TC Document

I.   Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	CaribData: Caribbean Data-Driven Resilience
▪ TC Number:	RG-T4186
▪ Team Leader/Members:	Grant, Kayla Sharee (IFD/CTI) Team Leader; Mejia-Guerra, Jose Antonio (IFD/ICS) Alternate Team Leader; Dohnert De Lascurain, Sylvia Eva (IFD/CTI); Garcia Nores, Luciana Victoria (INT/RIU); Gian Marco Vasquez (IFD/CTI); Maria Vitali (INT/RIU); Mendoza Benavente, Horacio (LEG/SGO); Sierra Liranzo, Mayrett (IFD/CTI); Wayne Elliott (IFD/CTI); Felipe Nogueira
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	.
▪ Date of TC Abstract authorization:	.
▪ Beneficiary:	National Statistical Offices in Belize, Jamaica, Guyana and Trinidad and Tobago.
▪ Executing Agency and contact name:	University Of The West Indies Cave Hill Campus Subprogramme
▪ Donors providing funding:	OC SDP Window 1 - Regional Public Goods(W1A)
▪ IDB Funding Requested:	US$520,000.00
▪ Local counterpart funding, if any:	US$165,000.00 (In-Kind)
▪ Disbursement period (which includes Execution period):	36 months
▪ Required start date:	
▪ Types of consultants:	Firm; Individual
▪ Prepared by Unit:	IFD/CTI-Competitiveness, Technology and Innovation Division
▪ Unit of Disbursement Responsibility:	CCB/CBA-Country Office Barbados
▪ TC included in Country Strategy (y/n):	No
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2020-2023:	Economic integration; Productivity and innovation

II.   Objectives and Justification of the TC

2.1   In 2010, the world generated approximately 2 Zettabytes (ZB) of digital information. In 2020, the World Economic Forum suggested that this figure had risen to 44 ZB and estimates for 2024 are in the region of 150 ZB. This data is enabling emerging digital technologies – such as Artificial Intelligence (AI), Internet of Things (IoT), Early Warning Systems (EWS), and blockchain-based applications. Digital data has become a multibillion-dollar industry with immense growth opportunities. Despite the importance of data, the Caribbean region has limited quality data to contribute to the development of such technologies. Similar to biases inherent in early technologies due to insufficient data from underrepresented communities (for instance, facial recognition technology in its early stages did not recognize certain complexions and in the design of voice recognition, high pitch voices, mostly associated with women, were not recognized), the Caribbean region needs representative data. One avenue for pursuing this is to drive dialogue for increasing efforts to design and integrate data infrastructure and data sharing policies. Furthermore, concerns over privacy and digital skills capacity remain.

2.2 **Data Availability is a Social Inequity.** According to the Open Data Watch, the Caribbean's data-availability performance in 2020 averaged 39%, against a European average of 65%. The paucity of data in the Caribbean has an impact on everything from disaster risk reduction to climate resiliency to business development to citizen health and security. Existing data in the Caribbean region, such as administrative data, is hard to access, lacks adequate data infrastructure, is in multiple places with weak data sharing protocols, and suffers from quality issues due to inadequate data handling. Cloud storage is costly, there are weak incentives for data sharing, and regulatory protocols gate-keep sensitive data without offering avenues for controlled access. Public institutions are regularly unable to meet the data security demands of recent national data security regulations, which share many similarities with the European Union General Data Protection Regulations (GDPR).

2.3 **Data is a Development Priority.** Prioritizing data infrastructure and data handling[1] training and mentoring will increase the availability and quality of existing data for monitoring and measuring progress on development targets such as the Sustainable Development Goals (SDGs). The SDG Tracker reported limited data for many CARICOM countries in 2017. Governments lack data for guiding regional resiliency programs that address risks associated with climate change, disaster preparedness, and health. Data modelling, data analytics and open-data driven software applications can drive public engagement in the development process and can support wider data strategies for resilient sustainable urban planning and development in Caribbean countries, especially as some countries are piloting moves towards smart cities. Improved data infrastructures can strengthen the innovation ecosystem by engaging the public and giving companies and researchers access to quality public data, facilitating research and innovation that supports growth. Finally, much government data, particularly in health and identity, has been created but remains inaccessible because of privacy concerns. A robust and trusted data security infrastructure would allow the secure sharing of such resources, providing much needed additional evidence for regional development in areas such as climate, gender, and health.

