorsed framework for ICZM and help build the capacity needed to deliver an ICZM investment program and will involve the following activities: (a) Policy support and analysis. Experts with demonstrated experience in ICZM and knowledge of the local context will be contracted to support the Ministry of the Environment and Housing in assessing information gaps and providing the quantitative justification and rationale for ICZM and an associated Policy Framework to be developed as part of their mandate. Specific studies will include: (i) assessment of any proposed coastal and marine development plans in New Providence and the Family Islands and potential socioeconomic conflicts and synergies; (ii) economic analysis of the contribution of the coastal zone to the national economy and the sustainable development of potential growth poles; (iii) a physical assessment and valuation of ecosystem services including coastal stabilization, flood protection, water quality control, recreational and provisioning services and identification of measures to build ecosystem resilience; (iv) preparation of an inventory of critical economic and coastal protection infrastructure (existing and proposed) to identify key vulnerabilities; an analysis and selection of geographic priorities in New Providence and the Family Islands and an action plan for nation-wide vulnerability and risk assessment including identification of gaps; and (v) an assessment of the legal and regulatory framework for environmental management in the context of sustainable coastal development; (b) Capacity building for ICZM: A network of agencies in ICZM, including will receive capacity building in a series of workshops focusing on recent trends in ICZM, including best practices and lessons learned in sustainable coastal development risk resilient ICZM in the Caribbean, the integration of disaster risk management and climate change adaptation, the mainstreaming of ecosystem services and biodiversity, economic analysis of investment options, science-based coastal engineering (including non-structural measures), and ecosystem-based coastal protection. The design of the training program will be based on a needs assessment; and (c) Public awareness and consultation. The TC will finance public awareness and consultation activities including: (i) Surveys and focus groups to assess public awareness and understanding of ICZM opportunities and issues; and (ii) public and private sector consultations for initiation of the proposed ICZM Policy Framework and action plan, tailored to the most appropriate modalities for ensuring meaningful engagement of stakeholders in the Bahamas; and (iii) multi-media campaigns aimed at increasing awareness and understanding of coastal risks and the benefits of risk-resilient ICZM.

3.2 **Component 2: Design and feasibility analysis of risk-resilient ICZM investment program**. This component will support the preparation of a risk-resilient ICZM investment program that is consistent with international best practice in ICZM in the Caribbean while simultaneously recognizing the unique characteristics of the coastal zone of The Bahamas. As such the investment loan to be designed through the technical cooperation will combine:

(i) sound science on assets, processes and risks in the coastal zone, including those associated with natural disasters and climate change; (ii) an effective governance structure involving key stakeholders; and (iii) investments that address specific relevant issues for sustainable coastal development in the Bahamas in this case coastal risks such as shoreline and cliff instability, coastal flooding, sea level rise, conflicts between coastal uses, coastal public access) with innovative approaches.

3.3 In order to deliver a viable investment package, this component will finance the services of an internationally-recognized firm with demonstrated experience in the design and feasibility analysis of coastal investment programs to work with the GOBH on two sets of activities. First, the firm will prepare the specifications of baseline scientific studies needed for coastal risk assessment and management. This will encompass: (i) validation of priority baseline information gaps (e.g., bathymetry, coastal and oceanographic processes, hazards, risks) and how to fill them cost-effectively; (ii) preparation of terms of reference for baseline studies; and (iii) preparation of terms of reference for an integrated national coastal information platform. In addition to the specifications, the firm will be responsible for estimating the costs of the studies. Second, the firm will conduct the feasibility analysis of the investment package, including: (i) identification and validation of coastal infrastructure investment priorities for New Providence and the Family Islands, to include where appropriate ecosystem-based coastal protection, non-structural and soft-engineering measures; (ii) preparation of engineering and non-structural designs for pilot investments; and (iii) feasibility analysis of investments in accordance with the requirements of the Bank for public sector financing, including socioeconomic, environmental, financial, and institutional feasibility.

III-1. Indicative Results Matrix

Project Component	**Outputs**	**Results**
General	Technical reports with expected outcome: Strengthened coastal zone management and capacity to respond to coastal vulnerability including climate change	TC General Outcome: Increased capacity for ICZM that addresses coastal vulnerability including capacity to implement investments that increase coastal resilience.
Component 1: Support to Policy Framework and Institutional Sustainability for risk-resilient ICZM	Output 1A: 5 technical studies providing quantitative justification and rationale for ICZM and Policy Framework Output 1B: Approximately 20-25 staff trained from various government entities in emerging trends in ICZM based on a needs assessment Output 1C: Surveys of existing public awareness levels Output 1D: At least 3 public consultations on ICZM Policy Framework Output 1E: At least 2 multi-media campaigns	Outcome 1: Fully-endorsed ICZM Framework tailored to the conditions of New Providence and the Family Islands and capacity to implement an investment program
Component 2: Design and feasibility analysis of risk-resilient ICZM investment program	Output 2A: Terms of reference for scientific baseline studies for coastal risk assessment and management Output 2B: Terms of reference for the design of an integrated national coastal risk information platform Output 2C: Detailed designs and costs for priority coastal protection works in New Providence and the Family Islands Output 2D: Environmental, socioeconomic, financial and institutional feasibility analysis of a public sector loan for consideration for financing	Outcome 2: Economically, socially and environmentally viable investment proposal for risk-resilient ICZM

III-2. Indicative Budget

Activity/Component	Description	IDB (FDP) (BH-T1029) $	IDB (BIO) (BH-T1038) $	Counterpart Funding $	Total Funding $
Component 1: Support to Policy Framework and Institutional Sustainability for risk-resilient ICZM					
1.1 Policy support and analysis	- 5 technical studies in support of ICZM Policy Framework	50,000	135,000	30,000	215,000
1.2 Capacity building for ICZM	- Capacity building needs assessment	5,000		1,000	6,000
	- Capacity building (workshops) in best practice ICZM	40,000		19,000	59,000
1.3 Public and private sector awareness and consultation	- Public and private sector consultation events	20,000		15,000	35,000
	- Multi-media campaigns	40,000		5,000	45,000
Component 2: Design and feasibility analysis of risk-resilient ICZM investment program					
2.1 Design of baseline studies	- Validation of priorities and preparation of terms of reference for baseline studies and integrated information platform	50,000		20,000	70,000
2.2 Design and feasibility	- Identification and validation of priorities for coastal protection works and preparation of designs	135,000		20,000	155,000
	- Feasibility analysis (socioeconomic, environmental, financial, institutional)	95,000		5,000	100,000
Project coordination	Project coordinator	55,000	15,000	10,000	80,000
Final Audit	Audit	10,000			10,000
		500,000	**150,000**	**125,000**	**775,000**

3.4 The total amount of the TC is US$775,000 of which US$500,000 will be provided by Disaster Prevention Fund (FDP), US$150,000 by the Biodiversity and Ecosystems Services Fund (BIO) and the remaining US$125,000 by the local counterpart- GOBH through the MEH. Other resources are not available. IDB resources will finance the services of individual consultants/consulting firms, training workshops, multi-media campaigns (informational videos, educational materials), and logistics and materials for public consultations. Local counterpart resources will be provided in kind and will finance staff time, office space and equipment for the project coordinator and technical experts; and coordination and technical support.

3.5 CCB/CBH will have basic responsibility for the disbursement of this technical cooperation. The monitoring and supervision of this technical cooperation will be carried out by the

Bank's Country Office in Barbados (CCB/CBA), under the overall guidance of the team leaders and with the technical support of INE/RND.

IV. Executing agency and execution structure

4.1 The Executing Agency for the TC will be the MEH. The Ministry is charged with the responsibility of overseeing and directing the policies that guide environmental planning and housing development. It comprises the BEST Commission, the Department of Environmental Services and the Ministry of Housing. The Ministry coordinates with several agencies involved in sustainable development and ICZM in The Bahamas, including the Ministry of Works and Urban Development, Ministry of Agriculture, Marine Resources and Local Government; and the Ministry of Tourism. The Ministry is executing other Bank financed TCs.

4.2 A Technical Advisory Committee (TAC) will be established under the MEH in order to provide technical guidance in the execution of the studies in Component 1, validate the needs assessments for capacity building and review and comment on consultants' interim results and draft reports. The membership of the TAC will include representatives from (i) public sector agencies including physical and economic planning, environment, agriculture, public works, climate change, finance, local government, education and social transformation; and (ii) representatives from the private sector, non-governmental organizations, academia and vulnerable communities. The possibility of transforming the TAC into a more formalized coordination structure for ICZM will be addressed during the course of execution.

4.3 A project coordinator will be hired by the MEH with the resources of the TC to provide day to day planning, coordination and implementation and supervision of the components of the TC, liaise with the TAC, finalize terms of reference, coordinate the recruitment of consultants and ensure timely submission of results.

