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MULTILATERAL INVESTMENT FUND

TRINIDAD AND TOBAGO

CLOSE THE LOOP CARIBBEAN

(TT-T1135, TT-G1004 AND TT-G1005)

DONORS MEMORANDUM

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PROJECT SUMMARY

TRINIDAD AND TOBAGO

The problem that is being addressed is the volume of organic waste that reaches landfills in Trinidad and Tobago which breaks down releasing methane, a hazardous greenhouse gas that is 28 times more potent than CO₂. Organic waste represents a significant portion of total waste entering the country's landfills, estimated in a 2017 IDB study at 27% of waste disposed¹. However, with proper treatment, organic waste can be modified into several value-added products that solve related environmental challenges. The objective of the Close the Loop Caribbean project is to pilot a private sector led system to reduce volume of organic waste reaching landfills in Trinidad and Tobago.

The model will test and scale a commercially sustainable system to collect, process and reuse organic waste to leverage its value in regeneration of lands and in sustainable and climate smart agriculture over time. The project will be implemented by three primary project partners, Hello Green Products Ltd, as the Executing Agency, IAMovement as a civil society organization that has experience in use of organic waste in regeneration of degraded lands, and Tucana Ltd a commercial company that has invested in Trinidad and Tobago's first industrial scale compost production facility. Key elements of the solution are: (i) creation of systems, capacity, and partnerships for collection of organic waste, (ii) processing of waste as compost that will be used for land rehabilitation and regeneration, (iii) development of a carbon trading model to measure, verify and trade credits for carbon sequestration achieved, (iv) research and development in treatment and use of a range of other organic waste streams and green technologies and (v) development of a sustainable business model for Close the Loop. The project is innovative as it represents the first scalable private sector led circular model to address two important issues in Trinidad and Tobago: (i) the environmental and health hazards generated by untreated organic waste reaching the country's landfills; and (ii) the need to find sustainable and climate smart solutions for land regeneration, particularly given the impact of the country's extensive extractive industries including quarrying and mining.

Key outcomes include (i) Diversion of 10,000 metric tonnes of organic waste from landfills over the project execution period, (ii) Avoidance of 182 metric tonnes of methane production due to the diversion and conversion of organic waste, (iii) CO₂ equivalent offset of 4,550 metric tonnes attributable to diversion of organic waste from landfill, (iv) Monetization of services to cover 100% of Close the Loop's direct operating costs by 2026 and (v) completion of evidence based consultations with national stakeholders on the impact Vetiver grass as a green technology to reduce the presence of leachates and other chemical contaminants in soil and groundwater in or near landfills.

Poor and vulnerable populations in both rural and urban communities² of Trinidad and Tobago residing near landfills, as well as close to degraded quarry lands in Northeast Trinidad are the primary beneficiaries of the project. Two hundred persons from these communities will be trained in waste collection and land regeneration using compost and will benefit from livelihood opportunities generated through the project.

The project has a total cost of US\$1,825,600, of which US\$375,000 (21%) will be provided by IDB Lab, through a Contingent Recovery Investment Grant (CRIG) in the sum of US\$200,000 and a Non-Reimbursable Technical Cooperation (NRTC) in the sum of US\$175,000. GEF will provide a non-reimbursable Investment Grant, (IG) of US\$353,600 (19%) and US\$1,097,000 (60%) will be provided in counterpart resources.

The project is aligned with the IDB Group 2nd Update to the Institutional Strategy and specifically the cross cutting thematic area Addressing Climate Change and Environmental Sustainability

¹ A waste composition assessment found that organic wastes consisted of 27% of waste composition – "Solid Waste Management Strategic Plan for Trinidad and Tobago" Inter-American Development Bank January 2017

² Examples of communities include Sangre Grande, and communities neighboring landfill sites in Trinidad and Tobago

which emphasizes the need to decrease greenhouse gas (GHG) and the pursuit of opportunities for climate resilience and adaptation to climate impacts. The project is also aligned with IDB Lab's focus on essential services and cross cutting areas of climate crisis, in particular the development of sustainable and scalable circular economy models that respond to challenges of the climate crisis, and in this case specifically, the issue of waste reduction and GHG reduction that can be achieved through innovation and private sector led investment in the conversion and application of organic waste for land regeneration.

ABBREVIATIONS

CCB	Caribbean Countries Department
COF	Country Office
CRIG	Contingent Recovery Investment Grant
CTL	Close the Loop Caribbean
CTT	Country Office Trinidad and Tobago
DICI	Assessment of Integrity and Institutional Capacity (DICI)
ESG	Environmental and Social Governance
GEF	Global Environmental Facility
GHG	Greenhouse Gas
IDB	Inter-American Development Bank
IDB Lab	Multilateral Investment Fund (MIF)
IDBG	Inter-American Development Bank Group
IG	Investment Grant
MoU	Memorandum of Understanding
NDC	Nationally Determined Contribution
NRTC	Non-Reimbursable Technical Cooperation
PSR	Project Status Report
SDG	Sustainable Development Goals
SIDS	Small Island Developing States
T&T	Trinidad and Tobago
UNFCC	United Nations Framework Convention on Climate Change

PROJECT INFORMATION

TRINIDAD AND TOBAGO

CLOSE THE LOOP CARIBBEAN

(TT-T1135, TT-G1004 AND TT-G1005)

Country and geographic location:	Trinidad and Tobago		
Executing agency:	Hello Green Products, Ltd		
Focus area:	Essential Services (Circular Economy Solutions) and Climate Crisis		
Coordination with other donors/Bank operations:	The Global Environmental Facility is financing this operation via an investment grant as part of the Blue Tech 4 Waste Challenge launched jointly with IDB Lab under GEF 10258		
Project beneficiaries:	Poor and vulnerable populations in both rural and urban communities ³ of Trinidad and Tobago residing near landfills as well as close to degraded quarry lands in Northeast Trinidad are the primary beneficiaries of the project. Two hundred persons from these communities will be trained in waste collection and land regeneration using compost and will benefit from livelihood opportunities generated through the project, at least 50 of these beneficiaries are expected to be women.		
Financing:	Non-Reimbursable Technical Cooperation (NRTC): TT-T1135	US\$175,000	10%
	Contingent Recovery Investment Grant (CRIG) TT-G1004	US\$200,000	11%
	Total IDB Lab funding:	US\$375,000	21%
	Other: Global Environmental Facility Investment Grant TT-G1005 from RG-01674 ISLANDS: Caribbean Incubator Facility ⁴	US\$353,600	19%
	Counterpart:	US\$1,097,000	60%
	Total project budget:	US\$1,825,600	100%
Execution and disbursement periods:	36 months for execution and 42 months for disbursement for the IDB Lab NRTC and 36 months for disbursement of the IDB Lab CRIG.		

