World Bank Group Finance, Competitiveness, and Innovation Global Practice's

Climate Technology Program

REPORT FOR OCTOBER 2019 STEERING COMMITTEE MEETING:

FY19 Progress Report and FY20-21 Work Plan





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Cover photos, clockwise: Participants in a peer learning event in Ghana organized by the Climate Business Innovation Network. A Vietnamese entrepreneur launches climate-smart equipment at a shrimp farm. Implementing Wangara Green Venture's Environmental and Social Investment Framework.

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Abbreviations and Acronyms

AAU	Addis Ababa University				
ANDE	Aspen Network of Development Entrepreneurs				
ASME	American Society of Mechanical Engineers				
BERD	European Bank for Reconstruction and Development				
CARIRI	Caribbean Industrial Research Institute				
CBIN	Climate Business Innovation Network				
CCAP	Climate Change Action Plan				
CCG	Caisse Centrale de Garantie				
CCIC	Caribbean Climate Innovation Center				
CGAP	Consultative Group to Assist the Poor				
CIC	Climate Innovation Center				
CICM	Climate Innovation Center Mauritania				
CIEN	Climate Innovation Enterprise Network				
СТР	Climate Technology Program				
CVF	Climate Venture Facility				
DFAT	Department of Foreign Affairs and Trade (of the Australian Government)				
DFID	U.K. Department for International Development				
E4C	Engineering for Change				
ECIC	Ethiopia Climate Innovation Center				
EDC	Enterprise Development Center (of the Lagos Business School)				
EPIC	Entrepreneurship Program for Innovation in the Caribbean				
FCI	Finance, Competitiveness & Innovation (World Bank Global Practice)				
FY	fiscal year				
GALI	Global Accelerator Learning Initiative				
GCF	Green Climate Fund				

GCIC Ghana Climate Innovation Center

Abbreviations and Acronyms (Continued)

- GCVF Ghana Climate Venture Facility
- GEDI Global Entrepreneurship and Development Index
- GIIT Green Incubator Impact Tracker
- GIZ German Agency for International Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit)
- HoAREC Horn of Africa Regional Environmental Center and Network
- IBAT Incubator Benchmark Assessment Toolkit
- IDB Inter-American Development Bank
- IFC International Finance Corporation
- KCIC Kenya Climate Innovation Center
- KCVF Kenya Climate Venture Fund
- M&E monitoring and evaluation
- MASEN Moroccan Agency for Solar Energy
- MCIC Morocco Climate Innovation Center
- NCIC Nigeria Climate Innovation Center
- OAS Organization of American States
- PoC proof of concept
- RETF Recipient-Executed Trust Fund
- SME small and medium enterprise
- SRC Scientific Research Council
- SSA Sub-Saharan Africa
- ToR terms of reference
- TTL Task Team Leader
- UCT University of Cape Town
- VCIC Vietnam Climate Innovation Center

Executive Summary

The World Bank Group's (WBG) global Climate Technology Program (CTP) empowers developing countries to proactively and profitably adapt, develop, and deploy climate-smart technologies that meet local needs and drive growth, competitiveness, and employment. It aims to achieve this by acting across three thematic pillars: (1) local market intermediation or market support to green entrepreneurs; (2) access to finance through local funds and by crowding in private finance; and (3) the diffusion of climate technologies and the business models to commercialize them across countries.

CTP works in each of these thematic pillars through three levers:

- Strengthening the effectiveness of local intermediaries that support climate entrepreneurs and contribute to the fabric of entrepreneurial ecosystems. These intermediaries can include Climate Innovation Centers (CICs), green incubators, and economic development organizations. CTP provides these intermediaries with technical assistance, partnership facilitation, and funding in some cases.
- 2) Developing market infrastructure that can enhance the effectiveness of local intermediaries.
- 3) Uncovering and sharing practical knowledge in climate technology innovation gathered through the program and its network of partner organizations.

CTP is part of WBG's Finance, Competitiveness, and Innovation (FCI) Global Practice. Through this work, FCI strengthens WBG's evolving approach to development finance: to maximize finance for development and leverage private sector investments for sustainable and inclusive growth. The program benefits from FCI's knowledge on private sector development, in particular on innovation and entrepreneurship, as well as from internal collaboration with other WBG global practices focused on energy and the environment.

Since CTP's inception seven years ago, the program has helped to launch and manage 11 CICs around the world. These CICs are accelerating the development, deployment, and transfer of locally relevant climate technologies by providing promising clean technology entrepreneurs with the knowledge, capital, and access to markets required to launch and grow their businesses.

