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IMPLEMENTATION COMPLETION AND RESULTS REPORT

TF013280

ON A

SMALL GRANT

IN THE AMOUNT OF USD 1.5 MILLION

TO THE

Caribbean Industrial Research Institute, Scientific Research Council

FOR

Caribbean Climate Innovation Center (P131734)

November 22, 2019

Finance, Competitiveness And Innovation Global Practice
Latin America And Caribbean Region

Acting Regional Vice President: J. Humberto Lopez

Country Director: Tahseen Sayed Khan

Regional Director: Robert R. Taliercio

Practice Manager: Zafer Mustafaoglu

Task Team Leader(s): Elaine A. Tinsley

ICR Main Contributor: Elaine A. Tinsley

ABBREVIATIONS AND ACRONYMS

CAD	Canadian dollar
CARICOM	Caribbean Community
CARIRI	Caribbean Industrial Research Institute
CBIN	Climate Business Incubator Network
CCIC	Caribbean Climate Innovation Center
CIC	Climate Innovation Center
CTP	Climate Technology Program
EPIC	Entrepreneurship Program for Innovation in the Caribbean
IGS	Idea Generation Sessions
IP	Intellectual Property
POC	Proof of Concept
SME	Small and Medium Enterprise
SRI	Scientific Research Institute

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P131734	Caribbean Climate Innovation Center
Country	Financing Instrument
Caribbean	Investment Project Financing
Original EA Category	Revised EA Category

Organizations

Borrower	Implementing Agency
Caribbean Industrial Research Institute, Scientific Research Council	Caribbean Climate Innovation Center



Project Development Objective (PDO)

Original PDO

The objective of this project is to strengthen the Caribbean Climate Innovation Center (CCIC) capacity so that it can best support clean tech entrepreneurs in developing locally-appropriate solutions to climate change mitigation and adaptation and strengthen their capacity as they grow.

The CCIC supports Caribbean clean tech start-ups/SMEs by providing grant funding, advisory services (including mentoring, incubation services and technical assistance), and through its coordination, networking and outreach efforts, the CCIC aims to facilitate greater transfer of knowledge, know-how and experience among Caribbean climate technology firms. In parallel, the CCIC also facilitate the creation of new investor networks, enabling ventures in the Caribbean to capitalize on increased investment opportunities and access to follow-on funding.

The CCIC is part of a broader program of support to Caribbean entrepreneurs, the Entrepreneurship Program for Innovation in the Caribbean (EPIC), financed by the Canadian government. The CCIC is also benefits from its association with World Bank’s Clean Tech Program (CTP) and its Climate Innovation Centers (CIC) Network, a global network of similar centers supporting clean tech climate entrepreneurs. The CCIC is implemented and overseen by a consortium consisting for Scientific Research Council (SRC) in Jamaica and CARIRI in Trinidad and Tobago. Based in Jamaica, the CCIC also works with voluntary partner hubs in 13 Caribbean countries to extend its services.

FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
Donor Financing			
TF-A0081	1,500,000	1,500,000	1,500,000
Total	1,500,000	1,500,000	1,500,000
Total Project Cost	1,500,000	1,500,000	1,500,000

KEY DATES

Approval	Effectiveness	Original Closing	Actual Closing
27-Mar-2015	22-Apr-2015	30-Nov-2017	31-Jan-2019

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
30-Nov-2017	1.39	Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s) Change in Implementation Schedule
30-Nov-2018	1.45	Change in Loan Closing Date(s) Change in Implementation Schedule

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Satisfactory	Satisfactory	Modest

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	02-Jun-2017	Moderately Satisfactory	Moderately Satisfactory	0.89
02	21-Apr-2018	Satisfactory	Moderately Satisfactory	1.39

ADM STAFF

Role	At Approval	At ICR
Regional Vice President:	Jorge Familiar Calderon	J. Humberto Lopez
Country Director:	Sophie Sirtaine	Tahseen Sayed Khan
Director:	Anabel Gonzalez	Alfonso Garcia Mora
Practice Manager:	Klaus Tilmes	Zafer Mustafaoglu
Task Team Leader(s):	Diletta Doretti	Elaine A. Tinsley
ICR Contributing Author:		Elaine A. Tinsley



I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. Context

The Caribbean region has endured years of slow growth, high unemployment, limited fiscal space and growing social problems. Underlying the growth gaps are low levels of productivity and competitiveness in the region. Productivity in the Caribbean region continues to be low and trailing that of other emerging economies/regions, a result mainly attributable to weak public institutions and a weaker private sector. The region's private sector is dominated by smaller, older and less open firms that are predominately locally owned and operate in small and medium-sized localities.¹ Building the growth engines of the region will depend on its capacity to boost a dynamic and innovative private sector.

The Caribbean region also faces disproportionate negative impacts from changing climate despite its small global greenhouse gas footprint. The islands share a high degree of vulnerability to sea level rises, degradation of natural ecosystems, extreme weather events, and water supply constraints due to climate change. Moreover, the Caribbean is particularly susceptible, given the reliance on expensive imported fossil fuels and other resources that contribute further to the region's environmental and economic difficulties. Lastly, the key sectors in the region such as tourism, fishing, agriculture, energy and water supply must adopt new and innovative approaches and solutions to mitigate and adapt to climate change, to ensure energy and resource security and to contribute to the green growth and economic development of the region.

Sector Context

In 2012, an assessment was done on the demand for incubation services for entrepreneurs, including clean tech entrepreneurs. The report found that there were several promising factors that would increase the demand for clean tech incubation services. These included a high potential for renewable energy; numerous investment opportunities in energy efficiency, particularly in the areas of lighting, cooling, transportation, and industrial production; capabilities for biofuel and wind energy production; and numerous waste-to-energy applications. These opportunities however were tempered by the lack of regulatory framework in some Caribbean countries, lack of investment/consumption incentives in the green sector, general limitations on access to finance, limited availability of technical experts requiring more expensive foreign consultations, and overall lack of public awareness of the goods and services in the sector and their potential cost savings and benefits. The study concluded that while climate technology was as an important government and societal priority, it was not yet perceived as a business opportunity and therefore there was a great opportunity for incubation services to help kick-start business activity in the sector. The report recommended broadening the scope beyond renewable technology to attract sufficient demand for incubation services, hence the idea of a climate technology incubator (or Climate Innovation Center, CIC) was seen as quite opportune.