4.4 The designation of the Project Coordinator and the establishment of the TAC within three months of signing of the Agreement shall be a special contractual condition.

4.5 The IDB will execute Component 2 of the TC at the request of the GOBH and will be responsible for the administration of the procurement of the consulting services of that component. This arrangement is for the following reasons: (i) execution by the Bank will enable access to the Bank's highly specialized expertise in ecosystem services mapping and evaluation, disaster risk management and climate change adaptation, which is critical to the achievement of its objectives. It is expected that capacity in these areas will be developed through the implementation of the proposed TC in advance of the approval of the investment loan; and (ii) to minimize the risk that the TC deliverables that are required to inform the design and appraisal of the investment loan are delayed. This arrangement will also address current institutional capacity constraints in ICZM in the MEH/BEST and thus afford the opportunity to promote the transfer of learning and the adoption of new approaches. It will also enable the Bank and the GOBH to monitor for potential risks in the execution of the proposed investment operation, and to take those into consideration during the design.

4.6 Procurement will be carried out in accordance with the Policies for the Procurement of Works and Goods financed by the IDB (GN-2349-9) and the Policies for the Selection and Contracting of Consultants financed by the IDB (GN-2350-9).

V. Project Risks and Issues

5.1 At this incipient stage of development, the establishment of an ICZM program in The Bahamas depends on close and effective coordination of an array of government institutions and well as other local stakeholders who must engage fully in the formulation of the Policy Framework and the design of the investment program. There is a risk of lack of institutional coordination that is required to facilitate successful implementation of the proposed activities. This risk will be largely mitigated by the TAC for the TC which will have full representation of the network of institutions involved in ICZM.

VI. Exceptions to Bank policy

6.1 There are no exceptions to Bank policy.

VII. Environmental and Social Strategy

7.1 It is not anticipated that the activities to be financed under this TC will have negative direct or indirect social or environmental effects. Therefore the project team considers that, according to the Bank's Safeguards Screening Toolkit, this operation (BH-T1029 and BH-T1038) should be given a classification of "C" because: (i) there are no environmental or social risks; and (ii) there is direct contribution to solve environmental issues.

Annexes:

A. Letter of Request
B. Procurement Plan
C. Terms of References
   a. Design and Feasibility Analysis
   b. Technical Studies
   c. Public Awareness
   d. Capacity Building
   e. Program Coordinator

No. FIN/201.10
In reply please
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NASSAU, BAHAMAS

November 29, 2013

Ms. Astrid Wynter
Representative
Inter-American Development Bank
IDB House
East Bay Street
P.O. Box N-3743
Nassau, Bahamas

Dear Ms. Wynter,

RE: BH-1029: Feasibility Studies for a Climate Risk-resilient Coastal Zone Management Program

The Government of The Bahamas would like to request support from the Inter-American Development Bank in financing from Technical Cooperation resources for strengthening the capacity of a climate risk-resilient Integrated Coastal Zone Management (ICZM) Program in The Bahamas. We have already been in discussion with the Bank's Project Team in the preparation of this Technical Cooperation in the amount of US$650,000 and hence the Government is now placing a formal request for this financing.

Further, the Government would like to request the Bank's support in implementing **Component 2 of the Technical Cooperation on the *Design and feasibility analysis of risk-resilient ICZM Investment Program***. This arrangement is for the following reasons:

1. Execution by the Bank will enable access to the Bank's highly specialized expertise in ecosystem services mapping and evaluation, disaster risk management and climate change adaptation, which are critical to the achievement of its objectives. It is expected that Country capacity in these areas will be strengthened through the implementation of the proposed TC in advance of future operations; and

2. To address current institutional capacity constraints in ICZM in the MTEH and thus afford the opportunity to promote the transfer of learning and the adoption of new approaches. It will also enable the Bank and the GOBH to monitor for potential risks in the execution of the proposed investment operation, and to take those into consideration in the design of downstream operation.

We appreciate your assistance with the preparation and financing of this Technical Cooperation which will strengthen existing initiatives that could contribute to a national ICZM policy framework, build the foundational capacity for developing and implementing an investment

program in ICZM, and provide designs and feasibility analyses for the investment program for consideration for this Country.

Accordingly, we look forward to the continued support in the implementation of this Technical Cooperation.

PROCUREMENT PLAN FOR NON-REIMBURSABLE TECHNICAL COOPERATIONS

Country: The Bahamas		**Executing agency: Ministry of the Environment and Housing**	**Public or private sector:** PUBLIC
Project number: BH-T1029 and BH-T1038		**Title of Project: Feasibility studies for a risk-resilient coastal zone management program in The Bahamas**	
Period covered by the plan: 18 months (January 2014 - June 2015)			
Threshold for ex post review of procurements:	**Goods and services (in US$):_____10,000_____**	**Consulting services(in US$):_____4**	**635,000**

Item No.	Ref. AWP	Description (1)	Estimated contract cost (US$)	Procurement Method (2)	procurement (ex-ante or ex-post) (3)	Source of financing and percentage		Estimated date of the procurement notice or start of the contract	Technical review by the PTL (4)	Comments
						IDB/MIF %	Local/other %			
1		**Component 1**								
		Consulting services								
		Consulting service 1: Policy support and analysis	185,000	QCBS/QBS	Ex-ante	100%	0%	Jan-14		
		Consulting service 2: Capacity building for ICZM	45,000	FBS	Ex-ante	100%	0%	Feb-14		
		Consulting servce 3: Public and private sector awareness and consultation	45,000	IICQ	Ex-ante	100%	0%	Feb-14		
2		**Component 2**								
		Consulting services								
		Consulting service 4: Design of baseline studies	50,000	FBS	Ex-Post	100%	0%	Jan-14		
		Consulting service 5: Design and feasibility	230,000	QCBS	Ex-ante	100%	0%	Jan-14		
		Consulting service 6: Project coordination	70,000	IICQ	Ex-Post	100%	0%	Jan-14		
		Consulting service 7: Auditing	10,000	IICQ	Ex-Post	100%	0%	Jan-15		
		Non-consulting services								
		Component 1								
		Public consultation workshops	15,000	PC	Ex-post	100%	0%	N/A		
		Total	650,000	Prepared by: Cassandra Rogers RND/CBA			Date: 11/26/2013			

Design and feasibility analysis of risk-resilient integrated coastal zone management program in The Bahamas (BH-T1029)

INDICATIVE TERMS OF REFERENCE

I. BACKGROUND AND JUSTIFICATION

A. The importance of The Bahamas coastal zone

1.1 The Bahamas consists of more than 700 low lying islands and cays extending over an area of 5000 sq. km. and encompassing a variety of coastal and marine ecosystems, including mangroves, beaches and coral reefs. The coastal zone is a critical asset for the national economy. It harbors much of the islands' critical infrastructure in the tourism[1] and fisheries sectors, including industrial complexes, ports, fish processing plants and tourism resorts and associated services; as well as 80% of the island's residential population. Coastal ecosystems themselves provide goods and services that are also vital to these sectors, including for example the provision of nursery habitat for fish stocks, buffering public infrastructure and coastal populations from coastal erosion and flooding, and supporting tourism and recreation.

1.2 Natural disasters pose a recurring and substantial threat to the well-being of the country's coastal and marine assets and tourism plant, and thus to the country's economy.[2] The Bahamas on average is affected by a hurricane once every three years and three of the Bahamas islands (Andros, Abaco and Grand Bahama) are ranked among the top 10 in terms of effects from tropical systems of all cities, islands and countries in the North Atlantic Basin. Coastal erosion and shoreline stability present additional threats; and the densely populated coastal zone is prone to flooding. There is also increasing evidence that increased intensity and frequency of storms associated with climate change and sea level rise[3] is affecting the health of the country's coastal and marine biodiversity including reef degradation and coral bleaching due to increased temperatures and physical damage and loss of reefs. As most coastal development, agriculture, industry, and residential sites occur at elevations of one to four meters above sea level, and more than 90% of all fresh water resources lie within 1.5 meters of the surface, significant property damage, potential loss of life, and long-term damage to coastal biodiversity is predicted (ICF, Bahamas National Report). Other impacts include greater inundation of

[1] Coastal tourism accounted for 60% of Gross Domestic Product (GDP) and 50% of employment in 2008. 80% of the hotel plant is located on the coast.

[2] In September 2004 for example, Hurricanes Francis and Jeanne affected every island. Substantive damage due to wind, storm surge and flooding due to heavy rainfall amounted to 10% of GDP. The productive sector (tourism and agriculture) suffered 41% of the economic damage, while losses to the infrastructure and social sectors amounted to 27% and 26% respectively. These losses do not include accurate valuation of losses to environmental assets for example loss of mangroves and degradation of coral reefs (ECLAC, 2004).