³ Examples of communities include Sangre Grande, and communities neighboring landfill sites in Trinidad and Tobago

⁴ GEF resources for this operation (TT-G1005) will be channeled through the operation RG-O1674 ISLANDS: Caribbean Incubator Facility which was approved by the Board of Executive Directors on September 2, 2021 (AT-1558)

Special contractual conditions:	For the NRTC (TT-T1135) the following will be conditions precedent to first disbursement: (i) Signing of an MoU by Hello Green Products Ltd (Executing Agency) and key project partners IAMovement and Tucana Ltd outlining their respective roles in project implementation and financing and (ii) Signing of a service agreement between Hello Green Products Ltd and Tucana Ltd for supply of compost and (iii) confirmation that the composting facility operated by Tucana Ltd has been commissioned
Environmental and social impact review:	This operation was screened and classified in accordance with the IDB's Environmental and Social Policy Framework (document GN2965-21) on September 30 th , 2022. Given the limited impacts and risks, the project has been proposed as a category C operation.
Unit responsible for disbursements:	CCB/CTT

I. THE PROBLEM

A. Problem description

- 1.1 The problem that is being addressed is the volume of organic waste that reaches landfills in Trinidad and Tobago which breaks down releasing methane, a hazardous greenhouse gas that is 28 times more potent than CO₂ in terms of climate change impact.
- 1.2 Additionally, organic waste may also contain hazardous chemicals, pathogens and antibiotics which are released into soil and groundwater as these materials break down and can detrimentally impact human health and the surrounding ecosystems. Recognizing these adverse effects, some cities have implemented organic waste disposal bans to prevent these materials from ending up in landfills.⁵ In the Global South, food and organic wastes account for around 80% of municipal waste generated, with most of this waste stream dumped in landfills⁶. This mirrors the current scenario in Trinidad and Tobago (T&T) as organic waste represents a significant portion of total waste entering the country's landfills, estimated in a 2017 IDB study at 27% of waste disposed⁷. However, with proper treatment, organic waste can be modified into several value-added products, as well as become the solution to several other related environmental challenges using a circular economy approach. In T&T organic waste stream represents a substantial portion of waste materials that can be recoverable⁸ and has inherent value if diverted from traditional landfills/other waste disposal sites.
- 1.3 In the absence of a structured national program that facilitates the separation of organic, as well as other waste materials at the source, continued dumping of organic materials at landfills has led to several adverse effects locally, including but not limited to, loss of valuable space at disposals sites and loss of potential revenue from utilization of organic waste. T&T landfills are currently at or over capacity and this exerts extra pressure requiring landfill-footprint expansion, and where landfill fires⁹ are common, fires set are accelerated by the high presence of organic waste which releases highly flammable methane gas. With these landfill fires, burning and breakdown of various non-organic wastes release harmful emissions affecting air-quality, and leachates which cause heavy contamination in underlying groundwater and the rivers, wetlands and marine environments which surround many of the landfill sites in the country.

⁵ Massachusetts, Vermont, Connecticut, and other states have implemented such bans [What is Organic Waste and How Should it be Handled? - Miller Recycling](#)

⁶ [How to manage food and organic waste in Global South cities \(c40knowledgehub.org\)](#)

⁷ A waste composition assessment found that organic wastes consisted of 27% of waste composition – “Solid Waste Management Strategic Plan for Trinidad and Tobago” Inter-American Development Bank January 2017

⁸ A waste characterization study for Trinidad and Tobago indicated at least 84% of items disposed of in landfills were recyclable “An Integrated Solid Waste/Resource Management Policy for Trinidad and Tobago” Ministry of Local Government August 16th, 2013

⁹ An article published by the National Daily Express newspaper on May 17, 2016, quoted the Minister of Public Utilities as stating that between the period October 2011 -October 2015 there were at least twenty-two serious fires at the country's three government managed landfill sites.

- 1.4 State resources in T&T are allocated towards bulk collection of waste which is disposed of at the country's landfills, with minimal financing or systems dedicated to support recycling efforts and zero incentives for at home sorting and separating of materials, while the curbside collection system comingles all waste materials. However, with increasing waste volumes¹⁰ and saturation of existing landfill sites, innovative solutions are required to divert organic waste streams into revenue generating models.
- 1.5 These challenges and realities led the team at Hello Green Products Ltd ("Hello Green") to identify ways to appropriately divert organic wastes streams into more productive and sustainable uses by implementing a collaborative social entrepreneurship/private sector led approach which will address several distinct, yet interlinked environmental and waste management challenges, particularly within the setting of a small island developing state. Hello Green has named this model "Close the Loop Caribbean" (CTL) to reflect the circular nature of this solution.
- 1.6 Beneficiaries: Poor and vulnerable populations in both rural and urban areas¹¹ of Trinidad and Tobago are primary beneficiaries of the project through (i) a reduction in environmental hazards associated with dumping of organic waste, especially in low-income fence line communities bordering landfill sites and (ii) training and income generating opportunities in the collection and conversion of organic waste as well as deployment of compost and other products derived from this waste stream. Training and Incentive programs will provide income to rural, coastal, and urban communities and farmers capturing waste such as brush cuttings, sargassum seaweed, invasive African-snails, and other organic waste streams. Quarry rehabilitation activities currently led by the project partner IAMovement employ both rural community members from east-Trinidad, and migrants, and these income generation opportunities will grow for beneficiaries as rehabilitation of degraded quarry lands and other sites utilizing compost scale up through the project. Most local community members currently employed/engaged in waste collection and land rehabilitation and regeneration are of Afro-descent, and female, living in low-income rural communities; and this demographic among new beneficiaries is expected to be similar. An estimated 100 beneficiaries will participate in training and sensitization activities with a further 100 persons, of which at least 50 (50%) are expected to be women, will access these increased income generation opportunities in land rehabilitation and regeneration of degraded areas that will be offered to trained community members engaged in these activities under the project.