The Entrepreneurship Program for Innovation in the Caribbean (EPIC), a CAD 20 million program funded by the Government of Canada aimed to address the region's challenges and contribute to a more prosperous Caribbean community. EPIC aimed to achieve this development objective by creating an enabling ecosystem for innovative, technology enabled enterprises, whose growth would have a multiplier effect across the Caribbean region, specifically in the Caribbean Community (CARICOM) member countries. EPIC consisted of three core activity pillars: mobile innovation, climate technology, and women-led entrepreneurship. These pillars were complemented by an

¹ World Bank. 2008. Enterprise Surveys. Washington, D.C: World Bank



access to finance facility for Caribbean entrepreneurs, and a skills upgrading and capacity development program for all ecosystem stakeholders. These stakeholders include entrepreneurs, business enablers, policymakers, universities, seed and early stage investors, and other private sector partners.

One of the main pillars of the EPIC program is the Caribbean Climate Innovation Center (CCIC), aimed at supporting entrepreneurs and SMEs involved in developing profitable and locally-appropriate solutions to climate change. The CCIC supports Caribbean clean tech start-ups/SMEs by providing grant funding, advisory services (including mentoring, incubation services and technical assistance), and through its coordination, networking and outreach efforts, the CCIC aims to facilitate greater transfer of knowledge, know-how and experience among Caribbean climate technology firms. In parallel, the CCIC also facilitate the creation of new investor networks, enabling ventures in the Caribbean to capitalize on increased investment opportunities and access to follow-on funding.

The CCIC is implemented and overseen by a consortium consisting of the Scientific Research Council (SRC) in Jamaica and CARIRI in Trinidad and Tobago. Based in Jamaica, the CCIC also works with voluntary partner spokes in 13 Caribbean countries to extend its services. The CCIC also benefited from its association with World Bank's Clean Tech Program (CTP) and its Climate Innovation Centers (CIC) Network, a global network of similar centers supporting clean tech climate entrepreneurs.

Relevance. CCIC's operations aligned with the World Bank Organization for Eastern Caribbean States (OECS) Regional Partnership Strategy for FY15-19, which looks at increased innovation and entrepreneurship as means for enhancing OECS country competitiveness. Innovation and entrepreneurship are limited in the OECS, as exemplified by the percentages of firms that develop or introduce new products. In this context, climate technology enterprises, like the ones supported by the CCIC, could help traditional industries, such as tourism and agri-processing, to mitigate and adapt to climate change challenges and ensure energy and resource efficiency. Through its services, the CCIC would address these challenges by building local entrepreneurial capacity to deliver regionally appropriate climate solutions that can be transformational for the region.

B. Project Development Objectives (PDOs)

The objective of this project was to strengthen the Caribbean Climate Innovation Center's (CCIC) capacity so that it can best support clean tech entrepreneurs in developing locally-appropriate solutions to climate change mitigation and adaptation and strengthen their capacity as they grow.

C. Key Expected Outcomes and Outcome Indicators

PDO level results indicator

1. Number of businesses/entrepreneurs receiving proof of concept grant.
2. Number of firms with additional access to financing.
3. Number of participants in workshops, training events, seminars, conferences etc
4. Number of CCIC organized training events.

As part of the EPIC program, the following key outcome indicators were also tracked:

- Amount of investment raised by growth-oriented entrepreneurs in the Caribbean.
- Number of products commercialized by EPIC GO-entrepreneurs (regional and international).
- Number of jobs created.