[3] It is estimated that a one-meter rise in sea level will place 36% of the major tourism properties in the Bahamas at risk, as well as 38% of airports, 14% of the road network and 90% of sea ports. A two-meter rise in sea level is estimated to impact 50% of the country's major tourism resorts. The Bahamas tourism sector can expect annual losses of between US $869 million and US $946 million as a result of sea level rise alone (2050).

low-lying coastal lands, loss of beaches, inland migration of coastal wetlands (notably mangroves) and increased groundwater contamination due to saltwater intrusion.

1.3 The Government of The Bahamas (GOBH) has recognized that future growth and diversification of its tourism-dependent economy depend on the health and prosperity of these ecosystem services and on enhancing the resilience of economic activities to coastal risks associated with natural and anthropogenic hazards such as erosion, flooding and climate change, as well as threats to biodiversity such as loss of coral reefs. Given the strategic importance of the country's coastal zone to economic development, the GOBH has made several advances towards climate risk-resilient ICZM which make this TC and the investment program it aims to develop a timely initiative in its shift towards a sustainable economy.

1.4 Advances include, for example, planning legislation approved in 2010 (Planning and Subdivisions Act of 2010), which includes provision for land use planning, environmental management and the protection of natural resources for New Providence and the Family Islands, including the provision of infrastructure and services to the built environment that address the issues of the coastal zone vulnerability and sensitivity to habitat protection, and the establishment of a Town Planning Committee to support same; and the Bahamas National Geographic Information Systems Centre as the national focal point for technical management, training and clearing house of geospatial data. In addition, in responding to the threat of climate change, the National Climate Change Committee, a multisectoral group of key public and private sector agencies and non-governmental organizations formed as a sub-committee under the Bahamas Environment, Science and Technology (BEST) Commission of the Ministry of Environment and Housing (MEH), has responsibility for coordinating the national response to climate change at the local, national, regional and international levels. The Ministry of Tourism and the National Coastal Awareness Committee are also implementing several related activities including public education and outreach awareness programmes; and initial studies in storm surge modeling and in coastal and marine research and data collection have been completed. These recent developments complement several on-going activities and studies in coastal and marine research and data collection and hazard mapping and vulnerability assessments conducted by the Bahamas National Trust as well as private sector stakeholders that can all contribute to a solid foundation for a permanent ICZM Program.

1.5 The proposed TC would help consolidate these on-going efforts by filling in the gaps in scientific baseline data and by designing an integrated information platform for coastal risk assessment and management. The proposed TC would also support the GOBH in conducting the analytical work and consensus-building activities in support of ICZM policy formulation while simultaneously building capacity among the network of institutions likely to be involved in implementing the policy and investment program.

1.6 In discussions held with the Bank, the GOBH and MEH have reiterated that coastal protection including the mitigation of beach and cliff instability and coastal flooding is a priority for a future investment program. The proposed TC would support the GOBH in

identifying priority sites for coastal works for which baseline studies, designs and analyses of their economic, environmental and financial feasibility are required, *and* designing and assessing cost-effective, low maintenance coastal stabilization measures as well as associated works to control coastal flooding and improve coastal access based on the best available scientific data.

1.7 In order to deliver a viable investment package, the IDB on behalf of the GOBH is seeking the services of an internationally-recognized consulting firm with demonstrated experience in the design and feasibility analysis of risk-resilient coastal investment programs, including aspects related to the design of assessment and monitoring systems, planning, coastal engineering (structural and nonstructural measures), disaster risk management (DRM), climate change adaptation (CCA), ecosystem-based coastal protection, institutional strengthening, socioeconomic analysis, environmental assessment and financial analysis. The firm will work with the GOBH and the Bank project team on two sets of activities. First, the firm will prepare the specifications of baseline scientific studies needed for coastal risk assessment and management as well as for the design of a national integrated coastal risk information platform. Second, the firm will: (i) validate coastal infrastructure investment priorities (Bahamas component), to include where appropriate ecosystem-based coastal protection, non-structural and soft-engineering measures; (ii) prepare engineering and non-structural designs for pilot investments; (iii) conduct the feasibility analysis of investments in accordance with the requirements of the Bank for public sector financing, including socioeconomic, environmental, financial, and institutional feasibility; and (iv) provide all the elements required for a draft loan proposal.

II. OBJECTIVES OF THE CONSULTANCY

2.1 The general objective of the consultancy is to design and carry out the feasibility studies required for the preparation of a risk-resilient ICZM program for The Bahamas for future consideration for loan financing by the IDB.

2.2 The specific objectives are to:

a. Validate the information needs for and design a coastal risk assessment and management system that can serve as a basis for development planning and control;
b. Identify, prioritize and design an investment program for coastal protection that addresses coastal risks including climate change impacts;
c. Identify needs for strengthening national capacity for integrated coastal risk management; and
d. Analyze the overall socioeconomic, environmental and financial feasibility of the investment package for financing;
e. Provide the technical inputs for the preparation of a draft loan proposal; and
f. Facilitate consultations with key stakeholders on the design of the loan.

III. TASKS

3.1 The consulting firm will carry out the following main tasks according to the components of the proposed investment program:

1. Design of Coastal Risk Assessment, Monitoring and Management Component (Component 1)

a. Review the available relevant technical information on coastal risks in The Bahamas and gain familiarity with the on-going work on risk-resilient ICZM, including the activities mandated by the Planning and Subdivisions Act of 2010 related to land use planning, environmental management and the protection of natural resources for New Providence and the Family Islands. Review available information related to public education and outreach awareness programs.

b. Review and assess existing data collection, monitoring and modeling activities as well as information systems administered by the GOBH as they relate to coastal risks (for example studies in storm surge modeling and coastal and marine research data completed for The Bahamas).

c. Validate and prioritize needs for baseline surveys, expanded and/or updated risk monitoring programs, information management systems and modeling capabilities for the purposes of coastal risk management. A preliminary list of studies under consideration appears in Annex 1.

d. Select designs, prepare detailed terms of reference and budgets for: (i) baseline studies of coastal and oceanographic processes (beach, cliff and other shoreline changes, currents, tides, bathymetry and sediment transport), ecosystems and ecosystem goods and services, monitoring systems, and modeling of these processes and services; (ii) natural hazard risk assessment, including hazard assessments, inventories of vulnerable infrastructure, property and population; and estimates of probable losses to public and private assets; and (iii) the development of an integrated coastal risk information platform. The terms of reference will be prepared in accordance to guidelines to be provided by the IDB.

2. Design of Investment Program for Coastal Protection Component (Component 2)

e. Prepare and validate with key stakeholders a priority list of coastal protection works for improved hazard resilience in the coastal zone (New Providence and the Family Islands). This is to include, where appropriate, ecosystem-based coastal protection, non-structural and soft-engineering measures.

f. Recommend a priority list of coastal protection works (New Providence and the Family Islands) for endorsement by the GOBH.

g. Prepare specifications for pre-feasibility modeling studies and development of full engineering designs for structural, non-structural and ecosystem-based coastal protection works for a pilot package of investments.

3. Institutional Strengthening Needs Assessment and Design of Institutional Sustainability Component (Component 3)

h. Review the existing legislation and regulatory framework for ICZM, coastal risk management, DRM and CCA including their mainstreaming in national development planning in an integrated manner.

i. Undertake an analysis of the institutional framework for CZM, coastal risk management, DRM and CCA, taking into consideration on-going assessments and capacity building activities. This shall include an analysis of the functions, responsibilities and level of authority of the different agencies participating in coastal zone management, DRM and CCA as they actually exist. Recommend and validate alternatives for institutional arrangements for the execution of the investment program, including the establishment of a Project Execution Unit (PEU).

j. Carry out an assessment of needs and the design of a proposal for institutional strengthening and capacity building to enable the network of institutions in The Bahamas to more effectively fulfill their mandate, including data management, associated training and research functions, and incorporating an integrated coastal risk management approach;

k. Conduct an institutional assessment of the capacity of the institution recommended to host the PEU to execute the investment program as required by the Bank, in close coordination with the fiduciary specialists (procurement and financial) of the IDB Project Team (SECI analysis). This will include functions such as annual project and activity planning, management and supervision, financial management, procurement and other execution functions and will examine past performance of the PEU in the execution of other programs.

l. Preparation of the terms of reference for a study of measures to be instituted to permit the government to recover investments and maintenance costs of coastal infrastructure measures.

