

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK
MULTILATERAL INVESTMENT FUND

BELIZE

**ENHANCING CONSERVATION IN BELIZE'S PROTECTED AREAS THROUGH
DISRUPTIVE TECHNOLOGIES**

(BL-T1121)

DONORS MEMORANDUM

This document was prepared by the project team comprised of: Yolanda Strachan (LAB/DIS) and Terry-Ann Segree (DIS/CJA), co-team leaders, Marilyn Pinelo-Lee (DIS/CBL), Juan Enrique Pedeflous (GCL/GCL), and Romina Valeria Ordonez (DSP/DVF).

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PROJECT SUMMARY

ENHANCING CONSERVATION IN BELIZE'S PROTECTED AREAS THROUGH DISRUPTIVE TECHNOLOGIES

(BL-T1121)

Belize has the highest percentage of forest cover in Central America and there are 103 protected areas which constitute approximately 36 percent of the country's land territory. These protected areas are either national parks, wildlife sanctuaries or nature reserves, which includes forest and marine reserves. Belize's natural capital contributes millions of dollars annually in ecosystem services across key sectors such as agriculture, tourism, fisheries and forestry.

The Maya Golden Landscape, one of Belize's biodiversity hotspots, is under serious threat from illegal transboundary agricultural and forest resource extraction such as illegal logging and poaching. In addition, the use of unsustainable farming practices by the indigenous Maya communities that buffer the Maya Golden Landscape has contributed to an increase in the annual average deforestation rate within the protected areas and threatens biodiversity. Monitoring and surveillance of this vast area is a time consuming and costly endeavor, which is further complicated by the rough terrain, making active management with frequent foot patrols, difficult. To address these problems, Ya'axché Conservation Trust will put in place an innovative three-pillar approach aimed at creating economic opportunities for local communities, improving surveillance of protected areas, and promoting data driven advocacy. This new approach will use technology to transform and enhance conservation in the Maya Golden Landscape.

The project will improve livelihoods and economic opportunities for farmers living in communities that surround the protected areas by creating opportunities around two key crops: cocoa and honey. In addition to providing training and specialized technical assistance, the project will use geospatial tools and digital apps to improve productivity, market access, and business management for producers.

Ya'axché will also harness the use of digital technology and data for improved management and surveillance of the Maya Golden Landscape. The project will accelerate digital transformation in forest protection by using drone technology, aerial imagery, cameras, and listening devices to monitor land use change over time. These technologies will enable Ya'axché to monitor the landscape with greater speed, efficiency, and a reduced cost.

With improved data collection and monitoring capability, Ya'axché will be able to focus protection efforts on key locations. The knowledge from this data driven system will empower Ya'axché to develop evidence-based policies and action plans to improve the management of the Maya Golden Landscape and other protected areas in Belize. The beneficiaries of this project will be 100 Cocoa farmers, 30 beekeepers, and 4,000 community members living in the Maya Golden Landscape.

ANNEXES

ANNEX I	Results Matrix
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Draft Resolution

AVAILABLE IN THE TECHNICAL DOCUMENTS SECTION OF MIF PROJECT INFORMATION SYSTEM

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ACRONYMS AND ABBREVIATIONS

CATIE	The Tropical Agriculture Research and Higher Education Center
CIAT	International Center for Tropical Agriculture
DNA	Diagnostic of Executing Agency Needs
GDP	Gross Domestic Product
GPS	Global Positioning System
IDB	Inter-American Development Bank
IDB Invest	Inter-American Investment Corporation
IDB Lab	Multilateral Investment Fund
MMNFR	Maya Mountain National Forest Reserve
MGL	Maya Golden Landscape
PACT	Protected Areas Conservation Trust
SIB	Statistical Institute of Belize
TFCGA	Trio Farmers Cacao Growers Association

PROJECT INFORMATION

BELIZE

ENHANCING CONSERVATION IN BELIZE'S PROTECTED AREAS THROUGH DISRUPTIVE TECHNOLOGIES

(BL-T1121)