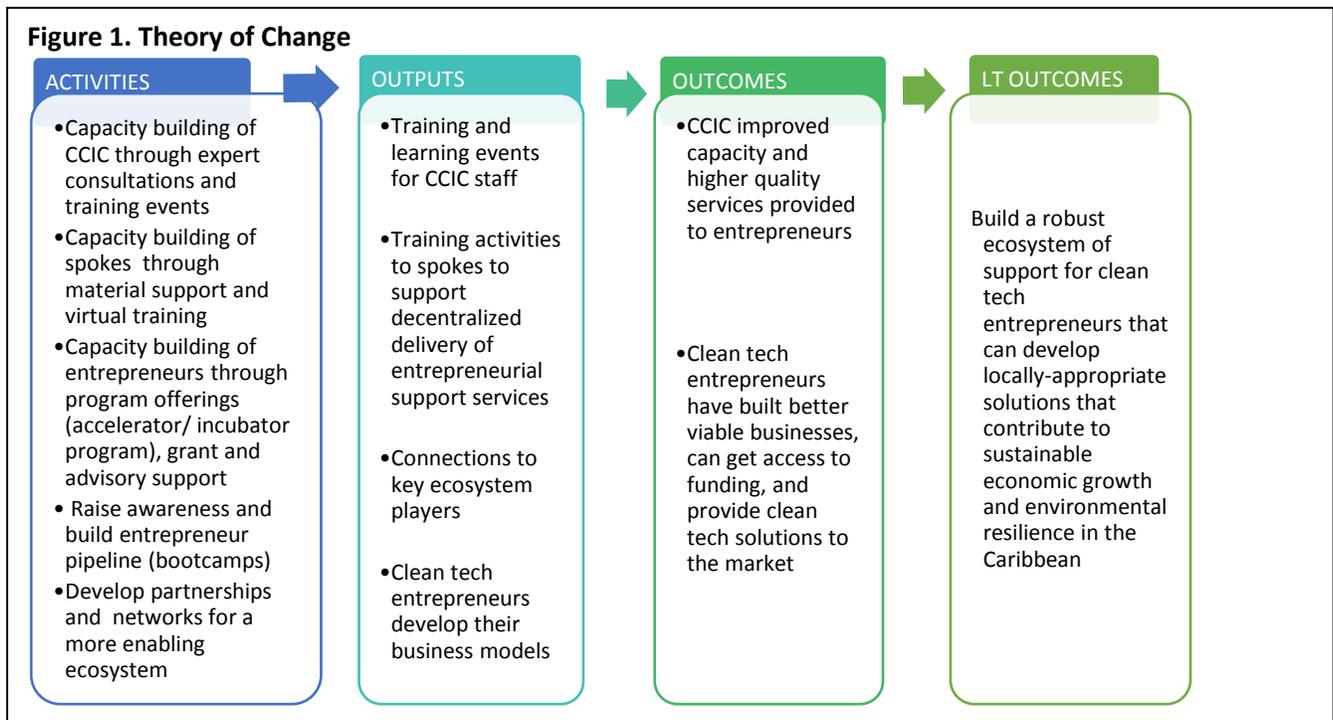
D. Components

EPIC has a regional mandate that informed the design of the program’s components. The “Hub and Spoke” approach forms the core of the regional strategy and seeks to build effective regional networks for each component. In accordance with the EPIC “Hub and Spoke” model, the hubs (key implementing partners) are responsible for overall coordination of specific component activities. The in-country spokes have key roles including identification of potential deal-flow, awareness raising, local stakeholder engagement and outreach, data collection, as well as facilitating peer-to-peer learning, knowledge sharing, and dissemination.

The CCIC recipient-executed portion focused on providing support to clean-tech entrepreneurs through a hub and spokes model and focused on the following activities: build a pipeline of growth-oriented entrepreneurs, strengthen capacity of the entrepreneurs, facilitate access to early growth-stage capital and capture and disseminate knowledge. The bank-executed portion, in addition to supervision, provided capacity building support to the CCIC to improve its service offerings and long-term sustainability.

E. Theory of Change

The Theory of Change was that by building up the capacity of the newly established CCIC, it would develop a strong program of support to clean tech entrepreneurs, including grants, business advice, networking and mentoring. This would enable the entrepreneurs to thrive and develop more viable, scalable clean tech businesses. Given the fragmented nature of the Caribbean islands, the CCIC would also conduct training and distribute relevant training materials to spoke partners to build their capacity to better serve their entrepreneurs. By developing enablers across the Caribbean, this would lead to improvements in the clean tech entrepreneurial ecosystem.



Key assumptions to Theory of Change:



- The spokes partners would be motivated to be voluntarily engaged in the program as a means of building their capacity and offerings to their entrepreneurs.
- There is a strong pipeline of clean tech businesses.
- CCIC can identify and provide/connect the entrepreneurs with the appropriate range of services that will lead to better business models that will then attract additional investment and financing.

F. Changes to Project

At the request of the Recipient, the project underwent a Level 2 restructuring in November 2017. The closing date was extended by 12 months from November 30, 2017 to November 30, 2018. The extension was to allow enough time for the Recipient to complete implementation of the project components, achieve targeted outcomes of the project indicators, and for CCIC to build its reputation and sustainability prospects.

In November 2018, another request was made by the Recipient to extend for an additional two months to January 2019 to complete planned activities, utilize the project funding and improve sustainability. A Level 2 restructuring was undertaken and approved, with no changes made to the results framework.

CCIC Program Offerings. The project was originally designed to provide grants (up to \$50k) and capacity building for entrepreneurs at the more advanced proof of concept stage. However, as the pipeline for such entrepreneurs was quite weak, the CCIC shifted activities to focus on building the pipeline through awareness building activities, such as Idea Generation Session (IGS) and Cleantech Bootcamps. An accelerator program was also developed to provide more in-depth support to promising entrepreneurs. The results framework was refined to better reflect the change in program offerings that previously focused on fewer more experienced entrepreneurs, to a larger set of early-stage entrepreneurs.

There were no changes to the PDO.

II. OUTCOME

Assessment of Achievement of Each Objective/Outcome

The key objective of the project was to strengthen the Caribbean Climate Innovation Center's capacity so that it could best support clean tech entrepreneurs in developing locally-appropriate solutions to climate change mitigation and adaptation and strengthen their capacity as they grow. Achievement of this objective will be assessed by examining 1) improvements in the capacity of the CCIC, 2) assessment of their support to the spokes and 3) improvement of the capacity of entrepreneurs. Information to undertake this assessment comes from several sources, including an extensive EPIC end-program evaluation by Deloitte that undertook key stakeholder interviews, country visits, and program documentation reviews; extensive quarterly M&E reports that captured over 50 indicators on entrepreneur and CCIC's performance, and standardized incubator assessment tools developed under the Climate Technology Program.



1. Improving the Capacity of the CCIC

One of the key objectives of the project was to improve the capacity of the CCIC to support its entrepreneurs, and often this is measured in terms of entrepreneurial outcomes such as increased access to financing, products commercialized, and jobs created. Data on the above was collected on a quarterly basis from the CCIC. Based on the data collected, over the course of the project, CCIC entrepreneurs raised \$703k in financing, commercialized 50 products, and created 128 new jobs.

However, clean tech entrepreneurial outcomes, particularly in nascent clean tech ecosystems with a thin network of actors, can take several years to achieve. Recognizing that assessing climate incubators based on entrepreneurial outcomes would not fully reflect the growth and development of the Climate Innovation Centers (CICs), an Incubator Benchmark Assessment Toolkit (IBAT) was developed to standardize evaluation across the CICs on 1) program offerings to the entrepreneurs and 2) CIC's operational management. The ratings are based on a scale of 0-4, with 0 indicating no offering and 4 indicating global best practice, with the idea that over time the incubator would progress to the outer edges, however they may selectively choose which dimensions are priorities—and while some scores are composite averages of different elements, there is no single global score.