2.4 **Objective.** The project objectives are to improve the infrastructure for data sharing and data resilience at the regional level. The project targets capacity building within National Statistical Offices (NSOs) to increase the quality of existing datasets by providing training and mentoring and to increase the regional data sharing capacity through a communication program led by a focus on data journalism/data stories, and including analysis datathons, workshops and conferencing. Given that Government NSOs utilize public funds to create data for use as a public good, the key public goods created by this project include the following: (i) regionally shared data infrastructure to improve access to data; (ii) a curated series of data stories communicating relevant issues about the region using available but under-utilized data resources, and underpinned by the methods of data journalism; (iii) recommendations for regional data privacy, data security, and data sharing policies; (iv) increased capacity of a

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[1] Data handling is the process of collecting, organizing and preserving data, following fast-changing best practises in data security, storage, and curation. The associated fields of data analytics and data communication are increasingly complex, requiring diverse skills for preparing and communicating complex findings to lay audiences.

network of NSOs and other data producers to improve data handling processes and to implement best-practices in data sharing to increase the accessibility of regional data to analyze; (v) the project will implement datathons to encourage community-led data story-telling using underutilized regional data resources; and (vi) a regional roadmap for increasing investment in data infrastructure and expanding data themes related to Caribbean health, climate adaptation, and gender. The data infrastructure can be extended to additional countries and other subject matters with low additional costs thereby supporting a wider Caribbean rollout with appreciable economies of scale. An increase in subject matter/datasets and the greater the geographical coverage of the data resources, lead to a collective resource that can in put into emerging technologies, with the potential to guide the rapidly expanding markets in AI and machine learning, and could eventually offer regionally representative data, without many of the biases introduced by using data from unrepresentative populations.

2.5   **Climate solutions require multisectoral collaborations.** The complex nature of climate change resilience must draw from a wide cross-section of specialist subjects. The data infrastructure – as it builds its data repository – will enable an evidence-base for these multisectoral synergies. It is expected that additional countries will join the regional data governance effort and will implement regional best practices for data privacy, data sharing, and open data policies, thus improving data accessibility. The data impact stories on climate change and health developed through the project will promote the benefits of collaborative multi-sectoral research and partnerships between data providers (such as NSOs and universities) and data users (such as researchers and businesses). More open-data along with communication of the resource will offer spillover opportunities beyond the immediate project goals, including open innovation, multi-sectoral research, evidence-based policy designs, timely reporting on international commitments, and improved technology related business models.

2.6   **Connecting regional data efforts.** This project will improve access to quality data through an interoperable digital mechanism (the CaribData repository) that will house data and will also offer connections to a network of quality-controlled repositories. This project will therefore improve interoperability between entities and the coordination efforts for creating and managing quality data at the regional level[2]. This project builds on the work done by the Bank with NSOs in the Caribbean to promote cooperation and coordination in the production and management of data. Among them "Common Framework for Population Census in CARICOM" (RG-T1200) and "Common Census Framework 2.0 – Support to CARICOM Regionally Coordinated Census Strategy" (RG-T1301). Both projects helped NSOs collaborate in the homogenization and standardization of data generation and management. The Caribbean has also benefited from regional projects from other donors[3], among them the "Project for the Regional Advancement of Statistics in the Caribbean" (PRASC) which with funding

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[2]   The project will support interoperability between countries that have implemented open data initiatives such as the Government of Jamaica's Open Data Catalog (https://data.gov.jm/), Belize's efforts to expand its Belize National Statistical System Portal which was developed with support from the IDB to serve as a hub for the dissemination of several hundred indicators, including SDG indicators, amongst others. Belize has also begun preliminary work towards the development of data sharing protocols for Belize's NSS. The SIB, in partnership with Statistics Canada, held a training session for NSS members, where they were introduced to the concept of data sharing protocols. This project will thus build on these ongoing efforts with the NSOs.

[3]   For instance, Belize developed a "National Strategy for the Development of Statistics (NSDS)" in 2018.

from the Government of Canada supported improving data production and provided statistical capacity building with the technical support of Statistics Canada.