Key Accomplishments in FY19

Support to market intermediaries continued to be a central part of CTP's work in FY19, as the program developed plans for CICs to engage more broadly in their ecosystems and expanded the number of intermediaries in the Climate Business Innovation Network (CBIN). CBIN, the CTP platform for network learning and collaboration, integrated new CICs from the WBG Launchpad. CTP helped intermediaries develop action plans for ecosystem engagement and provided them with tools for partnership development and government engagement in their countries.

Market Intermediaries

CBIN undertook a range of activities to improve how CICs operated: the development of an assessment toolkit that helps World Bank staff and CIC managers benchmark and track the centers' progress; in-person peer learning exchange and trainings, including a peer learning event in Ghana for CIC staff, an ecosystem study tour in Oregon, and a pilot workshop in Morocco that offered expert design and engineering reviews; and three webinars that disseminated CICs' experiences and financial sustainability strategies.

Among intermediaries, the Ghana Climate Venture Facility (GCVF) was formally launched in June 2019 and is assessing a pipeline of more than 20 potential SME investments with 2–3 investments going through the formal due diligence process. Kenya Climate Ventures (KCV), the other seed funding facility, is undergoing a restructuring after a third party review of its implementation progress, management and governance arrangements, overall trajectory, and future sustainability.

Key accomplishments from the existing CICs include:

- The Caribbean CIC secured financial resources for operational costs and activities beyond the World Bank's trust fund period through service contracts with several partners including Inter-American Development Bank, Climate-KIC, Development Bank of Jamaica, and other local financial partners.
- In closing the Ethiopian CIC program, CTP worked with the government of Ethiopia to look for a new model for climate innovation and contributed to the WB's work on entrepreneurship for off-grid solar solutions.
- The Ghana CIC graduated three cohorts of entrepreneurs and is actively working with its 4th and 5th cohorts. The GCIC also created a sustainability plan and recruited an experienced consultant for fundraising.
- The Kenya CIC has focused to improve the quality of services to its clients, organizational capacity, and visibility to improve its sustainability.
- The Vietnam CIC is transitioning toward an independent, self-sustainable entity. It has graduated companies from its first cohorts and launched a third cohort.
- The Morocco CIC launched a two-year investment readiness support program and organized a green financing event for SMEs.
- Two new CICs launched in FY19: a CIC in Nigeria focusing on supporting innovative businesses in the offgrid solar sector and a CIC in Mauritania focusing on building a green entrepreneurship ecosystem.

Across the existing CICs, 221 companies were supported in FY19 (Table 1), of which 66 were women-led businesses.

CIC Incubated Businesses (Q1–Q4)	
Caribbean	50
Ethiopia	NA
Ghana	30
Kenya	119
Vietnam	52
Mauritania	NA
Morocco	NA
Nigeria	NA
Total	251
Total Incubated Businesses that are Women-led	66
Number of Businesses that Raised Early-Stage and Growth-Stage Finance	53
Amount of Private Finance Leveraged	US\$5,900,669
Number of Direct Jobs Created	
Total Jobs	782
Jobs Created for Women	401

Table 1. FY19 Numbers for CICs

Note: FY19 only includes data for the Caribbean, Ghana, Kenya, and Vietnam CICs. The other CICs were not monitored for results reporting during FY19. Beneficiaries are calculated as firms having received incubation support for the first time during FY19.

Market Connect

The 12-month Market Connect Ghana pilot was successfully completed in FY19. The pilot designed, tested, and improved a mechanism for matching cross-border climate technology business partners. There was a strong level of interest from both external and local businesses. The pilot pursued eight matches; of these, four tangible cross-border partnerships have been established that were based on mutual potential for increased profits.

In early FY19, Market Connect Kenya activities were finalized after conducting two workshops to share lessons learned. Activities will not be pursued further since the program was not a priority strategic area for the Kenya CIC this fiscal year.

Key Lessons Learned

Getting climate technology businesses in Africa from startup to scale-up requires a mix of financing mechanisms and support. Given the pioneering stage of many climate businesses in African markets, funding mechanisms need to be flexible and innovative in the investment products they offer. Complementary financing in forms and stage is necessary to finance the needs of these businesses along their relatively long and uncertain growth trajectories. Long-term support from the entrepreneurship ecosystem is critical.

Sustainable business models for CICs remain a focus, with many challenges along the way. CICs' sustainability requires dedicated fundraising efforts and multiple revenue streams. For example, the Ghana CIC is using an experienced fundraiser to meet its goals for creating a sustainable business model and casting a wide net, including public, corporate, and foundation donors and internally generated funds.