Figure 2 denotes the growth in the CCIC capacity development on both dimensions, as captured for 2016 and 2018. The 2016 figures are the CCIC's retroactive self-assessment based on defined criteria, and the 2018 figures are a combination of the CCIC's self-assessment and the TTL's. The scores are also confirmed by their alignment with the quarterly data collection that was done by the CTP's monitoring and evaluation team. The 2016 year was selected as it was CCIC transitioned from supporting Proof of Concept (PoC) entrepreneurs to its current broader program offerings.

On CCIC's service offerings, there was notable growth in all dimensions, indicating an improvement in quality and consistency of programming.

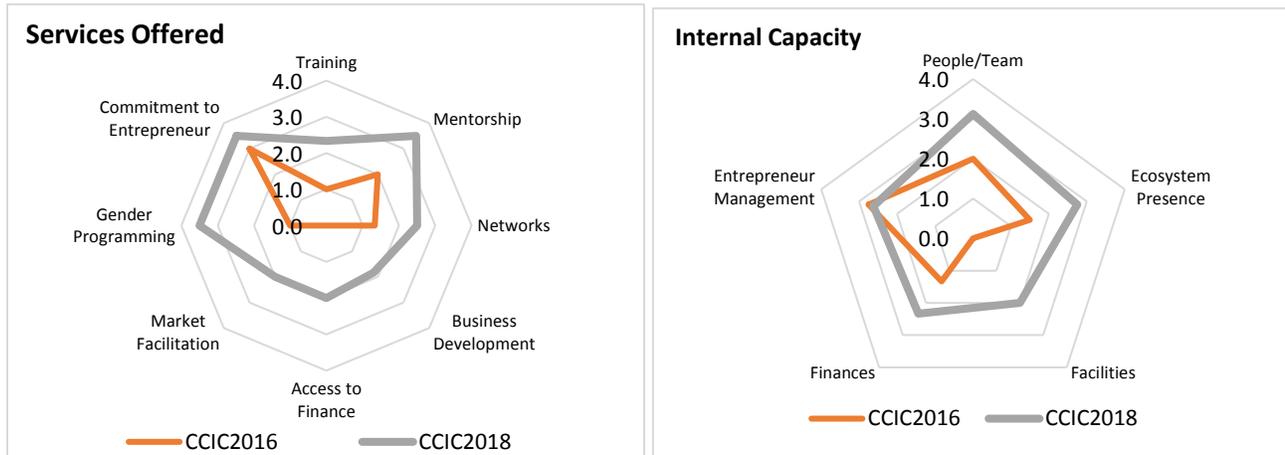
- On training, the training score improvements came from several key activities, including the development of online business training modules -- a key offering to entrepreneurs spread across the Caribbean; high quality delivery of "green tech" bootcamps, for which CCIC built the inhouse capacity to deliver; and improvements in their accelerator program to provide more customized support. CCIC also went from a cohort of 3 in their accelerator program to supporting a cohort of 13.
- On mentorship, score improvements are based on the build out of a database of strong, local and regional mentors, participation in an online mentoring platform (MicroMentor) to expand mentoring opportunities for remote entrepreneurs, and a mentoring partnership with the Cherie Blair Foundation added a concrete offering for women entrepreneurs.
- On networks, most of the score improvement was due to a building of a vibrant entrepreneurial community which enhanced peer learning and knowledge exchanges, which entrepreneurs have rated as one of their favorite benefits of the program.
- On business development services, the score remains weak. While CCIC staff better understand the needs of entrepreneurs; the CCIC still requires an improved understanding of more complex business process challenges faced by entrepreneurs, such as patenting requirements, testing and standards, importing/exporting processes, etc.
- On access to finance, as CCIC has matured, they have made better connections with financial institutions and clean tech funding opportunities to provide more financing opportunities for their entrepreneurs, with



their entrepreneurs often winning business competitions.

- Market facilitation remains rather weak and not an area the CCIC has focused on developing, not surprising as the bulk of their portfolio of entrepreneurs are still early stage.
- On gender programming, CCIC has made notable strides including their ongoing relationship with the Cheri Blair foundation to support women entrepreneurs and the delivery of a women’s bootcamp. Gender ratios for female participation in CCIC bootcamp events is roughly 30 percent compared to nearly 100 percent male participation for the first cohort of the accelerator.

Figure 2. Assessment for CIC Services and Internal Capacity, 2016 and 2018



In terms of internal capacity, CCIC has also made progress in almost all dimensions.

- **People/Team.** In the early days of the program, CCIC management was weak but the entry of a new entrepreneurial minded program manager in 2016 has helped CCIC to turn around and develop a stronger and more agile program of support to the entrepreneurs. CCIC staff has strived to build in house capabilities, relying less and less on consultant, such as delivery of bootcamps which used to be done by consultants.
- **Ecosystem Presence.** CCIC is recognized not just in the Caribbean, but also internationally, for their work with clean tech entrepreneurs. CCIC has been requested to present in several regional and international conferences, workshops and seminars which speaks to their reputation in the region. Moreover, they have developed both financial and non-financial partnerships with several entities across the Caribbean. CCIC has developed over
- **Facilities.** During the project, CCIC remodeled an underutilized library space into a co-working space with hopes of generating revenues to cover 10-15% of operating costs. While leasing out the space has not gone as expected, it has served to offset CCIC’s costs for external training space, as this can now be done onsite.
- **Finances.** Most of the financial management was taken care of through SRC, which once the project completed would need to then be done by CCIC. During the project period, CCIC was able to raise its own revenues (\$150k), about 10% of the CCIC grant or around 10 months of operating costs, based on service contracts.



- **Entrepreneur Management.** This was the one dimension that deteriorated slightly—however this is a reflection that in the earlier days there were far fewer entrepreneurs to manage. The growing portfolio of entrepreneurs across all stages, but with the same staff, stretched their ability to manage more effectively.

