

TC Document

I. Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	Supporting the Development of Blue Carbon Markets in the Caribbean
▪ TC Number:	RG-T4486
▪ Team Leader/Members:	Lopez Tovar, Sandra Lucia (IFD/CTI) Team Leader; Alleng, Gerard P. (CSD/CCS) Alternate Team Leader; Dohnert De Lascurain, Sylvia Eva (IFD/CTI) Alternate Team Leader; Galeano Buitrago Maria Alejandra (IFD/CTI); Ramsumair-John, Priya Elizabeth (CCB/CTT); Ferrari Gisela (CSD/CCS); Farah Al Taher (CSD/CCS); Christian Janelle Natasha (CSD/CCS); Delgado, C. Raul (CSD/CCS); Visconti, Gloria (CSD/CCS); Stevenson, Claudia (IFD/CTI); Grant, Kayla Sharee (IFD/CTI); Morales Reina Genesis Del Carmen (IFD/CTI); Vila Saint Etienne, Sara (LEG/SGO); Radaelli, Vanderleia (IFD/CTI)
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	.
▪ Date of TC Abstract authorization:	April 27 th 2024
▪ Beneficiary:	The Bahamas, Belize, Jamaica, Trinidad & Tobago
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	NDC Pipeline Accelerator Multidonor Trust Fund(ACL); OC SDP Window 2 - Institutions(W2C); OC SDP Window 2 - Sustainability(W2A)
▪ IDB Funding Requested:	NDC Pipeline Accelerator Multidonor Trust Fund (ACL): US\$200,000.00 OC SDP Window 2 - Sustainability (W2A): US\$200,000.00 OC SDP Window 2 - Institutions (W2C): US\$200,000.00 Total: US\$600,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	42 Months
▪ Required start date:	Augst 1st, 2024
▪ Types of consultants:	Firms and Individuals
▪ Prepared by Unit:	IFD/CTI-Competitiveness, Technology and Innovation Division
▪ Unit of Disbursement Responsibility:	IFD/CTI-Competitiveness, Technology and Innovation Division
▪ TC included in Country Strategy (y/n):	Yes
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2024-2030:	Environmental sustainability; Gender equality; Institutional capacity and rule of law; Productivity and innovation

II. Objectives and Justification of the TC

2.1 **Objectives.** The general objective of this Technical Cooperation (TC) is to set the foundation for Caribbean governments and businesses to participate in global blue carbon markets. The specific objectives are to: (i) conduct detailed assessment of carbon stocks in blue carbon ecosystems (mangrove forests and seagrass beds) in beneficiary countries; (ii) develop a regional policy/legislative framework to prepare countries to harness blue carbon markets and natural assets financing; and

(iii) establish a policy dialogue to disseminate knowledge and strengthen capabilities for present and future participation in blue carbon markets.