¹⁰ Waste generation is expected to average between 1900 to over two thousand tons per day for Trinidad and Tobago from present day until 2040 Solid Waste Management Strategic Plan for Trinidad and Tobago" Arcadis Design and Consultancy for natural and built assets January 2017. Study for IDB

¹¹ Examples of communities include Sangre Grande, Paramin, communities neighboring landfill sites in T&T. e.g., Forres Park, Guanapo, Beetham etc.

- 1.7 Organizations¹² in Trinidad and Tobago will also benefit from the model which includes the provision of subscription services for collection and sustainable conversion and utilization of organic wastes generated by these entities, as well as opportunities to partner on environmental, social and governance (ESG) investments relating to regeneration of land. Farmers and companies in the agricultural sector will benefit from access to sustainable substitutes (compost and compost inoculants) which can replace costly and environmentally harmful chemical fertilizers over time. Additionally, the state agency responsible for solid waste management (Solid Waste Management Company Limited - SWMCOL) will benefit, as volumes of organic waste transferred to landfills decrease,
- 1.8 Fence line communities living close to landfills, as well as the broader national population will benefit from the reduction of harmful/toxic emissions from landfill fires, including particulate matter and gases, deteriorating air quality and visibility, leaching effects of organic waste into waterways affecting biodiversity and environmental health in and around these sites, as well as overall reduction in methane gas emissions which supports global goals on carbon mitigation and climate action.

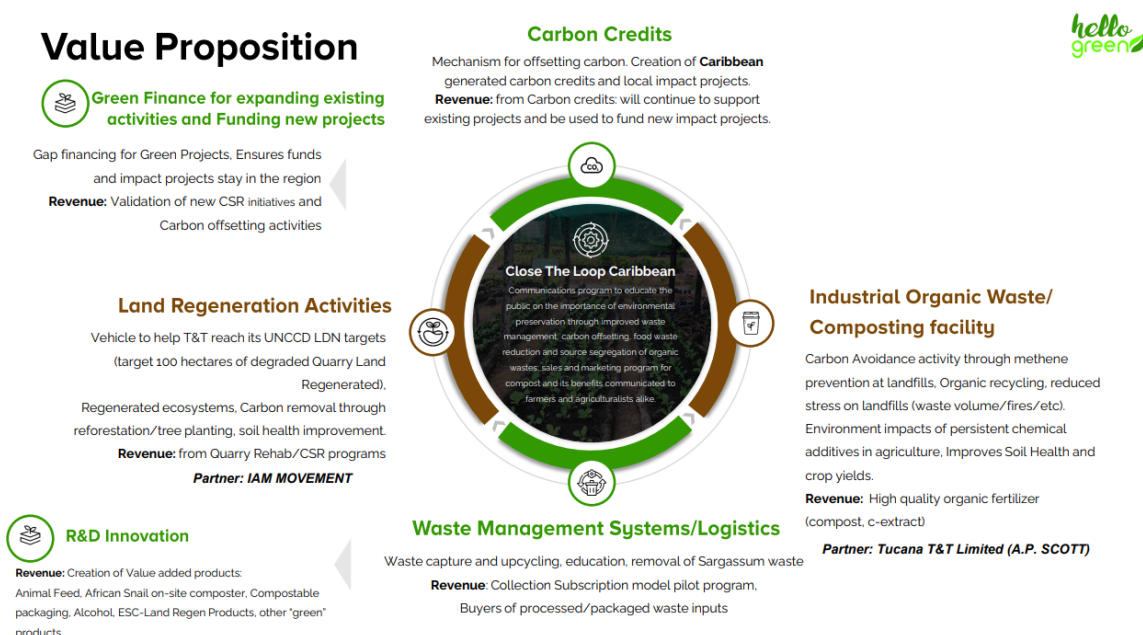
II. THE INNOVATION PROPOSAL

A. Project description

- 2.1 The objective of the project is to pilot a system to reduce volume of organic waste reaching landfills in Trinidad and Tobago and redirect it to delivery of value-added products and services.
- 2.2 The model will test and scale a commercially sustainable system to collect, process and reuse organic waste to leverage its value in regeneration of lands and in sustainable and climate smart agriculture and horticulture over time. The project will be implemented by three partners, Hello Green Products Ltd, as the Executing Agency, IAMovement as a civil society organization that has experience in use of organic waste (brush cuttings) in regeneration of degraded quarry lands, and Tucana Ltd a commercial company that has invested in industrial scale compost production. These partners will join efforts to apply the “Close the Loop” circular economy solution to capture and leverage the properties of various organic waste streams for regeneration of lands and creation of new green livelihoods, particularly in rural and other low-income communities in Trinidad and Tobago. Essentially the model involves (i) creation of systems, capacity, and partnerships for collection of organic waste, (ii) processing of waste as compost that will be used for land rehabilitation and regeneration, (iii) development of a carbon trading model to measure, verify and trade credits for carbon sequestration achieved, (iv) research and development in treatment and use of a range of organic waste

¹² Organizations include regional corporations responsible for roadside and public park maintenance as well as transport and disposal of brush cuttings from households and public sector maintenance crews in the first instance, and as the project develops, public and private markets restaurants, supermarkets, green grocers, food outlets and other entities that generate significant amounts of organic waste and have no sustainable manner to dispose of this waste material

streams and green technologies for climate resilience and sustainable use in food production and in soil and land rehabilitation, and (iv) development of a sustainable business model for Close the Loop via sensitization and commercial delivery of products and services. Each element of the model will bring opportunities for revenue generation. These include monetization of innovative products, sale of carbon offsets from quarry rehabilitation and composting activities, sale of high-quality organic compost by products, waste collection subscription model and the monetization of Environmental, Social and Governance (ESG) impact projects that citizens and firms can participate in. Revenues generated will be re-invested as financing for new projects and expansion of operations where environment and social benefits outweigh economic benefits. The following diagram depicts the value proposition of the model:



2.3 Innovation. The project is innovative as it represents the first scalable private sector led circular model to address two important issues in Trinidad and Tobago: (i) the environmental and health hazards generated by untreated organic waste reaching the country's landfills; and (ii) the need to find sustainable and climate smart solutions for land regeneration, particularly given the impact of the country's extensive extractive industries including quarrying and mining. The Close the Loop Caribbean model focuses not just on the environmental sustainability but also on commercial sustainability so that funding proposed can catalyze a system that will scale beyond the period of financing by IDB Lab and the GEF. The project is organized in the following key components:

2.4 Component I: Organic Waste Streams Capture (USD 226,900, GEF USD 93,300, Counterpart USD 133,600) The objective of this component is to catalyze and grow the collection of organic waste streams, starting with brush cuttings and expanding to other organic waste such as food and sargassum seaweed.

- 2.5 Project resources will be allocated towards optimizing and scaling the co-ordination capture, transfer, collection, and management of organic waste diverted from the country's landfills. The executing agency, together with the technical partners will provide training and capacity building for individual and organizations that collect waste to facilitate collection and rerouting of organic waste from landfills to the CTL composting facility or directly to quarry rehabilitation sites managed through the project for weighing, quality management and conversion. The team has already commenced collection of organic materials including trees/debris and roadside grass cuttings from municipal corporations, spent grain from local breweries and sargassum seaweed from rural seaside communities. Additionally, CTL's team has already begun engaging public as well as private companies that generate and transport organic waste to participate in this process. This component will require a significant effort in stakeholder and logistics management. Over time it is expected that companies and public organizations in Trinidad and Tobago will contract CTL for waste removal. These companies will be engaged via the creation of a waste collection subscription model which will also feature an ESG element to incentivize participation in the absence of legislative mandates. However, in the initial stages as the model is developed, this service will be provided at no direct cost for training and logistical / co-ordination services.
- 2.6 To support these efforts the executing agency will allocate financing to contract a waste stream outreach and coordination consultant, purchase of tools and materials to support waste collection and sorting, as well as logistical support for the transport of collected waste material.
- 2.7 The expected outputs for this component will include (i) 20 private and public organizations formalize partnerships with CTL for waste capture and transportation and (ii) 100 individuals trained and engaged in organic waste management and treatment.
- 2.8 **Component II: Carbon Sequestration Projects: Land Generation and Industrial Scale Composting (USD 745,200: IDB Lab CRIG 105,000, IDB Lab NRTC USD 48,000, GEF USD 87,800, Counterpart USD 504,400).** The objective of this component is the conversion and utilization of organic waste as a key input for the rehabilitation and regeneration of degraded lands, commencing with abandoned quarry sites.
- 2.9 The composting partner, Tucana Ltd, has already made significant investments into developing the first industrial organic waste composting facility in T&T which conforms to international industry guidelines for this type of waste treatment, and will abide by standard operating procedures. Composted materials produced from organic wastes will be directed towards rehabilitation of quarried lands and regeneration efforts. The executing agency will partner with IAMovement who will lead this effort based on their experience successfully using vetiver grass and brush cuttings for land regeneration and stabilization via a previous IDB Lab project (TT-T1182 Building on Vetiver) which has demonstrated significant impact and has scaled to other Caribbean states. Emphasis will be placed on improving soil health at abandoned quarry sites using composted materials, delivering training, and

supporting livelihoods of 100 local community members to regenerate up to 30 hectares of degraded quarry lands. Composting outputs such as organic fertilizers and compost extracts will not only provide necessary inputs to support current quarry rehabilitation but can also be sold to farmers and persons wishing to improve soil health, yield, and land regeneration efforts. Carbon offsetting and sequestration will be achieved through various project activities, including the reduction of methane creation at landfills, soil improvements which serve as natural carbon sinks and the prevention of topsoil erosion through the addition of compost which can help to reduce soil loss by 86%.¹³ Project resources will be used to procure logistical and equipment support, as well as the provision of tools and contracting labor to support land regeneration efforts at the quarry.

- 2.10 ` The outputs for this component will include: (i) engagement of 100 persons from local communities in livelihood opportunities in land regeneration of which 50% are expected to be female and (ii) 30 hectares¹⁴ of degraded quarry lands are regenerated using organic waste and derived products.
- 2.11 **Component III Establishment of a Carbon Trading Model (USD 244,000: IDB Lab CRIG USD 81,000, GEF USD 18,000, Counterpart USD 145,000)** The objective of this component is to pilot the trading of locally generated carbon credits realized via the diversion of organic waste to the industrial composting facility operated by Tucana Ltd and the utilization of compost produced for regeneration of degraded lands.
- 2.12 The Executing Agency team will collaborate with experts in the carbon asset industry to implement a carbon offset accreditation process as well as conduct carbon quantification analyses of the land regeneration and composting activities under the project. Additionally, project resources will be utilized to develop a locally owned platform that facilitates the trading of carbon credits generated from these activities that have been measured and verified. The Executing Agency team will create a secure digital platform that offers individuals and corporations the opportunity to purchase verified local carbon assets inclusive of digital currency
- 2.13 The expected outputs of this component are (i) establishment of a Caribbean carbon asset accreditation and trading platform and (ii) at least USD 10,000 in revenues generated from carbon trading over the period of project implementation.
- 2.14 **Component IV: Research and Development on Value Added Products and Application of Green Technology (USD 231,300: IDB Lab CRIG USD 14,000, IDB Lab NRTC USD 15,500, GEF 104,700, Counterpart USD 97,100)** The objective of this component is to develop and pilot additional value-added products that can be derived from organic waste streams, that have a potential for monetization.
- 2.15 Resources are allocated to conduct required research, prototyping and testing of solutions that can be piloted and commercially validated. Target areas for development, can include among others, development of animal feed using sustainable protein sources (e.g., the black soldier fly and African snail),

¹³ [Reducing soil erosion with compost \(nsw.gov.au\)](https://www.nsw.gov.au/reducing-soil-erosion-with-compost)

¹⁴ National target for regeneration of quarry lands set by T&T is 100 HA by 2030.

manufacture of an on-site composter which can be used by farmers in lieu of other chemical treatments, production of local packaging using leaves and films from sargassum seaweed.