Country and Geographic Location:	Belize: Toledo District		
Executing Agency:	Ya'axché Conservation Trust		
Focus Area:	Climate-Smart Agriculture		
Coordination with Other Donors/Bank Operations:			
Project Beneficiaries:	Direct beneficiaries: 100 Cocoa Farmers and 30 beekeepers in the Toledo District of Southern Belize Indirect beneficiaries: 4,000 community members living in the Maya Golden Landscape		
Financing:	Technical Cooperation:	US\$ 574,000	50.5%
	Equity:	-	
	Loan:	-	
	Other:	-	
	TOTAL IDB Lab FUNDING:	US\$ 574,000	
	Counterpart:	US\$ 563,000	49.5%
	Co-financing:	-	
	TOTAL PROJECT BUDGET:	US\$ 1,137,000	100%
Execution and Disbursement Period:	36 months of execution and 42 months of disbursement.		
Special Contractual Conditions:	Conditions prior to first disbursement will be, to the Bank's satisfaction: (i) Selection of the Project Manager; (ii) establishment of the Steering Committee; (iii) Signed MOU/Agreement confirming in-kind and cash contributions from PACT; and (iv) letter of commitment from Ya'axché Conservation Trust certifying its counterpart contribution to the project.		
Environmental and Social Impact Review	This operation was screened and classified as required by the IDB's safeguard policy (OP-703) on May 13, 2019. Given the moderate impacts and risks, the proposed category for the project is C.		
Unit responsible for disbursements	CID/CBL		

I. The Problem

A. Problem Description

- 1.1. **Protected areas are a major asset to the Belizean economy.** In recent years, Belize has become a major tourist destination based on its rich biodiversity. Belize has the highest percentage of forest cover in Central America and there are 103 protected areas which constitute approximately 36 percent¹ of the country's land territory. These protected areas are either national parks, wildlife sanctuaries or nature reserves, which includes forest and marine reserves. Belize's natural capital² contributes millions of dollars annually in ecosystem services across key sectors such as agriculture, tourism, fisheries and forestry. Together these natural resource-based sectors contributed more than 49 percent of Belize's GDP in 2016³. The tourism industry contributes almost 40 percent (\$244.85 million) of GDP and is ranked among Belize's top foreign exchange and revenue earners. Belize's tourism industry is eco-tourism and culture based and depends on these areas of high biodiversity, cultural wealth and scenic beauty. In 2018, an estimated 42 percent of tourists report visiting a national park or reserve⁴. Although tourism in Southern Belize is still emerging, the Maya Mountains attract visitors interested in archaeological sites, birding, caving, and engaging in a range of other outdoor experiences while exploring the forested mountain landscape. Through its eco and culture-based tourism, the Maya Mountains are an important element of the tourism product in southern Belize.
- 1.2. **The Maya Golden Landscape (MGL), one of Belize's biodiversity hotspots, is under serious threat.** Within the 770,000 acres of the MGL, there are three terrestrial protected areas – the Golden Stream Corridor Preserve, Bladen Nature Reserve and Maya Mountain North Forest Reserve (MMNFR). Of these, the 36,000-acre MMNFR is a key biodiversity area and one of the most threatened protected areas in Belize. The MGL located in the rural district of Toledo is home to several globally threatened species⁵ and plays a critical role in watershed protection. There are 18 major river catchments and 16 sub-catchments that drain the Maya Mountains, thus providing water security for agriculture and local communities and preserving the quality of the water draining into Belize's coastal areas along the Caribbean Sea⁶. The MGL is plagued with the constant threats of illegal logging, resource extraction and other prohibited activities such as gold panning and poaching of scarlet macaws. During the period 2017 to 2018⁷, there were 270 reports of infractions within the MGL, which include 40 percent illegal

¹ Mainstreaming Biodiversity, Ecosystem Services and Coastal Resilience in Tourism Development; Ecosystem Service Mapping and Review 2015

² Natural capital is the stock of natural resources which include geology, soil, air, water, and biodiversity.

³ Statistical Institute of Belize, Annual Report 2016

⁴ Travel and Tourism Statistical Digest 2018. Belize Tourism Board

⁵ The MGL is home to threatened species such as the harpy eagle, howler monkey, scarlet macaw, and jaguar.