2.7 **Strategic Alignment.** This TC is consistent with the Second Update to the Institutional Strategy (UIS) 2020-2023 (AB-3190-2) as it is strategically aligned with the development challenge of economic integration, as it promotes regional cooperation among participating countries, and productivity and innovation and to the strategic goal of encouraging the use of digital technology. The TC is also aligned with the cross-cutting themes of climate change as it will contribute to the develop of data driven research emanating from the project activities. The project is aligned with the priorities defined in the Innovation, Science and Technology Sector Framework Document (GN-2791-13) as it relates to economies being able to take full advantage of the potential of the digital economy through increasing access to data. The TC is aligned with the Window 1A of the Strategic Development Program financed with Ordinary Capital (GN-2819-14) which includes the Regional Public Goods Initiative, as it promotes regional cooperation among participating countries to tackle a common development challenge. Data infrastructure is an important development issue aligned to the CCB's infrastructure for development initiative. This project is aligned with the following country strategies: (i) the 2022-2025 Country Strategy for Belize (GN-3086) as it aims to support digital transformation through increasing regional data sharing and access to data; (ii) the Jamaica Country Strategy (GN-2868) in the strategic area of increasing public sector efficiency by promoting data access and sharing guidelines; (iii) the 2021-2025 Country Strategy for Trinidad and Tobago (GN-3071) under its objective to enhance the digital delivery of services through improved data access; and (iv) the 2017-2021 Country Strategy with the Cooperative Republic of Guyana (GN-2905) under its objective to strengthen public sector institutions and planning by enhancing the use of data.

III. Description of activities/components and budget

3.1 **Component 1. Data Infrastructure and Roadmap for Data Resiliency (US$170,000).** This component will finance the following activities expected to contribute to an improved regional data ecosystem: (i) a systems analysis of the existing data infrastructure and capabilities of The UWI and the NSO beneficiaries of the project; (ii) the design and implementation of a cloud-based infrastructure tool and associated governance for regional data sharing; (iii) training to NSOs to provide guidance on how to participate in the proposed digital frameworks; and (iv) design of a regional roadmap to expand data infrastructure in the Caribbean and to integrate other Caribbean countries by incorporating lessons learned from this project. The roadmap will include the expansion of data themes and a resource mobilization strategy for generating revenue that will support ongoing hardware and software investments, training, and a human resource strategy. Expected outputs include: (i) assessment of existing data infrastructure; (ii) design of an infrastructure tool for regional sharing of data resources; (iii) training workshops to NSOs; and (iv) roadmap strategy.

3.2 **Component 2. Data Science Training and Knowledge Generation (US$140,000).** This component will finance the following activities that will build regional capacity for analysing, sharing and communicating data: (i) the implementation of a data science course that will train NSOs in aspects of data wrangling, data analysis, data curation, data sharing, and data communication. Selection criteria for participations from the NSOs will consider gender and expertise. Exact subject matter will be guided in

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collaboration with beneficiary organizations. The designed courses will eventually become part of a wider UWI certification in Data Science, and so must meet University standards for course creation; (ii) at least one regional datathon conference (CaribDatathon) led by the NSOs and The UWI that will result in a series of data stories with pre-organized themes around disaster preparedness, climate resilience, health, and gender. Participants (individuals or teams) will be required to solve practical problems through the application of data science tools and techniques, to generate regional insights and potential solutions. The datathon will promote regional data re-use, cross-discipline collaboratives, and data innovation; (iii) publication of competitively selected data stories created during the datathon. Expected outputs include: (i) implementation of a training workshop/course in data science; (ii) at least one datathon organized; and (iii) the publication of a monograph with curated series of data stories on priority issues in climate change, health, and gender.

3.3 **Component 3. Data Guidelines and Policies (US$135,000).** This component will finance the following: (i) a gap analysis of data handling, data sharing, data privacy, data security, and open data policies of the project's beneficiary countries; (ii) based on the results of the gap analysis and in collaboration with Government stakeholders, the design of policies and guidelines (such as open data, data privacy and data sharing) for the four project beneficiary countries; and (iii) data audits and curation exercise to identify and assess the quality and utility of data resources from the NSOs , UWI, and other entities across the region that can be utilized by the project under Components 1 and 2 . The project team and NSOs will coordinate with regional bodies in exploring the potential for regional data standards, especially as it relates to compliance with existing global governance (i.e. GDPR). Expected outputs include: (i) data policy and guidelines gap analysis conducted for 4 beneficiary countries; (ii) 4 draft data policies and guidelines developed; and (iii) data audits and curation completed.

3.4 **Component 4. Project Coordination, Communication, and Evaluation (US$75,000).** This component will finance the following: (i) project coordination support of the RPG program; (ii) design and implementation of a communication strategy; (iii) a final project evaluation to assess the impact of the project; and (iv) financial audit. Expected outputs include: (i) annual project reports; (ii) communication strategy designed and implemented; and (iii) final evaluation and audit.

3.5 The total cost of this TC will be US$520,000.00 to be funded by Window 1A of the Strategic Development Program financed with Ordinary Capital (GN-2819-14) that includes the Regional Public Goods Initiative. In-kind contribution provided by The University of the West Indies amounts to US$165,000.00, for a total project amount of US$685,000.00.