4. Feasibility studies

3.2 This component will produce the feasibility analyses required for structuring the Risk-resilient Coastal Zone Management Program. To this end, the consulting firm will carry out the following tasks:

a. Analysis of environmental and social viability of the Program at two levels: (i) a Strategic Environmental Analysis of the overall phased investment package, including an assessment of the policies, regulations, institutional coordination mechanisms and procedures in place to ensure the viability of the Program during the course of its execution, potential impacts and preventive and mitigation measures; and (ii) environmental analyses of the potential direct, indirect and cumulative impacts of the specific works and activities proposed for the first individual loan operation as required by national legislation and the Bank's Environmental and Social Safeguards Policy, as well as the selection and costing of preventive and mitigation measures. Particular attention will be directed at the analysis and prevention of potential negative environmental impacts on critical and/or natural habitats. The

consultants will be responsible for preparing an Environmental and Social Management Plan which consolidates the measures at the programmatic level and for the individual investments.

b. Analysis of the socio-economic feasibility: The consulting firm will carry out an ex-ante economic assessment of the investment program, and propose an impact evaluation plan for the program. For the economic analysis of the program, the firm will: (i) identify measurable benefits and its associated beneficiaries resulting from the implementation of the program; (ii) propose a feasible methodology to estimate the benefits of the program given the resources available for the economic analysis; (iii) estimate the aggregate costs (investment, operational and management) of the Program and the lifespan of the investments; (iv) subtract aggregate costs from aggregate benefits to compute the following summary measures of economic viability: net present value (NPV) and internal rate of return (IRR); and (v) where possible, assess the benefits and costs of individual program components and calculate the economic viability of these components. For the impact evaluation, the firm will: (i) identify a feasible methodology for impact evaluation of the program. When implemented this methodology should determine whether the proposed program has an impact on the outcomes of interest, and more specifically, to quantify how large that impact is on the outcomes; (ii) determine how the impact evaluation plan links to the standard program monitoring procedures; and (iii) present all steps needed to implement the methodology (including help the GOBH and the IDB to translate the program's objective down to a handful of outcomes that will be used to define success. Then, each outcome should be further simplified to a measurable indicator, develop the baseline of the program using the measurable indicators identified in the previous step; develop the sampling strategy and sample size, in case surveys are needed to be carried out, with preliminary survey instruments and timing of implementation of the surveys; estimate a budget for the implementation of the plan for monitoring and impact evaluation; and (iv) develop detailed Terms of Reference for the implementation of the proposed plan for impact evaluation.

c. Analysis of Options for Sustainability: The sustainability of the structural interventions depends on adequate monitoring of their performance and maintenance. Some form of cost recovery or sharing mechanism should be considered particularly where property owners benefit from the coastal infrastructural improvements under the Program. This will require an analysis of the technical options available for cost recovery and a realistic assessment of the political and legal challenges that the Bahamas must overcome to recover the costs of public investments in places where the private sector is the main beneficiary.

d. Mechanisms for Inter-institutional coordination: Clear lines of responsibility are needed between the various agencies involved in integrated coastal risk management. This will require the design of a coordination mechanism that can help resolve conflicts and avoid duplication in functions.

5. Consultations with public/private sector and civil society

3.3 Past experience with national development initiatives has demonstrated that effective participation of key stakeholders in the definition of the program and the creation of

partnerships is a key factor of success. To this end, the GOBH intends to conduct a set of consultations that will take place concurrent to the various phases of the consultancy. These will be moderated consultations that will provide opportunities to canvas opinions from communities, non-governmental organizations, private sector associations and potential investors on government priorities for investments. The consultations are to be hosted by Ministry of Environment and Housing (MEH). The consulting firm will serve as resources for these consultations, with specialists from its team to be called upon to present the work being undertaken at strategic stages of the preparation.

6. Consolidation of the loan proposal

3.4 Using the results of the feasibility studies, the consulting firm will be responsible for preparing a draft loan proposal package to be organized into the two components of the Program presented above (see paragraph 1.6) in accordance with a format and structure required by the Bank. In addition to the full technical justification for the proposed approach, activities to be financed and alternatives selected, the loan proposal must include all the instruments necessary to ensure its effective implementation. This includes:

a. A Results Matrix, with a baseline of indicators, projected values (without Program) and target values (with Program) and intermediate results indicators;
b. Monitoring and Evaluation System for the Program, including the methodology for the evaluation of the impacts of the Program;
c. Detailed Budget by Components and Activities and Schedule of Investments (Project Execution Plan or PEP);
d. Program Operating Regulations;
e. Annual Operating Plan for the first 18 months;
f. Procurement Plan for the first 18 months;
g. Socioeconomic viability analysis for the overall Program and specific investments;
h. Environmental Analysis of the overall Program, including Environmental and Social Management Plan;
i. Institutional Analysis for execution (SECI);
j. Updated engineering costs; and
k. Detailed terms of reference for studies and design of systems.

IV. CHARACTERISTICS OF THE CONSULTANCY

4.1 Qualifications: International consulting firm or consortium with demonstrated experience and in-depth expertise in the design and feasibility analysis of coastal risk assessment and management programs in countries with similarities to The Bahamas, including aspects related to: (i) the design of coastal and oceanographic baseline surveys, monitoring and information systems, (ii) integrated coastal zone planning, (iii) comprehensive DRM, (iv) CCA, (v) physical modeling of and design of coastal engineering structures for erosion and other coastal risks; (vi) institutional strengthening; (vii) environmental assessment; and (viii) economic and financial analysis. Previous

experience working in projects financed by multi-lateral and bilateral organizations in the Caribbean is desirable.

4.2 Expertise required on team: coastal geology/geomorphology, oceanography, coastal and marine biology, ecosystem services analysis, coastal zone planning, DRM including disaster risk assessment; CCA, coastal engineering, data management, environmental and social impact assessment, financial project analysis; legal and institutional analysis, private sector and public/private partnership financing.

4.3 Duration: 7 months.

4.4 Place of work: Various locations in The Bahamas

4.5 Coordination: The work of the consulting firm will be closely coordinated with the MEH. The work will also be monitored by the IDB Country Office in The Bahamas and the IDB Project Team assigned to the preparation of the Feasibility studies for a climate risk-resilient coastal zone management investment program in The Bahamas (BH-T1029).

V. DELIVERABLES

5.1 The consultancy will be responsible for submitting the following interim and final deliverables:

(i) Work plan to be submitted within two weeks after signature of the contract

(ii) First interim report to be submitted within six weeks after contract signature and containing as a minimum for Component 1 of the loan: the review and assessment of current data collection and monitoring activities and the gap analysis; for Component 2 of the loan: the priority list of engineering works for improved hazard resilience in the coastal zone; for Component 3 of the loan: the review of existing legislations and regulatory framework for integrated coastal risk management and the analysis of the institutional framework for coastal risk management.

(iii) Second interim report to be submitted 16 weeks (4 months) after signature of the contract and containing for Component 1 of the loan: the preliminary draft terms of reference and indicative budgets for the baseline studies, vulnerability assessment and integrated risk information platform; for Component 2 of the loan: the recommended preliminary cost estimates for the engineering works selected for inclusion in the Program, for Component 3 of the loan: the assessment of the institutional capacity to execute the program (SECI analysis) and the preliminary draft terms of reference for the institutional strengthening activities and associated cost estimate and the results of the consultations.

(iv) Draft final report to be submitted 20 weeks (5 months) after signature of the contract and containing all results of the consultancy including the complete feasibility analysis, final designs and terms of reference and all the elements of the loan proposal (see Paragraph 3.4 above).

(v) Final report: incorporating Bank and comments and the MEH.

7. Every report must be submitted to the Bank in one electronic file that should include cover, main document, and all annexes. (Zip files will not be accepted as final reports, due to regulations from the Records Management Section).

Annex 1
Indicative of baseline surveys to be undertaken as part of the Risk-resilient Coastal Zone Management Program

Below is an indicative list of diagnostic baseline surveys for which specifications may be needed as part of the design and feasibility study. The final list of baseline studies to be designed will be established by the GOBH.

a) Georeferenced digital aerial photogrammetry
b) Delineation of shoreline types by geomorphological units for oil spill sensitivity mapping and other risk applications
c) Historical Beach and Shoreline Changes
d) Bathymetry and Coastal and Marine Resource Mapping
e) Oceanography
f) Nearshore current modeling
g) Nearshore and Marine Sedimentology and Sediment Transport
h) Coral Reef Economic Valuation for both natural and artificial reefs (wrecks)
i) Land Use
j) Inventory and Condition of Engineering Structures
k) Hydrogeology, and Terrestrial and Marine Water Quality associated with Watershed management
l) Sedimentation dispersion modeling and pollution indicators
m) Coastal Vulnerability Assessment mapping
n) Stormwater drainage mitigation
o) Storm surge inundation mapping
p) Sea level rise inundation scenarios
q) Characterization of coastal cliffs
r) Determination of slope stability in coastal areas

Technical studies in support of ICZM policy framework in The Bahamas (BH-T1029)

INDICATIVE TERMS OF REFERENCE

I. BACKGROUND AND JUSTIFICATION

A. The importance of The Bahamas coastal zone

1.1 The Bahamas consists of more than 700 low lying islands and cays extending over an area of 5000 sq. km. and encompassing a variety of coastal and marine ecosystems, mangroves, extensive beaches and coral reefs. The coastal zone is a critical asset for the national economy. It harbors much of the islands' critical infrastructure in the tourism[4] and fisheries sectors, including industrial complexes, ports, fish processing plants and tourism resorts and associated services; as well as 80% of the island's residential population. Coastal ecosystems themselves provide goods and services that are also vital to these sectors, including for example the provision of nursery habitat for fish stocks, buffering public infrastructure and coastal populations from coastal erosion and flooding, and supporting tourism and recreation.