2. Improving the Capacity of the Spokes

Spokes² were supported through numerous activities, including involvement in global competitions for their entrepreneurs, training and hot topic webinars, access to online training platform for their entrepreneurs, access to online mentoring platform, and in-person bootcamp training. The results are mixed in terms of the project's success in raising the capacity of the spokes. Unlike the digital program in EPIC, the relationship between CCIC and the spoke leads was voluntary and not a paid arrangement. This created some tension, as spokes were expected to provide and report on services but were not paid. For some spokes, this was not an issue as they were motivated enough to receive the additional support and were quite active in the rollout of the programs. For others, there was less engagement and hence lower capacity building. In part, this also reflected that the local demand for entrepreneurial support services was not uniform across the countries, and there was no customization to a country's local ecosystem context.

In interviews with select spoke leads, the value added of the CCIC program was noted. The CCIC increased the capacity of the spoke in Barbados to incorporate concepts of green technology and sustainability into their work with other sectors and contributed to increasing the capacity of the spoke lead in Antigua and Barbuda to apply the CCIC's best practices to their work with clients. Enablers in Jamaica, Barbados, and St. Lucia observed that before the CCIC, there were no entrepreneurship development programs to support entrepreneurs in the climate innovation sector as it was a relatively new sector, and that governments typically focused on disaster risk reduction and therefore lacked an understanding of green technology and the opportunities in the sector. As a new sector, this led to challenges finding clean tech entrepreneurs in some of the smaller countries such as in St. Lucia and in Antigua and Barbuda. The CCIC however contributed to bringing awareness to the possibilities of innovating in the sector across the region, for example through their Greentech bootcamps.

3. Improving the Capacity of the Entrepreneurs

Overall, CCIC provided capacity building to over 1000 entrepreneurs in over 14 countries across the Caribbean, CCIC provided over 78 workshops and training events—well exceeding original targets of 15 PoC entrepreneurs and 7 workshops. CCIC entrepreneurs raised over \$700,000 in investment and commercialized over 50 products, with 7 prototypes registered with the intellectual property offices. There were two levels of support that CCIC provided to entrepreneurs – the lighter touch Greentech bootcamps to introduce aspiring entrepreneurs to the clean tech sector, and the more in-depth PoC, accelerator and incubation programs.

Proof of Concept. Initially, the CCIC embarked on a PoC competition as a pipeline development tool to identify clean tech entrepreneurs with innovative solutions for its portfolio of clients. This competition yielded more than 300 applications from 14 CARICOM countries. After careful due diligence, the CCIC awarded grants to 11 projects from

² The 13 spokes are located in Trinidad and Tobago, Barbados, Dominica, St Vincent and the Grenadines, Antigua and Barbuda, Monserrate, St Kitts, Belize, Suriname, Guyana, St Lucia, Grenada, and Guadeloupe.



seven different countries in the region. The 11 entrepreneurs were tracked based on agreed milestones; however, after assessing the PoC initiative, the CCIC found that most of the entrepreneurs lacked the requisite business education to move from the idea and prototype stage to commercialization. The CCIC learned that grant funding alone is not enough for entrepreneurs—tailored courses would be required to fully support, develop, and scale some of these entrepreneurs to increase their success.

With the lessons garnered from the PoC's challenges, the overall CCIC project model was reviewed and Management Committee decided the modality of CCIC operations and services needed to be changed to improve the pipeline for clean tech entrepreneurs. The new modality included green business boot camps and accelerator programs. Through these programs, entrepreneurs benefitted from a suite of services that included business education, mentorship, coaching, access to grants, access to markets, access to office space and technology, and commercialization know-how. CCIC also shifted to supporting businesses at different stages (from ideation to growth) and the provision of segmented services to greater number of entrepreneurs resulted in increased awareness and investment in the ecosystem.

Idea Generation Session and Bootcamps. Over the course of the project, CCIC delivered over 14 in-country 3-day workshops in 13 countries across the Caribbean—including a 2-day bootcamp that normally had between 30-75 new entrepreneurs participating. The Idea Generation Session (IGS)—which invited key public officials from different Ministries to talk about the climate change or environmental challenges the country, with the idea that entrepreneurs could come up with solutions to resolve them (e.g. tire waste, cook oil waste, chemical disposal, etc) and entrepreneurs then spent the rest of the day brainstorming solutions in preparation for the follow up bootcamp. The Caribbean Greentech Startup Bootcamp was a major pipeline development tool for encouraging and surfacing new green tech entrepreneurs in the Caribbean, some of which could then feed into CCIC programs. Entrepreneurs with existing business ideas (and those at the IGS) attended for basic business education and mentorship guidance to then matriculate into the accelerator and incubator programs. Partners were either from the government, quasi government, or private sector corporations. The CCIC also offered a women-only boot camp that was tailored to the needs of women and attracted participants from Antigua, Grenada, St. Kitts & Nevis, St. Lucia, and St. Vincent and the Grenadines. Winners of the bootcamps were invited to participate in the accelerator program. However, given boot camps ended up targeting mainly idea stage businesses, this weakened the caliber of businesses that matriculated into the accelerator. That said, beneficiary feedback on the bootcamps was extremely positive and high, as many had never been exposed to a business plan competition and the bootcamps helped them see how to better think through and present their business ideas.

Accelerator Program. The CCIC accelerator was typically implemented over 6–8 months, and there were two cohorts during the project. The program includes key stakeholders in several countries. By engaging the companies through discussions, team building, partnerships, and workshops, the CCIC helped committed entrepreneurs to develop their business ideas, validate their prototypes, and generate interest from angel investor networks.

The CCIC developed and rolled out its inaugural accelerator in collaboration with Start-Up Jamaica in downtown Kingston. The call for program, which targeted businesses at the prototype to commercialization stage, only yielded three participants who came through the boot camps held in Jamaica and St. Lucia. This was a six-month pilot before the rollout across the region in June 2016. The entrepreneurs engaged in a physical program; those from St. Lucia came to Jamaica for the pilot.