- 2.16 Under this component, the Executing Agency team will also test, monitor, and measure the use of vetiver grass hedgerows as a solution to prevent leachate and farm chemical contamination of groundwater and soils at test sites close to landfills. Scientific literature reports that the attributes of vetiver grass indicate that it is highly suitable for treating polluted wastewater from industries as well as domestic discharges. Some of these attributes include its tolerance to elevated and sometimes toxic levels of salinity, acidity, and heavy metals. Vetiver can be used to improve wastewater quality either by absorbing pollutants and heavy metals or by trapping debris, sediment, and agrochemicals in agricultural lands. In terms of laboratories analysis, there are few parameters that should be measured before and after the vetiver treatment: 1) pH, 2) Dissolved oxygen (DO), 3) biological oxygen demand (BOD), 4) Chemical oxygen demand (COD), 5) suspended solids, 6) total nitrogen, and 5) total phosphorus. These parameters do not provide any information about herbicides/pesticides therefore, the Executing Agency will also need to identify additional targeted compounds to be tested on the base-line studies that can be tracked before and after vetiver treatment.
- 2.17 The team will conduct an initial baseline to determine heavy metal and other contaminants present at several pilot locations, including landfills and farms and based on results will select sites and plant vetiver hedgerows as a form of green technology to test vetiver as a solution in preventing contamination from leachates and chemical run off. Based on previous lab studies conducted under the project ATN/ME-17209-TT, as well as international data, Vetiver can be successfully used as a landfill leachate treatment solution¹⁵. The team will continue to test and measure the level of contaminants present at these sites throughout project implementation and publish the findings to be shared with other waste management and environmental agencies and stakeholders in Trinidad and Tobago and the wider region as a green solution to the problem of leachates and chemical contamination of landfills and surrounding areas over time.
- 2.18 The expected outputs are: (i) revenue of at least USD 20,000 from additional product sales and related services and (ii) 500m of vetiver hedgerows planted at selected sites for absorption and capture of chemical runoff and (iii) completion of field study to test application of Vetiver as a green technology to treat with leachate and chemical run off.¹⁶
- 2.19 **Component V Marketing and Business Development of CTL Value Propositions: (USD 111,900, GEF USD 39,800, Counterpart USD 72,100)** The objective of this component is the promotion of CTL's model and value proposition which will support monetization of services and financial sustainability. Each

¹⁵ [VS_Landfill_leachate.pdf \(vetiver.org\)](#)

¹⁶ This indicator aligns with GEF outcome indicator "Reduction, avoidance of emissions of POPs to air from point and non-point sources"

element of the CTL model presents opportunities for revenue generation. These include monetization of innovative products, sale of carbon offsets from quarry rehabilitation and composting activities, sale of high-quality organic compost by products, subscription models for waste collection and the monetization of ESG impact projects that citizens and firms can participate and invest in. Revenues generated will be re-invested as financing for new projects and expansion of operations where environment and social benefits outweigh economic benefits. Project resources have therefore been allocated for the executing agency to contract a communications and marketing specialist to support a national marketing/outreach campaign, as well as the use of gamification, social media and documentaries to support the team's roll out of new green products, services and impact investment projects.

- 2.20 The expected outputs are: (i) 4 video productions on the CTL model, its impact and value proposition for companies and citizens and (ii) 10,000 persons sensitized on the CTL model

B. Project results, measurement, monitoring, and evaluation

- 2.21 The key outcomes targeted for this project are as follows (i) Diversion of 10,000 metric tonnes of organic waste from landfills that will be converted to compost over the project execution period, (ii) Avoidance of 182 metric tonnes of methane production as a result of the to the diversion and conversion of organic wastes, (iii) CO₂ equivalent offset of 4,550 metric tonnes attributable to diversion of organic waste from landfill,(iv) Monetization of services to cover 100% of CTL's direct operating costs by 2026 and (v) completion of evidence based consultations with national stakeholders on the impact of vetiver grass as a green technology in reducing the presence of leachates and other chemical contaminants in soil and groundwater.
- 2.22 In Trinidad and Tobago's Nationally Determined Contributions (NDC) submission to the United Nations Framework Convention on Climate Change (UNFCCC), the Government of Trinidad and Tobago committed to achieve a reduction in overall emissions by 15% by 2030 from business as usual, based on its Carbon Reduction Strategy. The project's model for organic solid waste management will contribute to this carbon mitigation goal. The model further supports other global environmental conventions, agreements and commitments to which Trinidad and Tobago is party. This includes the Cartagena Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region via the CTL model's reduction of pollution from land-based sources and activities; Convention on Biological Diversity; Stockholm Convention on chemicals management; and Barbados Small Island Developing States (SIDS) Programme of Action that prioritises action on 14 areas including climate change and management of wastes.
- 2.23 In accordance with IDB Lab requirements, Hello Green Products Ltd., as the executing agency, will track and collate data on progress of the results included in the results matrix and will report on the achievement of these indicators via IDB Lab's Project Status Reporting (PSR) system. The sources and manner of

collection and reporting of information and data required for the purpose of timely monitoring the project's progress has been outlined in the results matrix.

- 2.24 In monitoring key indicators and results of the intervention, Hello Green Products Ltd will receive support from IAMovement an organization that has experience implementing and managing IDB Lab financing via their role as the executing agency under the project ATN/ME-17209-TT "Building on Vetiver". These two entities will collaborate to monitor and report project achievements and development indicators against the results matrix. Intermediate values in the results matrix will serve as the early success indicators and will help to identify if the project is on track or requires corrective action.