1.2 Natural disasters pose a recurring and substantial threat to the well-being of the country's coastal and marine assets and tourism plant, and thus to the country's economy.[5] The Bahamas on average is affected by a hurricane once every three years and three of the Bahamas islands (Andros, Abaco and Grand Bahama) are ranked among the top 10 in terms of effects from tropical systems of all cities, islands and countries in the North Atlantic Basin. Coastal erosion and shoreline stability present additional threats; and the densely populated coastal zone is prone to flooding. There is also increasing evidence that increased intensity and frequency of storms associated with climate change and sea level rise[6] is affecting the health of the country's coastal and marine biodiversity including reef degradation and coral bleaching due to increased temperatures and physical damage and loss of reefs. As most coastal development, agriculture, industry, and residential sites occur at elevations of one to four meters above sea level, and more than 90% of all fresh water resources lie within 1.5 meters of the surface, significant property damage, potential loss of life, and long-term damage to coastal biodiversity is predicted (ICF, Bahamas National Report). Other impacts include greater inundation of

[4] Coastal tourism accounted for 60% of Gross Domestic Product (GDP) and 50% of employment in 2008. 80% of the hotel plant is located on the coast.

[5] In September 2004 for example, Hurricanes Francis and Jeanne affected every island. Substantive damage due to wind, storm surge and flooding due to heavy rainfall amounted to 10% of GDP. The productive sector (tourism and agriculture) suffered 41% of the economic damage, while losses to the infrastructure and social sectors amounted to 27% and 26% respectively. These losses do not include accurate valuation of losses to environmental assets for example loss of mangroves and degradation of coral reefs (ECLAC, 2004).

[6] It is estimated that a one-meter rise in sea level will place 36% of the major tourism properties in the Bahamas at risk, as well as 38% of airports, 14% of the road network and 90% of sea ports. A two-meter rise in sea level is estimated to impact 50% of the country's major tourism resorts. The Bahamas tourism sector can expect annual losses of between US $869 million and US $946 million as a result of sea level rise alone (2050).

low-lying coastal lands, loss of beaches, inland migration of coastal wetlands (notably mangroves) and increased groundwater contamination due to saltwater intrusion.

1.3 The Government of The Bahamas (GOBH) has recognized that future growth and diversification of its tourism-dependent economy depend on the maintenance of these ecosystem services and on enhancing the resilience of economic activities to coastal risks associated with natural and anthropogenic hazards such as erosion, flooding and climate change, as well as threats to biodiversity such as loss of coral reefs. Given the strategic importance of the country's coastal zone to economic development, the GOBH has made several advances towards climate risk-resilient ICZM which make this TC and the investment program it aims to develop a timely initiative in its shift towards a sustainable economy.

1.4 Advances include, for example, planning legislation approved in 2010 (Planning and Subdivisions Act of 2010), which includes provision for land use planning, environmental management and the protection of natural resources for New Providence and the Family Islands, including the provision of infrastructure and services to the built environment that address the issues of the coastal zone vulnerability and sensitivity to habitat protection, and the establishment of a Town Planning Committee to support same; and the Bahamas National Geographic Information Systems Centre as the national focal point for technical management, training and clearing house of geospatial data. In addition, in responding to the threat of climate change, the National Climate Change Committee, a multisectoral group of key public and private sector agencies and non-governmental organizations formed as a sub-committee under the Bahamas Environment, Science and Technology (BEST) Commission of the Ministry of Environment and Housing (MEH), has responsibility for coordinating the national response to climate change at the local, national, regional and international levels. The Ministry of Tourism and the National Coastal Awareness Committee are also implementing several related activities including public education and outreach awareness programmes; and initial studies in storm surge modeling and in coastal and marine research and data collection have been completed. These recent developments complement several on-going activities and studies in coastal and marine research and data collection and hazard mapping and vulnerability assessments conducted by the Bahamas National Trust as well as private sector stakeholders, that can all contribute to a solid foundation for a permanent ICZM Program.

1.5 The proposed TC would help consolidate these on-going efforts by filling in the gaps in scientific baseline data and by designing an integrated information platform for coastal risk assessment and management. The proposed TC would also support the GOBH in conducting the analytical work and consensus-building activities in support of ICZM policy formulation while simultaneously building capacity among the network of institutions likely to be involved in implementing the policy and investment program.

1.6 In discussions held with the Bank, the GOBH and MEH have reiterated that coastal protection including the mitigation of beach and cliff instability and coastal flooding is a priority for a future investment program. The proposed TC would support the GOBH in

identifying priority sites for coastal works for which baseline studies, designs and analyses of their economic, environmental and financial feasibility are required, *and* designing and assessing cost-effective, low maintenance coastal stabilization measures as well as associated works to control coastal flooding and improve coastal access based on the best available scientific data.

1.7 The IDB is seeking the services of a consulting firm to assist in the execution of this activity under the technical cooperation BH-T1029, which seeks to strengthen the policy framework and local capacity for risk-resilient ICZM in The Bahamas, with a view towards making future investments in the sustainable development and management of the country's coastal zone.

II. OBJECTIVES OF THE CONSULTANCY

2.1 The objective of the consultancy is to assess any information gaps related to the development of an ICZM policy framework and to provide quantitative justification and rationale for ICZM and the associated policy framework to be developed by the Government of Barbados.

2.2 The consultancy will provide information around five thematic areas: (i) assessment of any proposed coastal and marine development plans in New Providence and the Family Islands and potential socioeconomic conflicts and synergies; (ii) an economic analysis of the contribution of the coastal zone to the national economy and the sustainable development of potential growth poles (iii) a physical assessment and valuation of ecosystem services including coastal stabilization, flood protection, water quality control, recreational and provisioning services and identification of measures to build ecosystem resilience (iv) preparation of an inventory of critical economic and coastal protection infrastructure (existing and proposed) to identify key vulnerabilities; an analysis and selection of geographic priorities in New Providence and the Family Islands and preparation of an action plan for nation-wide vulnerability and risk assessment including identification of gaps; and (v) an assessment of the legal and regulatory framework for environmental management in the context of sustainable coastal development.

2.3 The first study will inform the policy framework by assessing current and proposed development plans and programs in the coastal zone to identify policy synergies and possible socioeconomic conflicts. The assessment will provide guidance about where the different agencies of the GOBH have overlapping responsibilities and plans for the coastal zone and how these approaches might be harmonized in the ICZM policy framework.

2.4 The second study will provide information on the contribution of the coastal zone to the national economy and the sustainable development of the coastal zone. This study should evaluate the sustainability of coastal and marine dependent industries and the interaction of these industries between other economic activities in the coastal zone (particularly tourism and fisheries). The study should also identify sustainable livelihood

opportunities in the coastal zone and provide recommendations as to what type of economic and social activities should be encouraged in the coastal zone.

2.5 The third study will assess the current state of coastal and marine resources in the framework of ecosystems services, including a physical assessment and valuation of coastal ecosystem services. Priority ecosystem services include: coastal stabilization, flood protection, water quality control, recreational services, and provisioning services. Based on this assessment, the study will provide recommendations for the potential of building ecosystem-based resilience and mitigation of negative impacts. This study should also work closely with the Ministry of Tourism and the National Coastal Awareness Committee in order to solicit stakeholder input on the study.

2.6 The fourth study will recommend priorities and an action plan for a nation-wide vulnerability and risk assessment, taking into consideration both socio-economic and environmental vulnerabilities. This study should include the enhancement of an existing database of critical economic infrastructure and a spatially explicit component to map vulnerable coastal areas and communities. It will also provide strategic guidelines for integrating climate change adaptation and hazard mitigation into the ICZM policy framework.

2.7 The fifth study will assess the institutional, legal and regulatory framework for environmental management in the context of sustainable coastal development.