⁶ <https://sustainabledevelopment.un.org/content/documents/1012belize.pdf>: Belize National Sustainable Development Report:

⁷ Ya'axché Data collected in 2017-2018 using the Smart tool

entry, 34 percent illegal hunting and 20 percent illegal logging as the main infractions.

- 1.3. **Unsustainable farming practices in buffering communities also have a negative impact on protected areas.** Like many traditional farmers, the communities that buffer the protected areas resort to “slash and burn” techniques. Farmers typically clear and plant a parcel of land, in some cases within the protected areas, and then shift to a new plot once the soil becomes infertile or the crop yield decreases. These practices have contributed to an increase in the annual average deforestation rate over the years as fires spread to the protected areas and causes further loss of biodiversity. This is evident with the deforestation rates in the MMNFR de-reserved⁸ zone which rose from 1.7 percent in 2014 to 4.5 percent in 2017⁹.
- 1.4. **There are technical and resource gaps within the monitoring, resource protection and enforcement of protected areas in Belize.** Monitoring and surveillance of this vast area is a time consuming and costly endeavor, which is further complicated by the rough terrain, making active management with frequent foot patrols difficult. With increased threats to these areas of biodiversity, managers of the protected areas need to be able to identify hot spots of illegal activity and coordinate targeted ground patrols to improve enforcement. Currently, rangers conduct foot patrols periodically, and depending on the remoteness of the site, patrols may last between five and seven days at a time. Any sighting of illegal activities (e.g. logging, land clearing), is logged in a smart-tool digital device, which records the infractions and the GPS location. Depending on the nature of the threat, rangers coordinate patrols with the armed forces to apprehend offenders in the act. However, this has not resulted in many arrests or prosecutions as once the offenders realize that the area is under surveillance, they move to another location. The increasing threats to the ecosystems in the MGL require strengthening the capacity for monitoring and surveillance and the collection of comprehensive data to improve management.
- 1.5. The indigenous Maya community members that buffer the MGL protected areas are primarily subsistence farmers with limited income generating opportunities. The Toledo District is the southernmost district in Belize and the country’s poorest. It has poverty rate of 60.4 percent and is highly dependent on agriculture¹⁰ Agriculture is the main source of employment in the district and approximately 23 percent of the land in this area is used for agricultural purposes such as banana farms and cattle ranching.¹¹ The future climate scenario for Belize will likely be characterized

⁸ The de-reserve zone refers to lands that previously fell under the protected area but have been given to communities without formalized ownership. The de-reserved land is adjacent to the agro-concession and is used as communal land for the communities

⁹ Data collected by Ya’axché

¹⁰ Mainstreaming Biodiversity, Ecosystem Services and Coastal Resilience in Tourism Development; Ecosystem Service Mapping and Review 2015

¹¹ Ibid

by warming temperatures and declining levels of precipitation¹². Generally, small holders and subsistence farmers are more vulnerable to climate related impacts including drought and extreme weather events¹³.

- 1.6. **The government of Belize has put in place a system of support for the preservation of protected areas** and has co-management agreements with various entities to improve the management and surveillance of these areas. One such entity is Ya'axché Conservation Trust, established in 1998, whose mission is to bring harmony between nature and human development for the benefit of both. Ya'axché manages the MGL and has established credibility with the Government, community leaders and the private sector, based on its track record in conservation working with local communities, research, and sustainable farming efforts. The co-management agreements are partially funded by The Protected Areas Conservation Trust (PACT) grant. PACT was established as a statutory body in 1996 and serves as a conservation trust fund. It is funded principally through two mechanisms: a conservation fee of BZ \$7.50 (US \$3.75) collected as part of the airport departure tax and a 20 percent commission from the cruise ship passenger tax of US\$7 per person. PACT has developed a Conservation Investment Strategy¹⁴ that permits targeted investments to be made to support the work of protected area management agencies and coordinates activities within protected areas throughout Belize. Ya'axché receives grant funding from PACT for approximately 20 percent of its operational costs for the MMNFR. PACT allocates funding based on the threat levels of protected areas, that is, the higher the threat level, the greater the allocation. This does not take into consideration achievement of impact and contribution to conservation as there is currently no estimate to value the co-management services provided by Ya'axché and associated ecosystem services that make a positive contribution to the environment (carbon sequestration, clean water, etc.).
- 1.7. In 2015, Ya'axché successfully lobbied the Government on behalf of the Trio Farmers Cacao Growers Association (TFCGA) for Belize's first agro-forestry concession on 936 acres within the MMNFR protected area. The agroforestry concession is an innovative legal provision that grants Ya'axché a license to cultivate native species of cocoa in the protected area for a period of 15 years (2014-2029) subject to certain conditions. The licensee must pay an annual administrative fee and royalties beginning in the 6th year. The primary goal of the concession is to bring sustainable economic development to communities buffering the MMNFR, in a manner which reduces threats to biodiversity and habitat. The farms in the concession became productive in 2017 and the income from the farmers' cocoa and other annual crops supplement their incomes and help to provide necessities for their families. Income earned has also been re-invested to plant more cocoa to reach a viable farm size and achieve scale. However, there are still substantial managerial and productivity gaps in the TFCGA, particularly on business management, farm management, and quality, and market access. This is of significant concern, as under the concession agreement by 2020, the farmers