After the pilot, an assessment was done, and the analysis led the CCIC to create a virtual program with a robust

curriculum. Doing so, allowed more than 23 entrepreneurs from across six countries to access the program. Entrepreneurs accessed presentations through virtual platforms, such as Clientbizz, Zoom, and the Bank’s Open Learning Campus. This gave the CCIC the opportunity to offer these sessions along with other courses to entrepreneurs across the region.

The program facilitated a second cohort of entrepreneurs (Table 1). In the first cohort, the program helped three revenue-generating companies to improve their business models and validate their innovative solutions. The second cohort had 12 active companies participating, and with an aim to fulfill the CCIC mandate as a regional entity, companies were recruited from five CARICOM countries. The entrepreneurs comprised, three at the idea stage, four validated their prototypes, and five achieved commercialization and were applying best practices to grow and scale their businesses.

Table 1. Second Cohort of the CCIC Accelerator Program

Tier	Company	Country	Thematic
Ideation	Local App	Antigua	Sustainable Agribusiness
	Hive Inc.	St. Lucia	Sustainable Agribusiness
	Red Diamond Inc.	Barbados	Waste Management
Validation	PreeLabs	Jamaica	Energy Efficiency
	Eze Green Energy Company	St. Lucia	Waste Management
	Integral Recyclers Limited	Jamaica	Waste Management
	Kaiser Green Energy Company	Jamaica	Renewable Energy
Revenue	360 Recycle Manufacturing Ltd.	Jamaica	Waste Management
	LumiTech International Ltd.	Jamaica	Renewable Energy
	Greening the Caribbean	St. Lucia	Waste Management
	Durga’s Den (Ecolodge)	Jamaica	Resource Use Efficiency
	ProtoFab TT	Trinidad & Tobago	Renewable Energy

As a result of the expanded program offerings, CCIC enhanced the performance and competitiveness of entrepreneurs. Implementing partners interviewed acknowledged that during the project implementation period, the CCIC contributed to commercializing seven businesses from the prototype stage, of which the overall program target for EPIC was 30 products commercialized. However, from the Deloitte evaluation, limited evidence was shared with the evaluation team on the CCIC’s ability to enhance the competitiveness of entrepreneurs, with only a few examples shared of entrepreneurs who have been successful in launching their businesses and in some cases accessing additional funding. However, implementing partners also commented that in order to be competitive, beyond funding, CCIC entrepreneurs at the proof of concept stage also needed continued mentorship, access to markets and training in pitching and how to access funding. Another CCIC representative observed that the CCIC’s shift to one-on-one consultancy was adding significant value to supporting entrepreneurs.

Assessment of Relevance and Efficiency

Relevance: The program was relevant because of focus on entrepreneurship for private sector growth and climate innovation given the challenges with climate change events. The impact of climate change is becoming increasingly



important in the Caribbean, especially in light of some of the devastating impact it can have on some key industries such as tourism. Furthermore, as the Bank seeks new venues to mobilize finance for development and the incorporation of private sector involvement in development, supporting innovative clean tech entrepreneurs helps roll out those solutions. CCIC's support was relevant to the needs of entrepreneurs who were emerging in the niche sector, with the CCIC being the first of its kind for climate entrepreneurs in the region, as observed by stakeholders interviewed. This was evidenced by the high demand and participation for bootcamps. Likewise, those in the accelerator programs remained heavily engaged. Moreover, through CCIC's activities, there is growing awareness and appreciation for what climate change entrepreneurs can do, e.g. CCIC's entrepreneurs are tackling the beach invasion of sargassum by converting it to goat feed and plant fertilizer, creating economic opportunities while solving a tourism-crushing calamity.

Efficiency: For the \$1.5 million of project financing, the project performed efficiently when examining the impact it made in terms of the number of entrepreneurs it reached and the changes in the ecosystem it helped bring about as discussed in more detail below. Additional efficiency gains were made by collaboration with other entities in the ecosystem, including banks and universities. For example, the CCIC leveraged a partnership with the Caribbean Development Bank that paid for several of the bootcamps, which expanded the in-person outreach that the CCIC could undertake and trained even more potential entrepreneurs. The use of partnerships also freed resources to be used to establish the CCIC as a legal entity, which allowed them to fundraise and take on contractual work, thereby enabling them to sustain the activities under the project.

The project also leveraged benefits from CCIC being part of the CTP project. First, as CCIC was part of the CTP's Climate Business Innovation Network, there were efficiency gains in capacity building of CCIC staff whom were able to participate in several international training events and study tours. Through CBIN, CCIC staff were able to learn from the experience of other CICs as well as to share their own best practices. Second, through the CTP program, there was systemized quarterly monitoring and reporting of all the CICs, including the CCIC. Data collected tracked entrepreneur outcomes as well as CCIC outreach.



Overall Outcome Rating

The overall outcome is **Satisfactory**. The project successfully met or exceeded the indicators in the results framework, particularly in terms of number of entrepreneurs supported and service offerings. The project also achieved its objectives of improving the capacity of the CCIC to support clean tech entrepreneurs. The number of entrepreneurs reached was much higher than originally envisioned and captured a larger spectrum of entrepreneurs across their development stage. The number of entrepreneurs accessing additional financing—and as evidence of the improvement in their business models—also exceeded original targets. More importantly, has been the broadening of the CCIC program offerings, including its ability to provide virtual training, mentorship and financing opportunities to a wider range of clean tech entrepreneurs across the region. Additionally, CCIC has made an impact on raising the awareness raising of the sector which will support building the pipeline of future clean tech entrepreneurs.

Other Outcomes and Impacts

One of the key impacts of the CCIC activities has been the increase in awareness of the climate change entrepreneurs—for all stakeholders. Previously climate change innovation was often not a political consideration—with governments more interested in disaster mitigation than climate change, however through the CCIC’s activities governments are being socialized on the societal benefits these entrepreneurs bring, whether is converting plastic waste into playground structures, or regenerating car batteries to keep them out of landfills. Likewise, through the IGS (Idea Generation Sessions), government officials have articulated their environmental and climate change problems, giving entrepreneurs a chance to identify market opportunities they could be address.