III. TASKS

3.1 The consulting team will carry out the following tasks:

a) Consult with the GOBH as well as each individual working group (e.g. Town Planning Committee, The Bahamas National Geographic Information Systems Centre, the National Climate Change Committee, and the National Coastal Awareness Committee) to identify knowledge gaps. This assessment should allow the consultancy to establish priority research areas and to identify key individuals and agencies to interview.
b) Review existing development plans and programs that relate to the country's coastal zone; relevant documentation on the contribution of the coastal zone to the national economy; and climate change and vulnerability and risk assessments.
c) Interview relevant agencies and individuals on current policy, planned investments, the impact of coastal activities on ecosystem services, and coastal vulnerabilities.
d) Synthesize findings of above tasks and prepare the four studies:
    a. An assessment of proposed coastal and marine development plans and potential socioeconomic conflicts and synergies;
    b. An economic analysis of the contribution of the coastal zone of The Bahamas to the national economy and the sustainable development of potential growth poles;
    c. A physical assessment and valuation of ecosystem services and identification of measures to build ecosystem resilience;

d. An assessment of priorities and an action plan for nation-wide vulnerability risk assessment, including strategic guidelines for integrating climate change adaptation and hazard mitigation into the ICZM policy framework; and
a. An assessment of the institutional, legal and regulatory framework for environmental management in the context of sustainable coastal development.

IV. CHARACTERISTICS OF THE CONSULTANCY

4.1 Qualifications: International consulting firm or consortium with demonstrated experience and in-depth expertise in coastal zone management technical studies, including aspects related to: (i) integrated policy making, (ii) climate change adaptation, (iii) ecosystem services as a framework for decision-making, (iv) economic analysis of investment programs, and (v) both grey and ecosystem-based coastal protection infrastructure. Previous experience working in projects financed by multi-lateral and bilateral organizations in the Caribbean is desirable.
4.2 Duration: 12 months.
4.3 Place of work: Various locations in The Bahamas.
4.4 Coordination: The work of the consulting firm will be closely coordinated with the MEH. The work will also be monitored by the IDB Country Office in The Bahamas and the IDB Project Team assigned to the preparation of the Feasibility studies for a risk-resilient coastal zone management program in The Bahamas (BH-T1029).

V. DELIVERABLES

5.1 The consultancy will be responsible for submitting the following interim and final deliverables:
(i) Work plan, to be submitted three weeks after the signature of the contract;
(ii) Four interim reports, to be submitted four months after the signature of the contract;
(iii) Four final reports, based on comments from IDB and MEH, to be submitted six months after the signature of the contract.

Building public awareness in Integrated Coastal Zone Management in the Bahamas (BH-T1029)

INDICATIVE TERMS OF REFERENCE

I. BACKGROUND AND JUSTIFICATION

A. The importance of The Bahamas coastal zone

1.1 The Bahamas consists of more than 700 low lying islands and cays extending over an area of 5000 sq. km. and encompassing a variety of coastal and marine ecosystems, mangroves, extensive beaches and coral reefs. The coastal zone is a critical asset for the national economy. It harbors much of the islands' critical infrastructure in the tourism[7] and fisheries sectors, including industrial complexes, ports, fish processing plants and tourism resorts and associated services; as well as 80% of the island's residential population. Coastal ecosystems themselves provide goods and services that are also vital to these sectors, including for example the provision of nursery habitat for fish stocks, buffering public infrastructure and coastal populations from coastal erosion and flooding, and supporting tourism and recreation.

1.2 Natural disasters pose a recurring and substantial threat to the well-being of the country's coastal and marine assets and tourism plant, and thus to the country's economy.[8] The Bahamas on average is affected by a hurricane once every three years and three of the Bahamas islands (Andros, Abaco and Grand Bahama) are ranked among the top 10 in terms of effects from tropical systems of all cities, islands and countries in the North Atlantic Basin. Coastal erosion and shoreline stability present additional threats and the densely populated coastal zone is prone to flooding. There is also increasing evidence that increased intensity and frequency of storms associated with climate change and sea level rise[9] is affecting the health of the country's coastal and marine biodiversity including reef degradation and coral bleaching due to increased temperatures and physical damage and loss of reefs. As most coastal development, agriculture, industry, and residential sites occur at elevations of one to four meters above sea level, and more than 90% of all fresh water resources lie within 1.5 meters of the surface, significant

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[8] In September 2004 for example, Hurricanes Francis and Jeanne affected every island. Substantive damage due to wind, storm surge and flooding due to heavy rainfall amounted to 10% of GDP. The productive sector (tourism and agriculture) suffered 41% of the economic damage, while losses to the infrastructure and social sectors amounted to 27% and 26% respectively. These losses do not include accurate valuation of losses to environmental assets for example loss of mangroves and degradation of coral reefs (ECLAC, 2004).

[9] It is estimated that a one-meter rise in sea level will place 36% of the major tourism properties in the Bahamas at risk, as well as 38% of airports, 14% of the road network and 90% of sea ports. A two-meter rise in sea level is estimated to impact 50% of the country's major tourism resorts. The Bahamas tourism sector can expect annual losses of between US $869 million and US $946 million as a result of sea level rise alone (2050).

property damage, potential loss of life, and long-term damage to coastal biodiversity is predicted (ICF, Bahamas National Report). Other impacts include greater inundation of low-lying coastal lands, loss of beaches, inland migration of coastal wetlands (notably mangroves) and increased groundwater contamination due to saltwater intrusion.

1.3 The Government of The Bahamas (GOBH) has recognized that future growth and diversification of its tourism-dependent economy depend on the maintenance of these ecosystem services and on enhancing the resilience of economic activities to coastal risks associated with natural and anthropogenic hazards such as erosion, flooding and climate change, as well as threats to biodiversity such as loss of coral reefs. Given the strategic importance of the country's coastal zone to economic development, the GOBH has made several advances towards climate risk-resilient ICZM which make this TC and the investment program it aims to develop a timely initiative in its shift towards a sustainable economy.

1.4 Advances include, for example, planning legislation approved in 2010 (Planning and Subdivisions Act of 2010), which includes provision for land use planning, environmental management and the protection of natural resources for New Providence and the Family Islands, including the provision of infrastructure and services to the built environment that address the issues of the coastal zone vulnerability and sensitivity to habitat protection, and the establishment of a Town Planning Committee to support same; and the Bahamas National Geographic Information Systems Centre as the national focal point for technical management, training and clearing house of geospatial data. In addition, in responding to the threat of climate change, the National Climate Change Committee, a multisectoral group of key public and private sector agencies and non-governmental organizations formed as a sub-committee under The Bahamas Environment, Science and Technology (BEST) Commission of the Ministry of the Environment and Housing (MEH), has responsibility for coordinating the national response to climate change at the local, national, regional and international levels. The Ministry of Tourism and the National Coastal Awareness Committee are also implementing several related activities including public education and outreach awareness programmes; and initial studies in storm surge modeling and in coastal and marine research and data collection have been completed. These recent developments complement several on-going activities and studies in coastal and marine research and data collection and hazard mapping and vulnerability assessments conducted by the Bahamas National Trust as well as private sector stakeholders, that can all contribute to a solid foundation for a permanent ICZM Program.

1.5 The proposed TC would help consolidate these on-going efforts by filling in the gaps in scientific baseline data and by designing an integrated information platform for coastal risk assessment and management. The proposed TC would also support the GOBH in conducting the analytical work and consensus-building activities in support of ICZM policy formulation while simultaneously building capacity among the network of institutions likely to be involved in implementing the policy and investment program.

1.6 The IDB is seeking the services of an individual consultant with demonstrated experience in delivering highly-effective communication solutions to help design and carry out a multi-media campaign that will accompany the formulation of the national framework for ICZM.

II. OBJECTIVES OF THE CONSULTANCY

2.1 The general objective of the consultancy is to support the GOBH in its efforts towards an ICZM, and in communicating and informing its public constituency on relevant issues concerning ICZM. The specific objectives of the consultancy are to: (i) design and deliver a cost-effective and high-impact multi-media campaign aimed at raising public awareness and understanding of the value of the coastal zone to the national economy, coastal risks including those associated with natural disasters and climate change impacts and the benefits of risk-resilient ICZM; and (ii) provide support in the design and production of compelling and relevant communication materials to be used during the public consultations to be conducted in concert with the formulation of the national ICZM policy framework.