- 2.2 **Justification.** The Caribbean region has experienced much slower growth rates over the last three decades than Latin American economies and even than other small developing states. At the macro-level, growth has been hampered by, among others, high levels of countries' indebtedness which restrict the capacity for investment, and vulnerability to external shocks, including the 2009 financial crisis, COVID-19, and the increasing frequency and intensity of climate events. At the micro-level, growth has been stymied by scant diversification of economic activities and export markets. Within the global effort to address climate change, there is potential for Caribbean countries to utilize their natural assets and tap into carbon markets in ways that can dynamize sustainable growth and strengthen climate resilience. Blue carbon ecosystems are key natural components of the Blue Economy and are being re-evaluated in the natural capital accounting of many countries. They are also being incorporated in the Nationally Determined Contributions (NDCs) of countries as key assets to help targets set under the NDCs (Thuy and Thuy, 2019). Additionally, the significance of these systems to help unlock climate financing for governments and for businesses involved in blue economy activities is gaining significant traction and interest, given the potential of their carbon stock to be utilized as carbon credits within an emerging blue carbon market and their contribution to the mitigation and adaptation targets within the NDCs. As is in the case of Belize's updated NDC, where targets for mangrove and seagrass restoration and conservation have been set under the sector focus related to land use change and forestry; similarly, as in the Bahamas where under adaptation actions, targets are set to conserve and manage seagrasses and mangroves; or in Jamaica where poverty eradication is linked to the sustainable management of forest resources and implementation of adaptation measures.
- 2.3 Coastal ecosystems such as mangroves, saltmarshes and seagrasses help to mitigate climate change by sequestering and storing significant amounts of carbon, known as coastal blue carbon, from the atmosphere and oceans. These marine and coastal ecosystems are considered some of the most carbon-dense ecosystems globally, exceeding that of terrestrial forests (Donato et al., 2011) and recent estimates of carbon stored (6.4 billion metric tonnes) in them indicate a greater storage capacity than previously expected (4.19 billion metric tonnes) (Sanderman et al., 2018). Moreover, they are critical to biodiversity and human wellbeing as they provide several highly valuable ecosystems services such as raw materials and food, coastal protection, erosion control, water purification, maintenance of fisheries, tourism, recreation, education, and research (Barbier et al., 2011). Coastal communities depend heavily on these ecosystems for livelihoods, food security, social connections, in addition to disaster and climate risk reduction.
- 2.4 The Caribbean region's potential participation in carbon markets is hampered by lack of data. Quantitative data on the carbon stocks of blue economy ecosystems are scarce, especially site-specific data on whole-ecosystem storage capacity. Part of the reason for this scarcity of information is the challenging nature and costs of collecting data in blue carbon environments, especially that of mangrove forests, given the intricate morphology and architecture and the habitats in which they are located (Pham et al., 2023). Most of the carbon in mangrove forests is stored as large pools in the above- and below-ground biomass. Seagrass meadows are also effective stores of blue carbon, with estimates that the organic carbon stored per unit area of seagrass meadows is also greater than that of terrestrial forests (Blume et. al 2023). Additionally,

there is limited human capacity within the region dedicated to the research, monitoring and evaluation of these systems.

- 2.5 For Small Island Developing States (SIDS) like those in the Caribbean that have these natural assets, there is increasing pressure to utilize blue carbon ecosystems in new climate and biodiversity financing mechanisms. However, given the data limitations described, together with a paucity of appropriate legislative and regulatory frameworks to adequately manage these systems, significant efforts must be undertaken to conduct comprehensive blue carbon assessments of countries in the region, develop a policy and legislative guidance framework, and identify a pipeline of bankable blue economy projects. This will enable beneficiary countries to participate in carbon markets under Article 6 of the Paris Agreement, as stated in their NDCs. Additionally, the data will be used to demonstrate progress towards meeting targets of the Global Biodiversity Framework and their national strategy and action plans.
- 2.6 Natural hazards and climate change impact women and men differently due to differences in societal expectations of their roles and responsibilities in families and communities and how they earn their livelihoods. Women generally have lower incomes, less access to credit and decision-making authority, and limited control over resources, which increases their vulnerabilities to many natural hazards and climate change impacts. In conservation activities, there is a tendency for women to be left out of consultation, planning and management, which can in turn amplify existing gender inequalities. There is growing evidence that integrating gender into conservation projects can increase the benefits of conservation for all people and nature. Thus, it is important to look for opportunities, not only to empower vulnerable groups, but to provide a space to share knowledge, perceptions, and experiences, and to avoid exacerbating existing inequalities. Some of the benefits of integrating gender into blue carbon projects include helping to ground activities in a good understanding of the local context, existing vulnerabilities, and capacities; helping to ensure activities are relevant to both men and women in different social settings; helping practitioners and communities understand why and how gender groups can play different roles in managing marine resources, can be vulnerable to changes in marine resource use in different ways, and how this can change over time; and helping to ensure decision-making power is more equally distributed between different social groups.
- 2.7 Overall, the blue carbon data and policy framework should guide Caribbean governments' blue carbon initiatives in coastal communities prioritizing local economies, promoting social equity and gender equality, and reducing social vulnerabilities in coastal communities. It will also facilitate the achievement of economies of scale through the possible aggregation of carbon units from some of the smaller islands. Therefore, a regional position on blue carbon markets is imperative to address climate change, generate collective solutions, increase awareness and attract the attention of government officials, policymakers, local communities, members of the private sector, sustainable investors, members of academia, and the scientific community.
- 2.8 **Strategic Alignment.** The TC is consistent with the IDB Group's Institutional Strategy: Transforming for Scale and Impact (GN-3159-12) and is aligned with the objectives of: (i) address climate change by generating scientific data to participate in global carbon markets, strengthening climate resilience, and generating business in the blue economy; and (ii) bolster sustainable regional growth by promoting regional regulatory frameworks to support private sector development and access to global carbon markets;. The TC is also aligned with the operational focus areas of: (i) biodiversity,