In addition to awareness, the CCIC activities have helped build up the overall enabling ecosystem. As interest in the topic has grown, other stakeholders have come to the forefront, including financial institutions that are now providing financing packages for clean tech entrepreneurs (e.g. Development Bank of Jamaica), and universities that have broaden their educational offerings in climate business (e.g. University of Technology of Jamaica’s Masters in Climate Business) and even place summer interns with CCIC’s entrepreneurs.

Beyond local networks, though the CCIC’s engagement with the other global CICs has expanded its network globally. CCIC has become recognized as the go to institution for supporting climate entrepreneurs. This is evidence, for example, in its partnership and implementation of the Climate Launchpad, a global competition that sources promising innovative clean tech entrepreneurs through national and regional competitions.

CCIC program also helped build up SRC’s institutional capacity to support other entrepreneurs as they were exposed to ideas, tools and practices that the CCIC deployed to generate interest and to support entrepreneurship (e.g. bootcamps, mentorship). The CCIC project also established a foundation for CARIRI and the SRC to collaborate across the region. CARIRI representatives shared an interest in continuing to support the CCIC, such as through establishing an MOU to partner with CARIRI’s Award for Innovation.



III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

The original project design anticipated a stronger set of PoC entrepreneurs to support, with some Key Performance Indicators designed for more advanced revenue building entrepreneurs. After a progress review, in September 2015, the CCIC Management Committee recognized the limited impact the project would have focusing on a small number of PoC entrepreneurs, and therefore altered the program offerings of the CCIC to transform into an ecosystem building entity that supported a broader stage of clean tech entrepreneurs as well as raise awareness on the topic to help build a future pipeline of entrepreneurs. The switch in program offerings also necessitated a switch in the program manager. The new program manager brought a more entrepreneurial mindset on running the CCIC, with the result that CCIC sought more partnership opportunities (both financial and non-financial) and CCIC became more engrained in the Caribbean entrepreneurial ecosystem. As a result, more awareness was spread on the climate change entrepreneurs and entrepreneurs themselves benefited from CCIC's broader network of partnerships.

Entrepreneurs also cited a lack of government policies and incentives for entrepreneurship such as a lack of tax incentives and an outdated IP, and an overall low risk and low trust culture among entrepreneurs regarding the protection of their ideas. In order to increase awareness among policy makers, EPIC held a policy makers workshop in 2016 and also invited them to attend the various EPIC meetings and events. One way the project sought to address these trust concerns was to provide a virtual mentoring program that would connect entrepreneurs with global mentors not competing in their space.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

The Bank's Performance is rated **Satisfactory**. Throughout the project the Bank remained well engaged with CCIC, both through a local operations officer and with the HQ TTL, providing advice, relevant technical assistance and capacity building for the CCIC. This included providing key expert consultants that helped the CCIC shift from PoC support to developing CCIC's broader program of activities. The Bank also facilitated CCIC staff training with other global CICs (Vietnam CIC, Morocco CIC, Kenya CIC, South Africa CIC, and Nigeria CIC) and other clean tech enablers (from Bangladesh, Egypt, India) for peer knowledge learning opportunities and ecosystem study tours in other countries (including Kenya, South Africa and Ghana), which helped CCIC improve their operations and program offerings.

Compliance. There were issues surrounding the timely submissions of the IFRs, in part this reflected the complications of having a consortium arrangement with fiduciary control in one institution but execution with another agency in a different country. During the restructuring, FM arrangements were streamlined and more reporting responsibility shifted to SRC to help resolve these bottlenecks. However, while IFRs were submitted late and frequently needed assistance from the FM specialist, they were deemed acceptable. The audit report was one month late and submitted in June 2019, However, all relevant documents submitted, reconciled to the Bank's records per Client Connection, and therefore was deemed to be acceptable.

Risk to development outcome. The sustainability risk of the CCIC is high. As with most incubator operations, especially in emerging economies, these generally require a high degree of donor funding. During the project, the CCIC became a legal non-profit entity and is still in operation nine months after project funding has ended. The business model has been adapted to generate revenues by implementing entrepreneurship



promoting projects, for donors and other entities.

V. LESSONS LEARNED AND RECOMMENDATIONS

There were several key lessons arising from this project.

1. Lessons on Supporting Entrepreneurs

- **Programming.** Given the nascent stage of clean tech entrepreneurs in the region, the shift from Proof of Concept to a bootcamp and accelerator model led to improved outcomes. The provision of training, mentorship and access to markets / networks had a positive impact and led to the achievement of key results. Grant funding to entrepreneurs is more effective when it is accompanied by mentorship and/or training from enablers and/or angel investors, and when entrepreneurs have paid (in-part or in-full) for the support.
- **Emphasize knowledge sharing, networking, and mentorship:** CCIC entrepreneurs cited the main benefits of CCIC activities were opportunities to network with entrepreneurs, access to relatable mentors and best practices, and workshop content and hands-on experience.
- **Use virtual offerings to counteract logistical and cost barriers:** The project's regional approach meant it faced high costs of travel in the Caribbean, which was partially addressed through relying on virtual offerings. The CCIC learning management platform offered business education to accelerator participants remotely. Sector experts developed videos and presentations on various topics for the platform. The use of e-learning material, which could be reviewed at times convenient to the entrepreneur, improved the outreach and the availability / accessibility of services to entrepreneurs.