III ALIGNMENT WITH THE IDB GROUP, SCALABILITY, AND RISKS

A. Alignment with the IDB Group

- 3.1 The project is aligned with the IDB Group 2nd Update to the Institutional Strategy and specifically the cross cutting thematic area Addressing Climate Change and Environmental Sustainability which emphasizes the need to decrease greenhouse gas (GHG) and the pursuit of opportunities for climate resilience and adaptation to climate impacts. In addition, the operation was designed jointly with members of the Water and Sanitation Division within the ISLANDS: Caribbean Incubator Facility RG-01674¹⁷ which was created with GEF financing to support the sustainable management of chemicals and hazardous waste.
- 3.2 The project is also aligned with IDB Lab's focus on essential services and cross cutting areas of the climate crisis, in particular the development of sustainable and scalable circular economy models that respond to challenges of the climate crisis, and in this case specifically, the issue of waste reduction and GHG reduction that can be achieved through innovation and private sector led investment in the conversion and application of organic waste for land regeneration. The project also contributes to IDB Lab's operational delivery and results targets for programming in Small and Island Economies, Climate Finance, projects supporting climate change mitigation, projects supporting gender equality, and projects supporting diversity.
- 3.3 The development of a digital platform for carbon offset accreditation and trading supports the core pillar of the IDB's Country Strategy with Trinidad and Tobago 2021 to 2025, specifically, Digital Transformation which references the use of digital technologies in service delivery, as well as the Country Strategy's cross-cutting theme of Climate Change and Environmental Sustainability.
- 3.4 This project will also contribute to the following Sustainable Development Goals, specifically, SDG 12 related to sustainable consumption and productions patterns and particularly targets 12.4 achieving environmentally sound management of chemicals and wastes and reducing their release to air, water and soil and target 12.5 substantially reducing waste generation through prevention, reduction, recycling and reuse; SDG13 Climate Action through greenhouse gas reduction; SDG 15 Life on Land target 15.3 in that it will promote degradation-neutrality of land.

¹⁷ Approved by the Board of Executive Directors on September 2, 2021 (AT-1558)

- 3.5 Approximately 70% of the total IDB funding¹⁸ for this project is invested in climate change adaptation activities according to the joint MDB approach on climate finance tracking. This contributes to the IDB Group's goal of increasing the financing of projects related to climate change to 30% of total approvals by the end of 2022.

B. Scalability

- 3.6 The Executing Agency developed this project with an aim to fully commercialise and monetize the services delivered through the the Close the Loop model. To facilitate scaling and commercialisation efforts, The founder of Hello Green has as already incorporated Close the Loop Caribbean as a limited liability company¹ which will serve as the entity that will receive revenues and manage associated direct costs of the Close the Loop monetization of services. Evidence of revenues generated from Close the Loop Caribbean Ltd will be the trigger for repayment of the CRIG facility.
- 3.7 Commercialisation and Scaling of this model consists of a two-pronged strategy (i) Monetisation of the model's services, as well as innovative products developed. and (ii) Defining and delivery of ESG projects for corporate entities that support achievement private sector companies commitments to global environmental concerns (climate change, waste reduction, adaptation) . To support this strategy the Executing Agency has allocated resources to expand waste collection outreach, structuring impact and carbon projects to pitch to potential clients as well as marketing of value proposition of the products and services emanating from the Close the Loop Caribbean model.
- 3.8 In addition to commercialisation of Close the Loop there is potential for geographic expansion of this model, particularly in other small states that face the climate, environmental and health issues associated with high levels of organic waste reaching landfills as IAMovement, one of the key technical partners of this project, has already worked on land regeneration projects in other islands in the region securing committed partnerships and buy in, which can the way for building out the Close the Loop model.

C. Project and institutional risks

- 3.9 The overall project risk level is assessed as Medium. Key risks that have been analyzed and which contribute to this assessment include the following:
- 3.10 **Project Implementation Risk:** If one of the three key technical partners withdraws from the project, this will undermine commercialization of the Close the Loop model given the strong collaborative effort required for the success of the business model. This risk will be mitigated through the development of MoUs and execution of contracts between the three partners, as well as the direct engagement of partners in the steering committee which will promote ownership of the model and its targeted results by all three entities, effective communication, shared problem

¹⁸ IDB Lab CRIG and NRTC financing focused on Components I II, III and IV of the project totals USD 263,500 or 70% of total financing of USD 375,000

solving and alignment of the goals of partner companies with specific objectives and results of the CTL model.

- 3.11 **Project Implementation Risk:** If the composting facility does not supply adequate compost materials to Close the Loop Caribbean, the achievement of project results related to land rehabilitation and revenue generation will be negatively impacted. This risk will be mitigated through the execution of a service agreement between the executing agency, Hello Green Products Ltd. and Tucana Ltd for supply of compost.
- 3.12 **Financial Risk:** If Close the Loop Caribbean does not generate desired revenue and cash flow required for repayment the CRIG, the facility will not be repaid. In recognition of the highly innovative and early-stage model being implemented, the CRIG terms include a one-year grace period and smaller installments in initial years of the repayment period. Additionally, repayment will be triggered by Close the Loop attaining a minimum threshold of revenues. This financing structure was developed to provide the best conditions for Close the Loop Caribbean to honor its obligations regarding repayment and protect the interests of IDB Lab as the primary risk taker.
- 3.13 **ESG Risk:** Potential contamination of incoming waste will negatively compromise the quality of compost produced. To mitigate this risk project resources have been allocated for sensitization and training for waste collectors and staff at organizations targeted for collection of organic waste. In addition, Tucana Ltd will implement and manage key Environmental Health and Safety guidelines suited to waste management facilities.¹⁹
- 3.14 The Institutional Risk, according to the Assessment of Integrity and Institutional Capacity (DICI), is rated as high. In this regard budget resources have been allocated to support financial, administrative, and broader fiduciary management and reporting standards required by IDB Lab and contracting of a full-time monitoring and evaluation officer.