Indicative Budget (In US$)

Activity/Component	Description	IDB/Fund Funding	Counterpart Funding	Total Funding
Component 1. Data Infrastructure	Consulting firm to develop data infrastructure and repository	170,000	10,000	180,000
Component 2. Data Science Training and Knowledge Generation	Consulting firms to provide data analytics training	140,000	110,000	250,000

Component 3. Data Guidelines and Policies	Consultants to develop data guidelines and policies	135,000	30,000	165,000
Component 4. Project Coordination, Communication, and Evaluation	Consultants to support project coordination and communication.	40,000	15,000	55,000
	Public Awareness Campaign and Marketing Activities	5,000	0	5,000
	Audit	10,000	0	10,000
	Final Evaluation	20,000	0	20,000
Total		520,000	165,000	685,000

IV.   Executing agency and execution structure

4.1   **The Executing Agency (EA)** will be the University of the West Indies (UWI) Cavehill Campus. The UWI is a regional institution that has executed regional IDB- financed projects such as RGT1276 ("Regional Non-Communicable Diseases Surveillance System"), ATN/OC14749-RG ("Caribbean Regional Entrepreneurial Assets Commercialization Hub"), and ATN/ME-13186-TT ("Development and Implementation of a Local Economic Development (LED) Framework for Regions with Extractive Industries"). Lessons learned from The UWI's role as an EA include the following: (i) the need for high level commitment at The UWI, especially in case of leadership changes within the regional entity, to coordinate resources towards implementation and to coordinate the support from the Bursary during implementation; (ii) simplification of the number of procurements and payments is important to limiting the demand on The UWI's bursary and administrative team; (iii) having a strong coordinator within The UWI to advance project milestones and to coordinate implementation; (iv) sharing lessons learned between the UWI campuses in project execution experiences;[4] and (v) continuous pro-active support and guidance from the IDB team to overcome bottlenecks and challenges during execution and to proactively support The UWI to manage procurement, monitoring, and reporting to the Bank. The UWI will put together a project team comprising of data experts and part time Administrative Support. This initiative and commitment follow a December 2021 Memorandum of Understanding (MoU) between the IDB and the UWI, which envisions joint research, initiatives, and exchange of knowledge to help drive economic and social recovery and growth in the region. The MoU focuses particularly on strategic initiatives linked to data and digital transformation, climate change and regional resilience, and so aligns well with the CaribData program of work. The UWI sees the CaribData initiative as a significant opportunity to strengthen ties with the IDB Group and also for contributing to the #BIDAcademy learning hub through the CaribData training development initiative.The EA will be responsible of the operational, procurement, financial management and disbursement arrangements necessary for the adequate implementation of the project.

4.2   **Project Steering Committee.** Each beneficiary country will appoint one representative (National Focal Point) from each NSO (Belize, Guyana, Jamaica, Trinidad & Tobago) to sit on the Project Steering Committee (PSC). The focal points will be responsible, at

a national level, for facilitating project execution, and helping build consensus with stakeholders. Representatives from the IDB (which include representatives from its country offices benefiting from the project) and as well as other project partners will act in an advisory role. The EA will be a Secretary to the PSC. The PSC will meet regularly to set the agenda of the project based on the project technical cooperation document and its annexes, decide on strategic matters and the direction of the project, and provide technical inputs. The PSC will select a Chair and Vice-Chair. NSOs across the Caribbean are mandated to provide accurate, timely and reliable statistical information of a high quality and broad scope, facilitating analysis and dissemination of such data, and promoting their use in effective and efficient decision making. The NSOs that will form the PSC thus have experience in producing national data and, under various initiatives such as the CARICOM Secretariat Regional Statistics, have cooperated at the regional level for good standards in providing statistics at the national level. This proposal seeks to strengthen NSOs in their work in open data, data privacy, data sharing, and to improve the relationship between NSOs, universities, researchers, firms, policymakers, and other data users to achieve more open, interoperable, and accessible regional data.

4.3 **Execution period and disbursements.** The project execution period will be 36 months effective from the date of the signature of the agreement on behalf of both the Bank and the EA. As a condition for the first disbursement, the executing agency will be required to present evidence of the establishment of the PSC.