¹² UNDP. Belize and Climate Change: The Costs of Inaction. 2009

¹³ Ibid

¹⁴ Pact Strategic Plan 2017 - 2021

will be required to pay royalties to the government for the use of the land in the agro-concession. Farmers will therefore need to become more effective in managing their farms to improve the productivity and yield to meet this future obligation. Ya'axché has also introduced climate-smart agricultural practices in beekeeping and inga-alley cropping training with a focus on female community members to increase the earning potential of households. Currently, Ya'axché is working with 30 beekeepers, half of which are women and young people.

- 1.8. **Beneficiaries.** The project seeks to address the threat of limited economic livelihood, unsustainable farming practices and lack of knowledge of good business practices for the community members buffering the protected areas. The beneficiaries of this project will be: (i) 100 Cocoa farmers in the MGL including the 31 farmers in the agro-concession agreement with the Government of Belize to cultivate 936-acres of protected area lands (ii) 30 beekeepers with a focus on women and youth; (iii) 4,000 community members in the Maya Golden Landscape who will benefit from the preservation of natural capital and ecosystem services provided by the protected area.
- 1.9. **Lessons Learned.** The IDB Lab has been working to help countries and communities realize the full economic value of their natural capital through innovative solutions led by the private sector. Using artificial intelligence and remote sensing are new paths for conservation that the IDB Lab is exploring with this project. However, the project builds on experiences using private sector driven solutions to preserve natural capital. For example, in Suriname (SU-T1096) the Lab financed a project to place market value on the natural capital of the Central Suriname Nature Reserve while reinforcing conservation outcomes. At the regional level, the IDB Lab is an investor in the Althelia Sustainable Ocean Fund (RG-Q0042), the first global “blue economy” investment fund (using the sea and its resources for sustainable development) slated to invest in the region. IDB Lab has also financed a cluster of cacao projects throughout the region including in Belize. Lessons learned from these projects point to the importance of incorporating key players in the value chain (anchor corporates, key aggregators or cooperatives) capable of scaling the commercial activities, offering technical assistance services to optimize their cacao agroforestry systems, and facilitating market access for farmers by strengthening channels for selling cacao and other crops.

II. The Innovation Proposal

A. Project Description

- 2.1. The objective of this project is to preserve natural capital¹⁵ in the Maya Golden Landscape (MGL) by improving economic livelihoods of the communities that buffer the protected areas, reducing unsustainable farming practices, and strengthening the capacity for monitoring and surveillance.

¹⁵ Natural capital is the stock of natural resources which include geology, soil, air, water, and biodiversity.