III. TASKS

3.1 The consultant will carry out the following tasks:

a. Undertake a baseline survey commissioned by the GOBH to assess existing public awareness and understanding of ICZM opportunities and issues in both rural and urban areas. Using the survey results complemented with interviews with the members of the government, the consultant should identify the following: (i) the thematic gaps in public awareness of ICZM; (ii) the demographic and social groups that are priorities for outreach campaigns due to both their lack of understanding of ICZM and relevance to successful ICZM implementation; (iii) the benefits and opportunities associated with ICZM that have widespread popularity; (iv) the ecosystem services that are widely valued across different stakeholder groups; and (v) the optimal media outlets for disseminating information about ICZM.

b. Design and deliver a multi-media public communication strategy that will promote buy-in to the ICZM process and build awareness of environmental issues. The design of the multi-media campaign (i.e.: audiences, key messages) will use lessons learned from the baseline survey to emphasize environmental issues that resonate with different stakeholders. The campaign will introduce the idea of "ecosystem services" in order to emphasize the connection between the environment and public well-being. Critical ecosystem services to consider include: recreation/tourism, provisioning (with an emphasis on fisheries), coastal stabilization, storm protection, flood protection and water quality control. Moreover, the campaign will explain how the ICZM policy framework and investment plan will work to protect the natural resources that provide valuable ecosystem services.

c. Assist in the design of public consultation events for the proposed policy framework, tailored to the most appropriate modalities for ensuring meaningful engagement of stakeholders in The Bahamas. Based upon the results from the baseline studies, the

consultant will provide his/her input on target priority stakeholders for the consultations, including private sector actors with economic interest in the coastal zone, civil society groups, and relevant government agencies. The consultancy will be responsible for the design and development of appropriate communication materials to complement the public consultation process. An overview of the policy framework will be presented with the objective of receiving feedback to further inform the development of the policy framework. The public consultations will be designed and implemented in close coordination with the GOBH and will include consultations with the private sector.

IV. CHARACTERISTICS OF THE CONSULTANCY

4.1 Qualifications: Individual consultant with demonstrated experience and in-depth expertise in public awareness campaigns, including aspects related to: (i) baseline surveys, (ii) focus groups, (iii) public consultations, and (iv) multi-media campaigns. Previous experience working in projects financed by multi-lateral and bilateral organizations in the Caribbean is desirable. Experience with coastal zone ecosystems and ecosystem services are also beneficial.

4.2 Duration: 5 months.

4.3 Place of work: Various locations in The Bahamas.

4.4 Coordination: The work of the consultant will be closely coordinated with the Ministry of the Environment and Housing. The work will also be monitored by the IDB Country Office in the Bahamas and the IDB Project Team assigned to the preparation of the Feasibility studies for a risk-resilient coastal zone management program in The Bahamas (BH-T1029).

V. DELIVERABLES

5.1 The consultancy will be responsible for submitting the following interim and final deliverables:

a) Work plan to be submitted two weeks after the signature of the contract;
b) Summary report of findings from baseline survey results and interviews;
c) Multi-media public communication strategy (design, implementation, timeline, monitoring, and budget plan);
d) Materials for public consultations (print and online);
e) Inputs and recommendations in the design of the public consultation process (i.e.: key stakeholders, modality of public consultation events, content).

Capacity Building for Integrated Coastal Zone Management in The Bahamas (BH-T1029)

INDICATIVE TERMS OF REFERENCE

I. BACKGROUND AND JUSTIFICATION

A. The importance of The Bahamas coastal zone

1.1 The Bahamas consists of more than 700 low lying islands and cays extending over an area of 5000 sq. km. and encompassing a variety of coastal and marine ecosystems, including mangroves, beaches and coral reefs. The coastal zone is a critical asset for the national economy. It harbors much of the islands' critical infrastructure in the tourism[10] and fisheries sectors, including industrial complexes, ports, fish processing plants and tourism resorts and associated services; as well as 80% of the island's residential population. Coastal ecosystems themselves provide goods and services that are also vital to these sectors, including for example the provision of nursery habitat for fish stocks, buffering public infrastructure and coastal populations from coastal erosion and flooding, and supporting tourism and recreation.

1.2 Natural disasters pose a recurring and substantial threat to the well-being of the country's coastal and marine assets and tourism plant, and thus to the country's economy.[11] The Bahamas on average is affected by a hurricane once every three years and three of the Bahamas islands (Andros, Abaco and Grand Bahama) are ranked among the top 10 in terms of effects from tropical systems of all cities, islands and countries in the North Atlantic Basin. Coastal erosion and shoreline stability present additional threats; and the densely populated coastal zone is prone to flooding. There is also increasing evidence that increased intensity and frequency of storms associated with climate change and sea level rise[12] is affecting the health of the country's coastal and marine biodiversity including reef degradation and coral bleaching due to increased temperatures and physical damage and loss of reefs. As most coastal development, agriculture, industry, and residential sites occur at elevations of one to four meters above sea level, and more than 90% of all fresh water resources lie within 1.5 meters of the surface, significant property damage, potential loss of life, and long-term damage to coastal biodiversity is predicted (ICF, Bahamas National Report). Other impacts include greater inundation of

[10] Coastal tourism accounted for 60% of Gross Domestic Product (GDP) and 50% of employment in 2008. 80% of the hotel plant is located on the coast.

[11] In September 2004 for example, Hurricanes Francis and Jeanne affected every island. Substantive damage due to wind, storm surge and flooding due to heavy rainfall amounted to 10% of GDP. The productive sector (tourism and agriculture) suffered 41% of the economic damage, while losses to the infrastructure and social sectors amounted to 27% and 26% respectively. These losses do not include accurate valuation of losses to environmental assets for example loss of mangroves and degradation of coral reefs (ECLAC, 2004).

[12] It is estimated that a one-meter rise in sea level will place 36% of the major tourism properties in the Bahamas at risk, as well as 38% of airports, 14% of the road network and 90% of sea ports. A two-meter rise in sea level is estimated to impact 50% of the country's major tourism resorts. The Bahamas tourism sector can expect annual losses of between US $869 million and US $946 million as a result of sea level rise alone (2050).

low-lying coastal lands, loss of beaches, inland migration of coastal wetlands (notably mangroves) and increased groundwater contamination due to saltwater intrusion.

1.3 The Government of The Bahamas (GOBH) has recognized that future growth and diversification of its tourism-dependent economy depend on the maintenance of these ecosystem services and on enhancing the resilience of economic activities to coastal risks associated with natural and anthropogenic hazards such as erosion, flooding and climate change, as well as threats to biodiversity such as loss of coral reefs. Given the strategic importance of the country's coastal zone to economic development, the GOBH has made several advances towards climate risk-resilient ICZM which make this TC and the investment program it aims to develop a timely initiative in its shift towards a sustainable economy.

1.4 Advances include, for example, planning legislation approved in 2010 (Planning and Subdivisions Act of 2010), which includes provision for land use planning, environmental management and the protection of natural resources for New Providence and the Family Islands, including the provision of infrastructure and services to the built environment that address the issues of the coastal zone vulnerability and sensitivity to habitat protection, and the establishment of a Town Planning Committee to support same; and the Bahamas National Geographic Information Systems Centre as the national focal point for technical management, training and clearing house of geospatial data. In addition, in responding to the threat of climate change, the National Climate Change Committee, a multisectoral group of key public and private sector agencies and non-governmental organizations formed as a sub-committee under the Bahamas Environment, Science and Technology (BEST) Commission of the Ministry of the Environment and Housing (MEH), has responsibility for coordinating the national response to climate change at the local, national, regional and international levels. The Ministry of Tourism and the National Coastal Awareness Committee are also implementing several related activities including public education and outreach awareness programmes; and initial studies in storm surge modeling and in coastal and marine research and data collection have been completed. These recent developments complement several on-going activities and studies in coastal and marine research and data collection and hazard mapping and vulnerability assessments conducted by the Bahamas National Trust as well as private sector stakeholders that can all contribute to a solid foundation for a permanent ICZM Program.

1.5 The proposed TC would help consolidate these on-going efforts by filling in the gaps in scientific baseline data and by designing an integrated information platform for coastal risk assessment and management. The proposed TC would also support the GOBH in conducting the analytical work and consensus-building activities in support of ICZM policy formulation while simultaneously building capacity among the network of institutions likely to be involved in implementing the policy and investment program.

1.6 The GOBH and the Bank are seeking the services of a consulting firm with demonstrated experience in the design and delivery of training services in natural resources

management and sustainable development fields to help assess capacity building needs in ICZM as well as support the design and delivery of capacity building activities.

II. OBJECTIVES OF THE CONSULTANCY

2.1 The general objective of the consultancy is to enhance knowledge and capacities in innovative aspects of ICZM of the GOBH and other key stakeholders in ICZM. Enhanced knowledge and capacities will enable the GOBH to elaborate a national policy framework that builds the foundation for a permanent coastal zone management function and to design a risk resilient ICZM investment program.

2.2 The consultancy will work to build the capacity of the GOBH in a number of thematic areas representing the state-of-the-art in ICZM in the Caribbean. Although the definitive list of thematic areas will depend on a needs assessment survey to be conducted at the beginning of the consultancy, potential areas for capacity building include: (i) the integration of disaster risk management and climate change adaptation in ICZM (e.g., risk identification and assessment); (ii) decision making skills related to the valuation of ecosystem services and economic analysis of investment options; (iii) investment solutions (science-based coastal engineering, including non-structural measures, and ecosystem-based coastal protection); and innovative governance arrangements for financially sustainable ICZM including public-private partnerships.