natural capital and climate action; (ii) gender equality and inclusion of diverse population groups; (iii) institutional capacity, rule of law, and citizen security; (iv) productive development and innovation through the private sector; and (v) regional integration. The TC is also aligned with the climate change adaptation and disaster risk management priority area and the cross-cutting area of strengthening institutions of the IDB's ONE Caribbean (Partnering for Caribbean Development Framework) (GN-3201-2).

- 2.9 This TC is consistent with the Innovation, Science, and Technology Sector Framework Document (GN-2791-13) through: (i) the line of action 3: “foster an enabling environment for private investment in innovation and connectivity” by creating opportunities for accessing blue carbon markets and the application of cutting edge technologies (i.e., machine learning) to refine carbon stock assessments, facilitating replication; (ii) line of action 5: “strengthen key institutions to drive innovation” by drafting a regional regulatory framework for blue carbon markets and natural assets, as well as identifying a pipeline of bankable projects in the blue economy; and (iii) line of action 6: “knowledge agenda” by generating scientific-based data on carbon stocks in blue carbon ecosystems (i.e., mangrove forests and seagrass beds). Additionally, the TC is aligned with the Climate Change Sector Framework Document (GN-2835-13) through the line of actions: (1) “adapt and build climate resilience”; (2) “decarbonize rapidly”; and (3) “build effective governance”, as the work carried out under the proposed TC will serve to facilitate Caribbean countries in generating data and strengthening governance to access blue carbon markets to comply with national climate commitments and enable participation in international carbon markets, creating linkages between the public and private sectors to accelerate climate action. The TC is aligned with the objectives of the priority area 1: “climate change and environmental sustainability” by expanding the knowledge base on climate change mitigation and adaptation geared towards leveraging climate investments; and the priority area 2: “effective, efficient, and transparent institutions” contributing to public policies and institutions that are more effective, efficient, and transparent of the Ordinary Capital Strategic Development Program (W2A and W2C) (GN-2819-14). It is also aligned with the eligibility criteria of the NDC Pipeline Accelerator Multidonor Trust Fund (ACL) (GN-2890) as the TC directly promotes: (i) identifying a pipeline of blue carbon projects; (ii) contributing to achieving beneficiary countries’ NDCs and SDGs as outlined in 2.2 and 2.4; (iii) improving coordination between the public and private sectors to accelerate climate action through bankable projects to access blue carbon markets; and (iv) efforts to sequester GHG emissions and increase climate resilience.
- 2.10 Additionally, the TC is aligned with the IDB Group Country Strategy with the Commonwealth of The Bahamas 2024-2028 (GN-3198-1): it aligns with the country’s strategy priority “strengthening public sector governance” by improving information asymmetries regarding carbon stocks in blue carbon ecosystems; and strengthening the regulatory framework for blue carbon markets and natural capital assets in coastal ecosystems; and “boosting private sector competitiveness” by enabling the environment for investments that promote innovation in nontraditional sectors like blue economy.
- 2.11 IDB Group Country Strategy with Belize 2022-2025 (GN-3086): This TC is in line with the country’s strategy, addressing the “private sector productivity and sustainable growth” priority by strengthening the innovation ecosystem at the public and private sector levels, focused on the blue economy; and improving resilience to climate change.