- 2.2. **The model.** The project will pilot a collaborative approach to conservation management in the MGL in Southern Belize. The first pillar of the model is to improve livelihoods and economic opportunities for farmers living in communities that surround the protected areas. In order to achieve this, the project will focus on creating opportunities around two key crops: cocoa and honey. Both cocoa and beekeeping are sustainable agroforestry activities that can improve incomes, reduce unsustainable slash and burn farm practices and illegal exploitation of rare hardwoods in protected areas.
- 2.3. Belize produces a unique fine flavor cocoa which occupies a niche market. Cocoa production increased from 26 metric tons in 2010 to 85 metric tons in 2016. Growth of the local cocoa sector has been driven by international demand from specialty chocolate makers who pay a premium for the unique flavors and aroma of Belizean cocoa. In Toledo, the main buyer is Maya Mountain Cacao, a local company that operates a processing center in Toledo and purchases organic wet cocoa from more than 400 farmers in Southern Belize. The project will establish a strategic partnership with Maya Mountain Cacao to improve yields, quality, and market access for farmers based on the unique attributes of their cocoa (e.g. flavor, origin, and organic certification).
- 2.4. Honey production has been identified by the government as a high potential agricultural activity to enhance rural income opportunities, food security, and environmental conservation¹⁶. The natural capital in the MMNFR provides a favorable environment for beekeeping and honey production. National production has increased from an average of 88,000 lbs. between 2014 to 2017 to 113,000 lbs. in 2018. Currently all the honey produced is consumed by the local market and there are ample opportunities for growth¹⁷. The project will train small-scale beekeepers in modern techniques such as hive management, harvesting, processing, traceability, and marketing products. These activities will have a targeted focus on women and youth in the buffering communities.
- 2.5. In addition to improving livelihoods, the second pillar of the approach is to use technology to transform the way the MGL is managed. Ya'axché is already using a smart tracking tool (a tablet-based surveillance tool) and camera traps to collect data on biodiversity, illegal activities, and other changes in the protected areas. The project will accelerate digital transformation by using drone technology and aerial imagery to monitor land use change over time. These technologies will enable Ya'axché to monitor the landscape with greater speed, efficiency, and a reduced cost. Satellite alerts can make field patrols more effective by helping park rangers to identify hotspots and to respond more quickly to suspected illegal activities. The project will also evaluate the use of sound monitoring equipment which can analyze ambient sounds to detect chain saws, and indication of illegal activity.

¹⁶ Belize National Beekeeping Strategy, 2019 – 2024. Belize Marketing and Development Corporation and the Inter-America Institute for Cooperation on Agriculture.

¹⁷ Recent estimates are that Belize has just under 100 beekeepers, managing around 2,000 hives and producing an average of 93,000 lbs. of honey a year. At current productivity, the current estimated yearly total revenue for beekeepers in Belize is around US\$310,000 (at retail price)

- 2.6. The final pillar of the model is to transform data into real time information that can promote better decision making for the management of protected areas. Using analytical tools and databases supported by the project, Ya'axché will utilize the data collected to focus protection efforts on key locations. The knowledge from this data driven system will enable Ya'axché to develop evidence-based policies and action plans to improve the management of the MGL and other protected areas in Belize.
- 2.7. **Innovation.** This initiative will be the first in Belize to take a holistic approach for the management of forest protected areas by using digital technology and data analytics. It will pair visual and hearing technology into an integrated system that is driven by data analytics to manage the MGL. It will test technologies that could be key to improving management of the MGL and making more efficient use of resources. The use of drone surveillance and listening devices is well suited to the vast and rugged terrain of MMNFR and Bladen Nature Reserve, where human patrols cannot easily or safely reach, and it will extend the range of coverage provided by the rangers. Similar technology is being used by the World Wildlife Fund to monitor poaching and illegal activities in protected areas of Pakistan¹⁸.
- 2.8. In addition, promoting cocoa and beekeeping is also innovative as it seeks to demonstrate that certain types of agroforestry activities can enhance farmer livelihoods as well as improve management of protected areas. The project will test the use of technology for farm management and proposes the use of an off-the-shelf mobile app that will help beekeepers to manage their hives and use data insights to improve productivity. The app will serve as a management and productivity tool for the beekeepers. It will allow the producer to monitor the health of bee colonies, track input use, and performance of the hive over time. The app will facilitate regular record keeping and based on the data collected, it will present key indicators in a way that is visual and easier to understand. The mobile app works offline so that producers can collect data while in the field and then automatically upload to the cloud once connected to internet.
- 2.9. **Component I: Promoting climate-smart and sustainable farming practices to improve productivity (IDB Lab: US\$278,500; Counterpart US\$165,000).** The objective of this component is to improve the productive and business capacity of small-scale producers in buffering communities through improved farm management, practices, and inputs using technology. First, the project will develop advanced printed and digital curricula for cocoa production and beekeeping, which will include modules on small-scale farming as a business and financial education. Ya'axché extension agents will be trained and equipped to provide technical assistance and farmer field schools will be implemented in eight buffering communities.
- 2.10. For cocoa farmers, the project will undertake geo spatial mapping of farms and soil testing to determine the specific needs. The beneficiaries will include farms in the concession as well as cocoa farms located in buffering communities. A customized farm management plan will be created for each cocoa farm with