IV INSTRUMENT AND BUDGET PROPOSAL

- 4.1 The project has a total cost of US\$1,825,600, of which US\$375,000 (21%) will be provided by IDB Lab, through a Contingent Recovery Investment Grant (CRIG) in the sum of US\$200,000 and a Non-Reimbursable Technical Cooperation (NRTC) in the sum of US\$175,000. GEF will provide a non-reimbursable Investment Grant, (IG)²⁰ of US\$353,600 (19%) through the operation **RG-O1674 ISLANDS: Caribbean Incubator Facility** and US\$1,097,000 (60%) will be provided in counterpart resources.
- 4.2 Project financing includes a contingent recovery investment grant of US\$200,000 as the Close the Loop model is intended to generate revenue as a commercial

¹⁹ Under national law the Occupational Safety and Health Authority will assess, and clear specific procedures implemented

²⁰ Over 30% of GEF Resources will be used for the acquisition of Goods and Services as outlined in the detailed budget (Annex II) hence the use of an IG instrument

entity. In this regard Close the Loop Caribbean Ltd. has been incorporated as a legal limited liability entity to receive and manage revenues generated from the services piloted under this program and on an ongoing basis. This arrangement will facilitate verification of revenues generated from monetization of services and products developed under the project. The executing agency will begin to repay the CRIG based on the terms outlined below and as further described in the annexed term sheet (Annex VII)

- 4.3 **Retroactive recognition of counterpart funds.** Counterpart resources will be retroactively recognized up to 12 months preceding project approval by the IDB Lab Donors Committee up to a maximum of US\$500,000 which represents investment in the industrial composting facility and costs of other preliminary project activities.
- 4.4 The project budget is summarized as follows:

Project components	IDB Lab CRIG USD TT-G1004	IDB Lab NRTC USD TT-T1135	GEF IG USD TT-G1005	Counterpart (cash and in kind) USD	Total USD
Component I: Organic Waste Streams Capture:			93,300	133,600	226,900
Component II: Carbon Sequestration Projects: Land Regeneration and Industrial Composting	105,000	48,000	87,800	504,400	745,200
Component III: Establishment of Carbon Trading model	81,000		18,000	145,000	244,000
Component IV: Value Added Products R&D	14,000	15,500	104,700	97,100	231,300
Component V: Marketing of Value Propositions			39,800	72,100	111,900
Project Administration		107,900	10,000	144,800	262,700
Contingencies		3,600			3,600
Total	200,000	175,000	353,600	1,097,000	1,825,600
% of financing	11	10	19	60	100

- 4.5. **Conditions for the Contingent Recovery Investment Grant.** The principal terms and conditions of the IDB Lab Contingency Recovery Investment Grant financing are outlined below and detailed in the Term Sheet (Annex VIII).
- 4.6. **Period of Execution and Disbursement.** The CRIG operation (TT-G1004) must be executed and disbursed within a period not exceeding 3 years, counted from the date of signature of the Agreement. During this period, the Executing Agency is required to report progress in the PSR.
- 4.7. **CRIG Disbursement Mechanism.** Resources will be disbursed in up to three disbursements, for a maximum of US\$100,000 each for a maximum cumulative total amount of US\$200,000 to be made during the Disbursement Period, at the

request of the Executing Agency., against the signing of a promissory note, conditional to achievement of triggering milestones and subject to compliance with the conditions for disbursement, as well as others that may be requested by IDB Lab.

- 4.8. **Conditions for the disbursement of Contingent Recovery funds.** To make disbursements, the Executing Agency must report to IDB Lab the fulfillment of the conditions agreed at the time of the disbursement request, as follows:
- 4.9. For all disbursements, a request accompanied by: (i) evidence of compliance with general conditions for the disbursement of the contribution detailed in the Agreement for provision of CRIG financing executed by the IDB and Hello Green Products Ltd (the Executing Agency), (ii) report of compliance with financial and operating conditions prior to disbursement, (iii) no objection to the updated and specific investment plan for the use of the resources requested, and (iv) a signed promissory note for the amount requested.
- 4.10. For the first disbursement the Executing Agency will also have to present (i) updated cash flow projections for revenue generating services and (ii) draft agreement for sale of technical services by Close the Loop Caribbean Ltd.
- 4.11. For the second and third disbursements, in addition, the Executing Agency will have to present evidence of: (i) revenues generated under the project and (ii) at least 30% of initial disbursed CRIG funds have been utilized by the Executing Agency
- 4.12. **Recovery of the Contingent Recovery Investment Grant.** The Executing Agency will be subject to repay the recovery amount, if it meets the Triggering Milestone measured during the Recovery Period and in accordance with the stipulations.
- 4.13. The Repayment Period lasts 36 months and begins on the first repayment date. The first repayment date will occur within 12 months following the date of the last disbursement.²¹
- 4.14. Repayment must be made regardless of whether there has been a partial cancellation or partial disbursement of the CRIG resources.
- 4.15. The Executing Agency is obligated to make up to 6 semi-annual repayments to IDB Lab during the Repayment Period, starting on the first repayment date, which occurs after the Executing Agency meets the Triggering Milestone. Repayment dates are June 15, and December 15. The semiannual repayment amounts consist of four initial installments of US \$25,000 with the remaining final two semiannual repayments amounting to US \$50,000 each.
- 4.16. The Triggering Milestone is reached when Close the Loop Caribbean Ltd has generated, because of the project, cumulative revenues of US \$300,000.

²¹ The repayment period begins 12 months from the date of the last disbursement under the Agreement

- 4.17. If the Executing Agency is not compliant with the Triggering Milestone for commencement of repayment, the first repayment is deferred to the next scheduled semiannual repayment date and the compliance review is again conducted 30 days prior to the semiannual repayment date. If the Executing Agency is again found to be non-compliant with the contingency condition for commencement of repayment, this process repeats on the next semiannual payment date.
- 4.18. Once the Executing Agency is found to be compliant with the contingency condition for commencement of repayment, the installments will commence in accordance with agreed schedule up to the date of full repayment of the amount of the Contingent Recovery Investment Grant in the sum of USD \$200,000 unless otherwise agreed by the Inter-American Development Bank and the Executing Agency.
- 4.19. The maximum Contribution Recovery of Contingent Recovery resources is US\$200,000.