- 2.12 IDB Group Country Strategy with Jamaica 2022-2026 (GN-3138): The TC is aligned with the country's strategy priority areas "reactivate the productive sector for sustainable growth" by improving the ability to tap into innovative financing for the blue economy.
- 2.13 IDB Group Country Strategy with Trinidad & Tobago 2021-2025 (GN-3071): This TC is aligned with the country strategy related to private sector development. Specifically, by preparing the country to harness blue carbon markets and natural assets financing for supporting decarbonization, climate resilience and economic transformation.
- 2.14 Furthermore, the country strategies of all four countries have climate change as a cross-cutting issue to which the TC is aligned. In specific cases, there are direct references to the protection and restoration of mangroves and coastal ecosystems to enhance resilience to climate change (e.g. country strategies for Belize, Trinidad and Tobago and Jamaica). The country strategy for Bahamas includes the incorporation of science-based and climate-resilient measures.
- 2.15 Finally, the TC supports the continuing work of the Bank in the blue carbon space under its UK Blue Carbon Fund, with the implementation of mangrove restoration and conservation TCs in: (i) Jamaica ([ATN/BB-17899-JA](#)) Blue Carbon Restoration in Southern Clarendon, Jamaica; (ii) Suriname ([ATN/BB-19958-SU](#)) Blue Carbon Restoration in the Bigi Pan MUMA, Suriname; (iii) Panama ([ATN/BB-18013-PN](#)) Valuing, Protecting and Enhancing Coastal Natural Capital; (iv) Colombia ([GRT/BB-18615-CO](#), [GRT/BB-18616-CO](#)) Adding Value to Mangroves Conservation in Coastal-City Systems; and (v) Regional ([ATN/BB-19466-RG](#)) Regional Blue Carbon Monitoring, Reporting and Verification Mechanism. The regional Measurement, Reporting, and Verification (MRV) project is expected to standardize the methodology for measuring carbon sequestration in mangrove forests. It also supports the TC on Piloting a Blue Carbon Credit System in Trinidad and Tobago ([ATN/AC-20433-TT](#), [ATN/OC-20434-TT](#)). Additionally, this TC supports the ongoing efforts of Compete Caribbean Pillar 2 through the following TCs: (i) Supporting the Development of the Blue Economy in the Organization of Eastern Caribbean States (OECS) ([ATN/CO-19595-RG](#)), which will deliver a Blue Economy Monitoring and Reporting System with standardized indicators and enhance data collection related to climate change and biodiversity; (ii) Development of the Blue Economy of Belize ([ATN/CO-19166-BL](#)), as the proposed scope of work lays foundational groundwork and complements this TC; and (iii) builds upon lessons learned from the Support to Economic Recovery in the Caribbean through Trade and Investment in Blue Economy (ATN/CO-19236-RG), which has developed investment promotion strategies and provided training in blue economy investment promotion for Belize and the OECS. Also, the Institutions for Development Sector (IFD), in collaboration with the Climate Change Division (CCS) of the Bank, is currently developing a strategy to support client countries in developing and strengthening their MRV systems. The strategy will focus on the measurement, information, and reporting requirements for mitigation, adaptation, and biodiversity actions. The goal is to develop a strategy to enhance measurement and reporting capabilities in LAC, thus enabling an efficient third-party verification process. This strategy will serve as guidance and provide inputs for the execution of this TC.

III. Description of components and budget

- 3.1 **Component 1. Blue carbon assessments of Caribbean countries (US\$300,000).**
The objective of this component is to perform assessments of carbon stocks in each

beneficiary countries, which are representative of the bio-geomorphic settings of the Caribbean, as well as to identify a pipeline of blue carbon projects. The beneficiary countries for this operation are Belize, the Commonwealth of The Bahamas, Jamaica and Trinidad and Tobago. The assessments will use standardized approaches for measuring carbon in mangroves and seagrass beds. It will also include the: (i) identification of technologies; (ii) data collection methods, process, and systems; and (iii) scientific-based and analytical methodologies for conducting measurements systematically and accurately for adequate measurement, reporting, and verification of blue carbon projects. Where applicable, machine-learning and other cutting-edge technologies will be used to refine the carbon stock assessments, facilitating efficiency of replication. The methodology will follow the highest level of carbon stock assessments (Tier 3) in accordance with the Intergovernmental Panel on Climate Change (IPCC) recommendations for countries on key carbon stocks/sources/sinks ([Blue Carbon Initiative](#)). This will include blue carbon activity data such as the types, extent of coverage, and estimates of blue carbon stock, as well as the monitoring of marine species. This assessment will produce a regional blue carbon inventory and provide data to beneficiary countries for generating carbon credits. The data will also inform the development of the regional policy framework and provide an evidence-based approach to promote the possible pooling of blue carbon stocks across multiple jurisdictions.