2. Lessons and Recommendations on Operational Management

- **Personnel.** Good project management influences delivery effectiveness, efficiency, and sustainability. It is important to attract and retain talent at the project manager-level through competitive salaries based on market rates. Hiring a dynamic entrepreneurial project manager is fundamental to ensure the incubator can successfully transition from donor funding to independent operations.
- **Institutional arrangements.** It greatly complicated matters to have the institution in charge of project expenditures located in one country and the institution in charge of fiduciary control in another. While this setup was initially employed to ensure a regional ownership and input into the program, it led to delays in transfers, payments and reporting.
- **Spoke partners.** Spoke partners were voluntary—while this worked in countries with more motivated partners highly interested in the program offerings, it worked less well in other countries where spoke partners felt reporting requirements did not match the benefits of participation. While a thin ecosystem might have contributed to less than ideal matches in some countries, a proper assessment of ability and commitment would have improved participation.



- **Engage more with organizations and policymakers for greater results:** The CCIC project management team and spoke leads engaged with policymakers and other stakeholders to increase their awareness and understanding. This helped generate interest and support for the sector, which could translate to more supportive policies to support clean tech entrepreneurship.
- **Sustainability.** The CCIC's recent shift to consultancy services is highly relevant to the needs of entrepreneurs who require one-on-one support. This model should have been tested earlier in program implementing using a fee-for-service, as entrepreneurs previously supported by the CCIC received free supports and thus are reluctant to pay, however the CCIC does not have the human resource capacity to sustain individual consultancy services without charging a fee.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: Improve capacity of the CCIC

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of entrepreneurs receiving proof of concept grants or accelerator services	Number	0.00	15.00	30.00	34.00
		27-Mar-2015	30-Nov-2017	30-Nov-2018	31-Jan-2019

Comments (achievements against targets):

11 in POC and 23 in accelerator

Objective/Outcome: Improve capacity of Entrepreneurs

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of entrepreneurs receiving additional financing	Number	0.00	4.00	4.00	11.00
		27-Feb-2015	30-Nov-2017	30-Nov-2018	31-Jan-2019



Comments (achievements against targets):

Enterprises that raised money through other funding sources

A.2 Intermediate Results Indicators

Component: Improve Capacity of Entrepreneurs

Unlinked Indicators

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of participants in workshops, training events, seminars, conferences, etc.	Number	0.00 27-Mar-2015	80.00 30-Nov-2017	80.00 30-Nov-2018	1398.00 31-Jan-2019
of which women	Number	0.00 27-Mar-2015	16.00 30-Nov-2017	16.00 30-Nov-2018	356.00 31-Jan-2019

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of CCIC organized training events, seminars, workshops	Number	0.00 27-Feb-2015	7.00 30-Nov-2017	7.00 30-Nov-2018	78.00 31-Jan-2019



Comments (achievements against targets):

Includes 14 bootcamps, mentoring workshops, business training workshops, webinars, and Summit on Climate Solutions



B. ORGANIZATION OF THE ASSESSMENT OF THE PDO

Objective/Outcome 1: Strengthen the Caribbean Climate Innovation Center	
Outcome Indicators	1. Growth in clean tech entrepreneurship
Intermediate Results Indicators	<ol style="list-style-type: none"> 1. Number of Entrepreneurs receiving proof of concept grants or accelerator services 2. Number of Entrepreneurs receiving additional financing 3. Number of participants in workshops, training events, seminars, etc (of which women) 4. Number of CCIC organized training events, seminars and workshops
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	<ol style="list-style-type: none"> 1. PoC competition 2. Delivery of 14 bootcamps across Caribbean 3. Develop and deliver 3 cohorts of the accelerator program 4. Develop online accelerator program 5. Develop mentorship program (face to face and online) 6. Capacity building for spoke partners on bootcamps, elearning accelerator training, and customer relationship management systems 7. Renovate and launch incubator space and training facility 8. Become a legal entity 9. Deliver knowledge events including workshops, training events, seminars (78) 10. Develop partnerships with financial institutions (2) 11. Develop partnerships with non-financial enablers (39) 12. Media appearances (219) 13. Conduct public-private dialogue sessions (24) 14. Hosted Caribbean Climate Innovation Summit & Demo-Day 2018 in Kingston, Jamaica in November 2018.



ANNEX 2. PROJECT COST BY COMPONENT

Components	Amount at Approval (US\$M)	Actual at Project Closing (US\$M)	Percentage of Approval (US\$M)
Entrepreneurial support activities and grants	1.50	1.50	100%
Total	1.50	1.50	100.00



ANNEX 3. RECIPIENT, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

Comments from the Program Manager of the CCIC.

The ICR is an accurate reflection of the CCIC works and capture all aspects of its operation over the years.

The CCIC has touched the lives of literally thousands of entrepreneurs and individuals in the Caribbean since its inception in 2014 and have demonstrated significant growth over the years, expanding on its programmes, services and offerings. The Team at CCIC is most grateful to the World Bank and the Government of Canada for their support along with the its consortium members; The Scientific Research Council (SRC) and the Caribbean Industrial Research Institute (CARIRI).

CCIC has since been resilient in its pursuit to be the institution of choice for not just cleantech entrepreneurs but entrepreneurs that have the desire to drive innovation in the region much of which has been fostered by the guiding hands of the Management Committee along with its strong regional spoke partners.

Though CCIC is currently not financially sustainable, a solid foundation has now been laid with a strong network of partners, solid programme offerings and excellent track record. This makes the CCIC the partner of choice in the region for external entities looking to collaborate with local entities for any project or programme implementation.

The CCIC will continue to bridge the gap for entrepreneurs taking them from idea to commercialization, working with government, private and international institution to build sustainable economies in the Caribbean.



ANNEX 4. SUPPORTING DOCUMENTS

- Final Evaluation Report. Deloitte. 2019. "World Bank Group – End-of-Program Evaluation of the Entrepreneurship Program for Innovation in the Caribbean"
- Building an Enabling Ecosystem for Clean Tech Entrepreneurs in the Caribbean. 2019. CCIC and World Bank 2019.
- EPIC Fiscal Year 2018 Annual Progress Report.
- Caribbean Climate Innovation Center: A Review of the Inaugural Proof of Concept Competition. June 2015
- Caribbean Incubator Needs Assessment & Feasibility Study, Infodev, Oct 4, 2012