V EXECUTING AGENCY AND IMPLEMENTATION STRUCTURE

A. Executing agency description

- 5.1 Hello Green Products Ltd²². will be the executing agency for this project and will sign the agreement with the Bank. To implement the CTL model, Hello Green will also work in collaboration with IAMovement who will manage the quarry rehabilitation and land regeneration efforts and Tucana Limited which will commission and operate the Industrial Composting Facility.
- 5.2 **Hello Green** was the first company in the Caribbean to introduce Compostable-Packaging (2016) and drive key advocacy efforts around this transition. Hello Green has received the 2018 EY-Entrepreneur-of-the-Year-Startup-Award and played a key role in the government's Ministry of Planning and Bureau-of-Standards consultations relating to Styrofoam legislation, while growing and operating profitably for 6+ years. Vandana Mangroo, who is the founder and Managing Director of Hello Green, is not only a well-established social entrepreneur, but is also certified in Principles of Waste Reduction, Recycling and Solid Waste Management. Ms. Mangroo is also the founder and managing director of the NGO Institute for Environmental Research and Empowerment, she will serve as the Project Lead and Technical Director for the Close the Loop Caribbean project
- 5.3 **IAMovement** is an NGO which has become one of the leading civil-society voices on climate change & environment in Trinidad and Tobago, focusing on the development of country and community resilience through green engineering technologies and social approaches. IAMovement has managed and provided technical oversight to implementation of various community climate-resilience

²² Hello Green Products Ltd was incorporated in Trinidad and Tobago in 2019

- 'Vetiver Education & Empowerment Projects across T&T, and other Caribbean island-countries for the past six years. IAMovement is governed by a board of directors, the organization is structured to support its key operations in marketing and communications, digital content and social media management, project implementation as well as recruitment and capacity building for individual volunteers and rural community groups. IAMovement will lead quarry rehabilitation and land regeneration efforts in the Close the Loop Caribbean project.
- 5.4 **Tucana Ltd** is a division of AP Scott Ltd an established local marketing and distribution company which provides a range of quality and innovative products across eight divisions, which include Food & Packaging, Professional Care, Personal Care, Pharmaceuticals, Hardware, Paints & Coatings, GNC supplements and Housing solutions. From its roots in import and distribution, the company has pivoted operations to include eco-friendly services which include investment in eco-tourism with a 300-acre estate at a seaside community on the east coast of Trinidad consisting of ecofriendly cottages. Tucana Ltd has also recently developed an agriculture division that focuses on using mushroom substrate to produce a commercial grade organic live culture compost to replace chemical fertilizers and pesticides in commercial farming. The company has invested in the development of a large-scale industrial composting facility with a defined location and has already acquired most of the equipment required to scale operations. Tucana Ltd will function as the industrial composting and R&D partner for the Close the Loop Caribbean project.

B. Implementation structure and mechanism

- 5.5 The Executing Agency will establish an execution unit and the necessary structure to execute project activities and manage project resources effectively and efficiently. In this regard, the project implementation unit be headed by Hello Green's founder and will include a financial and administrative officer and a monitoring and evaluation specialist on a full time basis. Hello Green Products Ltd. will also be responsible for submitting progress reports on project implementation. Details on the reporting requirements are in Annex V in the project technical files.
- 5.6 The three technical partners listed above each bring a comparative advantage in terms of experience, investment and skillset and to demonstrate commitment to this venture, all three partners will sign an MoU that will outline the roles and responsibilities of each organisation, specifically: (i) Hello Green Products Ltd. will act as the executing agency with overall responsibility for managing project activities, management of financial resources as well as tracking and reporting results, (ii) IAMovement will share the knowledge and experience implementing a previous IDB Lab project, as well as access to their network of partners and technical expertise and will lead land regeneration efforts.; and (iii) Tucana Ltd will establish the composting facility that will receive the organic waste to be converted to waste compost that will be used for land rehabilitation and regeneration and will collaborate on research and development of new value added products derived from organic waste.
- 5.7 In addition to the MoU, Hello Green will also execute a service agreement with Tucana Ltd. for the delivery of compost produced by Tucana Ltd. in exchange for

organic waste collected by Hello Green and delivered to Tucana Ltd composting facility.

- 5.8 Hello Green will also create and chair a steering committee to support project governance. The three technical members representing Hello Green, IAMovement and Tucana Ltd will serve as core members, while external parties with specific sector expertise will be involved as advisory members. The Steering Committee will focus on governance, results and risk management, while the advisory members can support technical aspects of project implementation.

VI FULFILLMENT OF MILESTONES AND SPECIAL FIDUCIARY ARRANGEMENTS

- 6.1 **Disbursement by results and fiduciary arrangements.** The executing agency will adhere to the standard IDB Lab arrangements relating to disbursement by results, Bank procurement²³ and financial management policies, as specified in Annexes V and VI.
- 6.2 **Results Based Disbursement:** The project will be monitored by the IDB's Country Office in Trinidad and Tobago. Monitoring will be undertaken in accordance with the performance and risk management policies (fulfilment of milestones), as established by the IDB Lab. Project disbursements will be contingent upon verification of the achievement of milestones (pre-determined outputs critical to achievement of the development objectives). Achievement of milestones does not exempt the Executing Agency from the responsibility of reaching the results matrix indicators and project's objectives.
- 6.3 **Fiduciary Management and Supervision:** The Executing Agency will establish and be responsible for maintaining adequate accounts of its finances, internal controls, and project files according to the financial management policy of the IDB Lab. For the procurement of goods and contracting of consulting services, the Executing Agency will adopt the principles of IDB Lab Policies

VII ACCESS TO INFORMATION AND INTELLECTUAL PROPERTY

- 7.1 **Access to information.** Project information is not considered confidential under the IDB Access to Information Policy. This document is therefore public in accordance with said policy²⁴.
- 7.2 **Intellectual property.** The Executing Agency shall own the intellectual property rights to all works produced or results obtained under the project which excludes any product owned by other entities that are part of this project and will grant the IDB Group an irrevocable, worldwide, perpetual, royalty-free, and non-exclusive license to use, copy, distribute, reproduce, publicly display, and perform any and all Executing Agency intellectual property derived from execution of the project, as well as to create derivative works.

²³ [IDB Procurement Policies.](#)

²⁴ [Link to the Access to Information Policy..](#)