¹⁸ <https://gulfnews.com/world/asia/pakistan/pakistan-launches-smart-new-tool-to-protect-wildlife-1.61007582>

recommendations for planting, shade management, and optimization of yields. This will also be accompanied by recommendations as it relates to reducing costs and optimizing yields to maximize income. In addition, the TFCGA will receive support to professionalize its activities, improve governance and to provide value added services to its members such as collective marketing, as well as to meet the requirements of buyers. For beekeeping, the project will focus on providing knowledge and training to women and youth as it relates to hive management, quality, and entrepreneurial skills with the help of a mobile application. To facilitate market access, the project will help to formalize beekeepers into associations, improve traceability, and facilitate commercial linkages with local buyers (e.g. supermarkets, agro processors, hotels, and restaurants).

- 2.11. The expected outputs of this component are: digital curriculum developed for cocoa and beekeeping; 100 farmers trained in cocoa agroforestry and enterprise management; 60 farms with customized farm management plan; 30 individuals trained in beekeeping; 1 digital beekeeping tool in use; 1 farm management tool for extension agents; 5 extension agents trained.
- 2.12. **Component II: Leveraging technology to improve surveillance and monitoring of protected areas (IDB Lab: US\$112,500; Counterpart US\$100,000).** The objective of this component is to improve the management of protected areas using digital technologies. This component will support the development of a rapid assessment to better understand the gaps in the management of the MGL and then develop a technology use plan to ensure that the solutions selected are a good fit and they are deployed effectively. The range of technology solutions may include drones, cameras and motion detection devices, satellite imagery, and listening devices. The data collected by these devices will be consolidated into an integrated database which will be used to improve management of the MGL. This component will also build staff capacity at Ya'axché, through study tours and other training activities, to use digital technology for the management of protected areas.
- 2.13. The expected outputs of this component are: 1 rapid assessment and technology use plan; 1 integrated database, 10 Ya'axché staff and rangers trained in digital tools; 1 study tour.
- 2.14. **Component III: Engagement and Communication (IDB Lab: US\$41,000; Counterpart US\$87,000).** The objective of this component is to improve engagement with public and private stakeholders including potential scalars. The project will develop key knowledge products to communicate key results of the project. This component will also support improved advocacy work with stakeholders to consider new business models for protected area management in Belize and for awarding funding based on results and achievement of impact. The expected outputs of this component are: 1 updated communications strategy, 1 flagship report on the state of the MGL, and 1 case study on cocoa agroforestry and beekeeping in protected areas. These knowledge products will leverage data collected and compiled in the integrated database established by the project.

B. Project Results, Measurement, Monitoring and Evaluation

- 2.15. The project is expected to achieve the following results during the implementation period: 75 cocoa and honey producers adopting sustainable production processes and technologies; a 2-fold increase in cocoa production by the TFCGA; 2.5-fold increase in honey production by beekeepers; 550,000 acres under sustainable management using disruptive technologies; a 5 percent decrease in poaching, and illegal activities such as logging incursions, and extraction of nontimber forest products.
- 2.16. The integrated data platform for the project will serve as the main monitoring tool for collecting data and measuring project results related to conservation indicators in the MGL. This will be complemented by other monitoring tools that will be put in place to measure progress and results for cocoa farmers and beekeepers such as production, yields, and incomes. Ya'axché's monitoring and evaluation team will be responsible for collecting data and reporting on results and achievements. Progress in monitoring these indicators will be facilitated by georeferenced mapping systems.
- 2.17. Resources have also been allocated for a mid-term assessment and a final evaluation at the end of the project. The evaluations will use data from the integrated database put in place during the project. Several elements will be analyzed in the midterm report, including: (i) the rate of technology adoption for protected area surveillance; (ii) the adoption of sustainable agricultural practices by cocoa farmers and beekeepers; and (iii) strengthening of producer organizations and their commercial relationship with buyers. The final project outcomes will be evaluated and documented in a final evaluation. Key questions that may arise in the review of outcomes and impacts in the final project status report include: (i) How effective was the agricultural technology in terms of improved practices, yields, income? (ii) How effective was the digital technology in terms of cost, efficiency, and outcomes? (iii) How has the project helped to improve the farm business model for producers, especially women and youth?