4.4 **Procurement.** The procurement of goods and non-consulting services will be carried out in accordance with "Policies for the Procurement of Works and Goods financed by the IDB" (GN-2349-15) and the contracting of consulting services will be carried out in accordance with the "Policies for the selection and contracting of consultants financed by the IDB" (GN-2350-15). In accordance with a Technical Cooperation Agreement, signed between the IDB and the UWI, the UWI will act as the Financial Agent for the purposes of administering the grant resources that will finance the implementation of the project. The intellectual property of the knowledge will belong to the Bank. Notwithstanding, the Bank may grant a license for use of beneficiary countries.

4.5 **Reporting.** The UWI will present to the Bank Semi-Annual Progress Reports regarding the implementation of the activities of the Project to be submitted within sixty (60) days after the end of each Semester. In addition, a final report is expected to be submitted within six months after the completion of the last project activity. The final report will present to the Bank the degree of fulfillment of the outputs and progress toward the outcomes of the Results Matrix. The final evaluation will assess the project's achievements as it relates to outcome and the sustainability of the outcomes including identify lessons learned and opportunities for improvement. The evaluation will inform mechanisms for improving the incentives for coordinating action around creating, managing, and sharing quality data. Both quantitative and qualitative data will be collected throughout the project, using a set of pre-defined Key Performance Indicators (KPIs) to feed into the evaluation. KPI baseline data will be collected. Ethical standards will be set and maintained for data collection, analysis, management, and communication, with ethical review by regional ethics committees as required. The evaluation will follow the RE-AIM framework, with systematic assessment of the project's Reach, Effectiveness, Adoption, Implementation, and Maintenance. The final evaluation must be carried out based on the terms of reference previously agreed upon with the Bank and presented no later than 90 days after the last disbursement of

resources from the Bank. The financial audit report of the project is to be submitted within ninety (90) days from the last disbursement of resources from the Bank.

V. Major issues.

5.1 **Risks.** One key risk may be the lack of available datasets, especially as it relates to environmental, climate change, and gender disaggregated data. Given that the project is not intending to create new datasets, to mitigate against this risk, a consultancy will be procured to conduct data audits and data curation to identify these datasets and the gaps in data that exists. Furthermore, the roadmap strategy will identify opportunities for expanding to new data themes, which must include consideration for financing new dataset creation. NSO's commitment to utilizing the regional data sharing platform developed under this TC is a foreseeable risk. The PSC will be established with formal terms of reference to mitigate against this risk by having the NSO's steer the project's direction. NSOs have supported the design of the project including problem definition and identification of areas for collaboration. The NSOs will continue to input on the solutions developed.

5.2 **Sustainability.** Ultimately, this project will bring added value to how data providers (and other existing data sharing and open-data efforts) coordinate and are incentivized to collaborate by creating a network of "data hubs" initially in each beneficiary country of the project. The roadmap strategy designed under Component 1 provide recommendations for expanding to additional countries. Organically grown collaborations increase opportunities for continued data reuse, enhancing sustainability options. The project will offer a local best-practice alternative to data providers and users, encouraging increased regional data resources and ensuring long-term data sovereignty – an emerging theme for enhancing data for development. Through training workshops supported by tailored longer-term mentoring, the project will build lasting regional data handling capacity within NSOs in the region responsible for building the regional infrastructure and data sharing. It is expected that institutional change will result from the project's knowledge outputs and training. Through analysis datathons, the project will promote regional data re-use, cross-discipline collaboratives, and data innovation. An open-data conference will target regional data-providers, encouraging open-data curation instead of the now prevalent restrictive data practices. The Executing Agency has a deep knowledge-transfer experience and skillset and will draw on these skills throughout the project. It will (for example) leverage Doctoral studentships and internships to efficiently meet project goals whilst transferring knowledge to young data scientists from the region. It will leverage its considerable expertise in remote education methodology to develop sustainable training and mentoring programs strengthened by recognized regional qualifications.

5.3 The RPG incorporates partners that have implemented previous data projects and builds on lessons learned by these projects, such as the UWI led "Caribbean Open Institute" (COI) which focuses on open development approaches to inclusion, participation and innovation within the Caribbean, using open data as a catalyst. Finally, the RPG comprises activities that can be used for future revenue generation to ensure financial sustainability, such as the NSOs providing data as a service which could include data audits, fee-for-service analytics, and customized training.

VI. Exceptions to Bank policy

6.1 There are no exceptions to Bank policy.

VII.   Environmental and Social Strategy

7.1   This TC will not finance feasibility or pre-feasibility studies of investment projects with associated environmental and social studies; therefore, it is excluded from the scope of the Bank's Environmental and Social Policy Framework (ESPF).

Required Annexes:

Request from the Client - RG-T4186

Results Matrix - RG-T4186

Terms of Reference - RG-T4186

Procurement Plan - RG-T4186