- 3.2 **Component 2. Development of regional policy framework for blue carbon markets (US\$120,000).** This component will elaborate a draft policy framework for blue carbon markets, which is expected to be approved by the beneficiary countries' governments. The policy framework will be a roadmap to help countries effectively participate in the global carbon market under Article 6 of the Paris Agreement and/or in the voluntary carbon market. The development of the draft policy will involve a review and analysis of the legislative, regulatory and policy environment of countries pertaining to the governance of mangroves and seagrass beds. It will also focus on how benefit sharing could work in the region and the coastal communities, ensuring the inclusion of local communities and stakeholders to maximize co-benefits and thus ensure integrity of carbon credits. It will develop guidelines for providing incentives and investments in the coastal communities where mangrove forests, saltmarshes and seagrasses are predominant. It will also consider recommendations of the MRV Strategy, which is under development by IFD and CCS. The policy will also provide a comprehensive approach to managing coastal ecosystems and coastal communities.
- 3.3 **Component 3. Blue Carbon Policy Dialogue, capacity building and dissemination (US\$180,000).** The objective of this component is to facilitate policy dialogue to build the region's capabilities to enhance measurement and reporting of blue carbon data, thus enabling an efficient third-party verification process for future participation in blue carbon markets; as well as disseminate knowledge. The activities financed by this component are: (i) a policy dialogue (workshops/seminar) that will be held with key targeted audiences including government officials/policy makers, local communities, members of the private sector, sustainable investors, and members of academia ensuring participation of women and diverse groups. These workshops are aimed at receiving feedback on the policy framework and disseminating progress on the activities of the TC; (ii) the design and execution of a capacity building training program for measuring, monitoring, reporting and verification of blue carbon activities for the key targeted audiences. This should enhance local capacity building and human capital, with a focus on gender and social inclusion, targeting 10 people in each country, with at least 4 being women; (iii) the design and implementation of a

communication strategy that will position the issues of measurement, monitoring, reporting, and verification of blue carbon activities and disseminate knowledge and raise awareness about blue carbon markets and blue economy activities in Caribbean countries; and (iv) the technical assistance to beneficiaries countries for adequate planning and monitoring of the TC activities, such as: reviewing deliverables from different consultancies developed by the TC, proposing dissemination activities and knowledge products, coordinating the organization of events and workshops, among other tasks.

- 3.4 The total budget of the TC amounts to US\$600,000 of which the Strategic Development Program (OC SDP Window 2) - Institutions (W2C) will finance US\$200,000, the OC SDP Window 2 - Sustainability (W2A) will finance US\$200,000, and the NDC Pipeline Accelerator Multidonor Trust Fund (ACL) will finance US\$200,000, as follows:

Indicative Budget

Component	Activity	IDB/Fund Funding (W2C)	IDB/Fund Funding (W2A)	IDB/Fund Funding (ACL)	Total Funding
Component 1	Blue Carbon assessments and pipeline identification of blue carbon projects	US\$100,000	US\$100,000	US\$100,000	US\$300,000
Component 2	Development of regional policy framework for Blue Carbon Markets	US\$40,000	US\$40,000	US\$40,000	US\$120,000
Component 3	Blue Carbon Policy Dialogue	US\$15,000	US\$10,000	US\$10,000	US\$35,000
	Capacity building training program for MRV of blue carbon activities	-	US\$20,000	US\$20,000	US\$40,000
	Communication strategy, dissemination and knowledge products	US\$15,000	-	-	US\$15,000
	Technical assistance to beneficiaries countries for adequate planning and monitoring of the TC activities	US\$30,000	US\$30,000	US\$30,000	US\$90,000
Total		US\$200,000	US\$200,000	US\$200,000	US\$600,000