III. Alignment with IDB Group, Scalability, and Risks

A. Alignment with IDB Group

- 3.1. The project is aligned with the IDB Institutional Strategy by supporting social inclusion, productivity, and innovation, and addressing crosscutting themes such as climate change and environmental sustainability. The project is aligned with the Agriculture and Natural Resources Management Sector Framework GN-2709-4 and complements the Environment and Biodiversity Social Framework document. It also addresses the IDB Lab priority area of climate-smart agriculture. The project is also aligned with two priority areas of the IDB Country Strategy for Belize (2013-2017)¹⁹. First, it is aligned with the priority area on tourism because it aims to preserve the natural capital of the Toledo district, which is growing in importance as a tourism region in Belize. The Belize National Sustainable Tourism Master Plan identifies eco-tourism in land nature reserves as an area of opportunity for

¹⁹ The 2013-2017 Country Strategy is in its first extension year that goes until December 2019. .

the country. Second, it is aligned with the pillar on trade and tax policy by improving the volume and quality of cocoa produced for export.

- 3.2. The project supports IDB Invest's priority business areas of increasing access of micro, small, and medium-sized enterprises to finance and technical assistance, supporting innovation, and fostering green growth. It also focuses on improving market linkages to agricultural value chains—a key sector of IDB Invest activities.
- 3.3. Approximately 100 percent of IDB resources allocated for this operation are to be invested in climate change adaptation and mitigation activities, based on the joint methodology of the multilateral development banks for tracking climate finance. These resources contribute to the IDB Group target of increasing financing for climate-related projects to 30 percent of approvals by the end of 2020.

B. Scalability

- 3.4. Ya'axché and PACT have a long-term financing partnership, which along with Ya'axché's own resources, will assist with funding the scaling of this project. The main path to scaling will be through PACT and the Belize Forest Department, who are the key partners for replicating the digital conservation model in other protected forest areas of the country. Scaling could also come from the government's bee-keeping strategy, seeking to offer support to the sector. In addition, this project will help to enhance the advocacy efforts of Ya'axché, in terms of targeted recommendations to the Government on protected areas, especially the concerns about transboundary illegal activity that is present in protected areas on the border with Guatemala.

C. Project and Institutional Risks

- 3.5. The project team has identified the following risks: Pest, disease, and climate events: crop diseases and climate events may affect yields, productivity and farm integrity. Mitigating action: Ya'axché will work with farmers to improve adoption of climate-smart practices and improved inputs in the management of cocoa farms and bee colonies. Specialized technical assistance and expertise from research institutes and universities can be contracted to provide additional expertise and guidance.
- 3.6. Market risk: Changes in the international market could cause a decline in the price of cocoa; Mitigating action: the project will to help cocoa farmers in the MGL to secure better market access and to differentiate their cocoa so that it is less vulnerable to global price swings.
- 3.7. Adoption of Technology: producers might not be interested in adopting the new technologies and applying protocols and standards taught in training. Mitigation action: farms will be selected by verifying their potential and willingness to adopt new practices and to comply with quality standards. In addition, the project will provide direct technical support to farmers through the retention of technical experts to provide hands on guidance, demonstration farms, and through regular supervision visits.
- 3.8. **Institutional Risks:** Based on the completion of the Diagnosis of the Agency's Needs (DNA), Ya'axché scored as medium risk as it relates to the procurement of

goods and services and fiduciary management and scored as low risk in technical and monitoring and knowledge management. To mitigate risks related to procurement and fiscal management, IDB Lab resources will be utilized to supplement the Ya'axché team with a contractual with strong fiduciary and monitoring skills to mitigate this risk.