2.3 As detailed in Section I, the abundant and diverse coastal zone resources of The Bahamas face risks associated with geologic and climatic hazards expected to increase due to climate change. The consultancy will build the capacity of the GOBH in understanding the concepts and science associated with risks, their identification, assessment and mitigation within the context of the coastal zone. Adaptation to climate change is a priority in the context of disaster risk management; capacity building will focus on the predicted changes that The Bahamas will face in the coming years and risk reduction and adaptation measures.

2.4 The consultancy will also build the capacity of the GOBH decision-making skills in at least two specific areas. First, ecosystem services and their valuation are new concepts that have been growing in prominence since the release of the Millennium Ecosystem Assessment. By understanding the benefits that ecosystems provide to people, the GOBH will be better able to incorporate environmental management into the policy framework. The role of ecosystem services in disaster risk management will be highlighted. Second, the consultancy will increase capacity in economic analysis of investment options. This will allow the government to design the policy framework to maximize returns from the ICZM investment program, the design of which is supported under other activities within this TC.

2.5 Finally, the consultancy will increase the Government's capacity to identify investment solutions to increase coastal resilience. The consultancy will provide the GOBH with information on a range of coastal infrastructure options, including grey infrastructure,

non-structural measures and ecosystem-based coastal protection. This capacity building component will relate to disaster risk management strategies identified in 2.3 and the incorporation of ecosystem services as a decision-making tool and economic analysis of investment options in paragraph 2.4, and will include a technical visit by key stakeholders to Barbados in order to view the Barbados ICZM Program (a best practice) including the use of coastal infrastructure to protect coastal resources.

III. TASKS

3.1 The consulting team will carry out the following tasks:

a. Conduct a brief assessment of immediate capacity building needs for the GOBH and each relevant stakeholder (listed in paragraph 3.1g). The assessment will involve both surveys and interviews with representatives of each participating institution and other stakeholder in order to identify their unique requirements and their relation to the thematic areas outlined in section II.
b. Collect reports and other relevant printed knowledge products that are related to each thematic area in paragraph 2.2.
c. Outline a plan for capacity building.
d. Design course agendas and select modules.
e. Recruit instructors for the selected modules.
f. Curriculum development (lectures, case studies, exercises, background reading materials).
g. Execute separate two-day training workshops with each of the relevant groups/stakeholders. The total number of individuals trained should be at least 40. The needs assessment exercises will define which thematic areas are a priority for each group workshop. Each workshop should be specifically tailored to the requirements of the particular group.

IV. CHARACTERISTICS OF THE CONSULTANCY

4.1 Qualifications: International consulting firm or consortium with demonstrated experience and in-depth expertise in capacity building on the issue of coastal zone management, including aspects related to: (i) disaster risk management, (ii) climate change adaptation, (iii) ecosystem services as a framework for decision-making, (iv) economic analysis of investment programs, and (v) both grey and ecosystem-based coastal protection infrastructure. Previous experience working in projects financed by multi-lateral and bilateral organizations in the Caribbean is desirable.

4.2 Duration: 3 months.

4.3 Place of work: The Bahamas.

4.4 Coordination: The work of the consulting firm will be closely coordinated with the Ministry of Environment and Housing and the Technical Advisory Committee for the project. The work will also be monitored by the IDB Country Office in the Bahamas and the IDB Project Team assigned to the preparation of the Feasibility studies for a risk-resilient coastal zone management program in The Bahamas (BH-T1029).

V. DELIVERABLES

5.1 The consultancy will be responsible for submitting the following interim and final deliverables:

i. Work plan to be submitted two weeks after the signature of the contract.

ii. Report summarizing findings of the needs assessment exercises, including the specific needs of each group, within five weeks after the signature of the contract. The report will include a strategy and outline for the capacity building workshops.

iii. Electronic knowledge packets for each group. These should include any powerpoint presentations given to the group during the workshops along with supplemental reports that are foundational to each of the thematic areas in 2.2.

Project coordinator for Feasibility Studies for a Risk-resilient Integrated Coastal Zone Management Program in The Bahamas (BH-T1029)

INDICATIVE TERMS OF REFERENCE

I. BACKGROUND AND JUSTIFICATION

A. The importance of The Bahamas coastal zone

1.1 The Bahamas consists of more than 700 low lying islands and cays extending over an area of 5000 sq. km. and encompassing a variety of coastal and marine ecosystems, including mangroves, beaches and coral reefs. The coastal zone is a critical asset for the national economy. It harbors much of the islands' critical infrastructure in the tourism[13] and fisheries sectors, including industrial complexes, ports, fish processing plants and tourism resorts and associated services; as well as 80% of the island's residential population. Coastal ecosystems themselves provide goods and services that are also vital to these sectors, including for example the provision of nursery habitat for fish stocks, buffering public infrastructure and coastal populations from coastal erosion and flooding, and supporting tourism and recreation.

1.2 Natural disasters pose a recurring and substantial threat to the well-being of the country's coastal and marine assets and tourism plant, and thus to the country's economy.[14] The Bahamas on average is affected by a hurricane once every three years and three of the Bahamas islands (Andros, Abaco and Grand Bahama) are ranked among the top 10 in terms of effects from tropical systems of all cities, islands and countries in the North Atlantic Basin. Coastal erosion and shoreline stability present additional threats; and the densely populated coastal zone is prone to flooding. There is also increasing evidence that increased intensity and frequency of storms associated with climate change and sea level rise[15] is affecting the health of the country's coastal and marine biodiversity including reef degradation and coral bleaching due to increased temperatures and physical damage and loss of reefs. As most coastal development, agriculture, industry, and residential sites occur at elevations of one to four meters above sea level, and more than 90% of all fresh water resources lie within 1.5 meters of the surface, significant property damage, potential loss of life, and long-term damage to coastal biodiversity is

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predicted (ICF, Bahamas National Report). Other impacts include greater inundation of low-lying coastal lands, loss of beaches, inland migration of coastal wetlands (notably mangroves) and increased groundwater contamination due to saltwater intrusion.

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1.6 The GOBH and the Bank are seeking the services of an individual consultant with demonstrated experience in program coordination and management of complex environmental projects in the context of the Caribbean.

II. OBJECTIVES OF THE CONSULTANCY

2.1 The objective of this consultancy is to coordinate the activities of the TC entitled 'Feasibility studies for a risk-resilient integrated coastal zone management program in The Bahamas.' Successful implementation of this project is expected to contribute to the development of a national policy framework for coastal zone management; and enhanced capacity to deliver an ICZM investment program.

III. TASKS

3.1 The consultant in the role of the Project Coordinator (PC) will help ensure that the procurement of goods and services on this project is in accordance with agreed procurement guidelines and standards. The PC will:

a. Manage the consultant(s) who will deliver the technical components of the project.
b. Manage and control the project documents, logistics, procurement, outputs and publications.
c. Ensure timely liaison with the GOBH, including submission for review by the Government of interim and draft reports of consultants.
d. Review and consolidate all technical comments received on interim and draft reports.
e. Use project management tools and techniques to facilitate successful implementation of all components of the project, paying attention to the management of resources, the keeping of financial and other records, stakeholder relationships and communications and visibility.
f. Monitor project implementation and prepare periodic monitoring reports (technical and financial) ensuring timely submission.
g. Coordinate project activities to ensure that each component is implemented in accordance with the program objectives.
h. Help organize and hold project events including capacity building workshops and public consultations.

3.2 Collaborate with the GOBH and the IDB to facilitate project review missions by the IDB and plan and organize mid-term reviews.

IV. CHARACTERISTICS OF THE CONSULTANCY

4.1 Qualifications: A post-graduate degree or equivalent professional experience in environmental or coastal zone management, sustainable development or related areas, environmental economics, and project management skills. Minimum 5 (five) years of experience in project management, preferably in an area related to risk resilience, e.g. coastal zone management; natural resources management; disaster risk management or related field; prior working experience in the Caribbean and in IDB or other

internationally funded project will be an asset. Excellent communication (oral and written) skills in English.

4.2 Type of consultancy: Individual consultant.

4.3 Duration: 14 months.

4.4 Location: The Bahamas.

4.5 Payment schedule: Remuneration will be monthly and contingent on the submission of satisfactory progress reports.

4.6 Coordination: The Project Coordinator will report to the MEH and work in close coordination with the Technical Advisory Committee for the project. The work will also be monitored by the IDB Country Office in the Bahamas and the IDB Project Team assigned to the preparation of the Feasibility studies for a risk-resilient coastal zone management program in The Bahamas (BH-T1029).

V. DELIVERABLES

5.1 The consultancy will be responsible for submitting the following interim and final deliverables

(i) A detailed work plan, methodology and implementation schedule within ten (10) working days after commencement of the assignment.

(ii) Submission of periodic program reports in accordance with agreed schedule.