IV. Executing agency and execution structure

- 4.1 The executing agency for this TC will be the Inter-American Development Bank (IDB) through the Competitiveness, Technology, and Innovation Division (IFD/CTI) and the Climate Change Division (CSD/CCS); as requested by the beneficiary countries. Two main reasons justify the CTI and CCS Divisions being in charge of the administration, technical supervision of the products, and execution of the operation. First, and pursuant to Annex II of the document "Operating Guidelines for Processing Technical Cooperation and Related Matters" (OP-619-4) of the Bank, due to the express request of the project beneficiaries and based on the Bank's impartiality and institutional capacity. Second, the Bank is the proposed executing agency given its demonstrated

ability to coordinate and motivate action among diverse stakeholders across the region. Additionally, within the context of the Blue Carbon, a highly specialized subject, the Bank possesses the technical expertise needed to ensure the selection and hiring of quality consulting services, and the timely and effective execution of the TC. Since this is a regional technical cooperation, there is no individual entity with the legal capacity to take over the implementation of the technical cooperation. Each entity can only operate within the limits of its national borders; therefore, beneficiary countries seek support from the Bank.¹

- 4.2 The execution and disbursement period will be 42 months and the UDR will be IFD/CTI. All procurement to be executed under this Technical Cooperation have been included in the Procurement Plan (Annex IV) and will be hired in compliance with the applicable Bank policies and regulations as follows: (a) Hiring of individual consultants, as established in the regulation on Complementary Workforce (AM-650) and (b) Contracting of services provided by consulting firms in accordance with the Corporate procurement Policy (GN-2303-33) and its Guidelines. All knowledge products derived from this TC will be the Bank's intellectual property.
- 4.3 The Bank will interact with regional stakeholders that are implementing similar programs in the Caribbean such as the Caribbean Community Climate Change Centre (CCCCC) in Belize to ensure synergy of efforts. The TC will provide support to the beneficiary countries working in close collaboration with lead ministries, agencies and departments in the respective countries for climate change and blue carbon policy initiatives, as follows: The Bahamas working in close collaboration with the Climate Change and Environmental Advisory Unit in the Office of the Prime Minister, and the Ministry of Finance; the Government of Belize through the Ministry of Blue Economy and Disaster Risk Management as well as the Ministry of Finance, Economic Development, and Investment; the Government of Jamaica in collaboration with the Ministry of Economic Affairs and Job Creation through the Climate Change Division, the Planning Institute of Jamaica (PIOJ) and the Ministry of Finance and Public Service (MOFPS); the Republic of Trinidad and Tobago through the Institute of Marine Affairs and the Ministry of Planning and Development.

V. Major issues

- 5.1 A key risk in performing assessments of carbon stocks is the availability to gather data for measuring carbon in mangroves and seagrass beds. To mitigate this risk, the involvement of all key ministries and agencies across the beneficiary countries will be required to gain access to carbon stocks and to collect data and useful information. This, in turn, will help mitigate any potential constraints related to data access for the training program, which will also enhance local capacity building and human capital to increase measurement and reporting capabilities of blue carbon data.
- 5.2 Another anticipated risk is the multi-agency input required, as some activities in this project will need the involvement of several public and private sector entities and stakeholders. To mitigate this risk, all relevant departments and agencies will be included in stakeholder consultations, ensuring frequent and effective communication to maintain cooperation during the execution of consultancies.

¹ To date, the Banks hasn't received the letters of Non-Objection for Belize and The Bahamas. No TC activities will be financed in any of these countries until the corresponding request or non-objection letter is received.

- 5.3 There is a risk regarding the need for a high level of participation by various stakeholders in the development of the policy framework for blue carbon markets, which would help increase ownership and buy-in for the policy framework and increase support for its approval and implementation. To mitigate this risk, it is crucial to facilitate the policy dialogue among key stakeholders at various levels, including government officials/policy makers, local communities, members of the private sector, sustainable investors, and members of academia, which is a key activity of this TC.

VI. Exceptions to Bank policy

- 6.1 No exceptions to Bank policy are expected for this TC.

VII. Environmental and Social Aspects

- 7.1 This Technical Cooperation is not intended to finance pre-feasibility or feasibility studies of specific investment projects or environmental and social studies associated with them; therefore, this TC does not have applicable requirements of the Bank's Environmental and Social Policy Framework (ESPF).

Required Annexes:

[Request from the Client_63400.pdf](#)

[Terms of Reference_40158.pdf](#)

[Procurement Plan_10537.pdf](#)