IV. Instrument and Budget Proposal

- 4.1. The project has a total cost of US\$1,137,000, of which US\$574,000 (50.5%) will be provided by the IDB Lab, and US\$563,000 (49.5%) by the counterpart.
- 4.2. The instrument to be used is a non-reimbursable technical co-operation. Funds will also be used to develop a new business model for protected area management. The costs associated with the acquisition of the drones and its sensors and all other major assets under the project will be supported by Ya'axché with its counterpart funding.

Project Categories	IDB Lab	Counterpart	Total
Component 1: Promoting Climate-Smart & Sustainable Farming Practices to Improve Productivity	278,500	165,000	443,500
Component 2: Leveraging Technology to improve Surveillance and Monitoring of Protected Areas	112,500	100,000	212,500
Component 3: Engagement and Communication	41,000	87,000	128,000
Project Administration (Executing Unit costs)	117,000	211,000	328,000
Mid Term and Final Evaluation	10,000		10,000
Ex Post Reviews	15,000	-	15,000
Contingencies	-	-	-
Grand Total	US\$ 574,000	US\$ 563,000	US\$ 1,137,000
% of Financing	50.5%	49.5%	100%

V. Executing Agency (EA) and Implementation Structure

A. Executing Agency(s) Description

- 5.1. Ya'axché Conservation Trust will be the Executing Agency of this project and will sign the agreement with the Bank. The project will be implemented by Ya'axché Conservation Trust, a nonprofit foundation, established in 1998. The major objective of the organization is to bring harmony between nature and human development for the benefit of both. Ya'axché began its operations by providing management services in the Golden Stream Reserves which is a protected area owned by the indigenous community. Since then, Ya'axché has established credibility with the Government of Belize and was awarded the management agreement for two public protected areas, the Bladen Reserve and the Maya Mountain North Reserve. Currently, Ya'axché manages a total of 770,000 acre of protected land in the Maya Golden Landscape of southern Belize.

B. Implementation Structure and Mechanism

- 5.2. Ya'axché Conservation Trust will establish an executing unit and the necessary structure to execute project activities and manage project resources effectively and efficiently. Ya'axché will also be responsible for providing progress reports on project implementation. Details on the structure of the execution unit and reporting requirements are in Annex V in the project technical files.
- 5.3. Ya'axché will create a project advisory committee that will include PACT, the Forestry Department, and the Trio Farmers Cocoa Growers Association to govern the project implementation, manage risks and address challenges. Other organizations and research institutes such as International Center for Tropical Agriculture (CIAT) or The Tropical Agriculture Research and Higher Education Center (CATIE) may be invited to participate on an ad hoc basis. The advisory committee will also include a representative from IDB Lab to provide input and advice on changes that may be necessary to strengthen impact and achievement of project results as well as to foster connections with IDB Lab's technical partners in the region supporting knowledge sharing and regional scaling. The project advisory committee will convene on a semiannual basis or more often as necessary, to assess project progress, risks and take strategic decisions required to support achievement of results.

VI. Compliance with Milestones and Special Fiduciary Arrangements

- 6.1. **Disbursement by Results, Fiduciary Arrangements.** The Executing Agency will adhere to the standard IDB Lab disbursement by results, Bank procurement policy²⁰ and financial management²¹ arrangements as specified in Annex VI and VII, and any future policies and procedures.

VII. Information Disclosure and Intellectual Property

- 7.1. **Information Disclosure.** This document contains confidential information related to one or more of the ten exceptions to Access to Information Policy and will be initially treated as confidential and made available only to Bank employees. This document will be disclosed and made available to the public upon approval.²²
- 7.2. **Intellectual Property.** All work financed by the IDB Lab and the results obtained under the Project will be the intellectual property of the IDB. The IDB will grant a non-exclusive and free license to the Executing Agency, including the rights of dissemination, reproduction and publication in any medium of any product. The dissemination, reproduction and publication must indicate that it has been financed by the IDB Lab.

²⁰ Link to the Policy: [Procurement of Works and Goods Policy](#)

²¹ Link to the document [Financial Management Operational Guidelines](#)

²² [Link to the Access to Information Policy](#) and to the [MIF Document Classification](#)