Bootcamps, virtual programs, and tailored learning continue to be effective means for reaching entrepreneurs. Given the dynamic nature of the sector, training needs to be offered more regularly or frequently as a refresher. More virtual offerings would also counteract logistical and cost barriers. The Product and Engineering Support Pilot showed the importance of having expert technical reviews for entrepreneurs to get their prototypes market-ready. While CICs themselves are unable to provide these types of reviews, they can potentially incorporate them into their offerings.

For example, CICs need to better integrate in their local ecosystem and collaborate with related country operations and policy initiatives to more effectively access technical expertise and leverage financial resources and other related support. For example, during the Ethiopia CIC's initial phase, the center created few links with other operators or with country operations. The CIC could have benefited from taking advantage of the knowledge base of local and country partners. Recognizing this need to engage more with organizations and policymakers for greater results and sustainability, the Caribbean CIC project management team and hub leads are working more with policymakers to increase their awareness and understanding.

Priorities for FY20 and FY21

In FY20, CTP will continue to strengthen the longer-term sustainability of the program and its CICs, collecting lessons learned and leveraging data and insights to continuously increase its value-for-money approach:

Sustainability: As FY20 begins, CTP staff will continue to support the financial sustainability of CICs through technical support and the facilitation of links with new sources of funding.

CICs and venture facilities: CTP will support CICs and Climate Venture Facilities (CVFs) through remaining Recipient-Executed Trust Funds (RETFs), CBIN's peer-to-peer functions, knowledge libraries, and partnership facilitation.

Collecting lessons: CTP's continual efforts to collect lessons learned will include strengthening monitoring and evaluation (M&E) and gathering deeper insights. CTP will continue to improve data collection from CICs.

Value for money: CTP will continue to use lessons learned from its research and M&E programs to improve its value-for-money proposition. CTP will continue to find ways to minimize operation costs and improve.

Climate Business Innovation Network

Overview

CBIN aims to improve the operational effectiveness of green business intermediaries by: (1) enabling connectivity and knowledge sharing between members; (2) building members' organizational capabilities and capacity to deliver new services; and (3) capturing, curating, and sharing knowledge on business incubation approaches. To create sustainable institutions that will continue to catalyze green businesses in developing countries beyond the period of the Bank's technical assistance and financial support, CBIN facilitates partnerships among network members and with global actors. Common green business incubation challenges faced by CBIN members are identified and solutions are tested using pilots involving select CBIN members. CBIN envisages network members and global and local partners will support each other through knowledge sharing, advisory services, and the replication of impactful green business incubation approaches. Since its launch, CBIN has become a hub for entities wishing to learn management practices in green business incubation in developing countries.

Progress in FY19

In FY19, CBIN undertook a range of activities to improve how CICs operated, both in terms of their internal managerial capabilities and their service offerings to entrepreneurs. FY19 CBIN key activities can be categorized into the following: (1) the development of an assessment toolkit to improve the measurement of CIC progress; (2) in-person peer learning exchange and training, including a pilot on design and engineering reviews to improve CIC service offerings; and (3) a CBIN webinar series.

Key Accomplishments

Assessment Toolkit

One of the recommendations from the review of CBIN in FY18 was to improve how to measure the impact of capacitybuilding activities on CICs. CBIN activities strove to improve how CICs operated, both in terms of their managerial capabilities and their service offerings to entrepreneurs. However, these capacity-building activities, while valued, were not directly translating to significant changes in terms of entrepreneurial performance. An improved M&E dashboard was introduced in FY19 to enhance how CICs tracked performance indicators every quarter, such as number of entrepreneurs supported, funding/sales raised by the entrepreneurs, number of capacity-building events held, etc. However, the dashboard has not yet captured quality improvements, entrepreneurial satisfaction, or enhanced service offerings that CICs were incorporating. To assess CICs' managerial and technical changes, CBIN developed the Incubator Benchmark Assessment Toolkit (IBAT) to help both Bank Task Team Leaders (TTLs) of CICs and CIC managers to benchmark and track their progress over time. Normally, incubators are assessed based on the performance and progress of the entrepreneurs they support. However, and particularly in the clean technology space, meaningful sales numbers can be a long time coming and this would reflect poorly on the incubators, especially given the short time period of donor funding. IBAT was therefore designed to help highlight more short-term progress. IBAT measured how CICs moved in their trajectory of service offerings in terms of breadth and quality to the entrepreneurs, as well as their internal capacity building. IBAT also identified program areas that CICs could get support in developing. A workshop was held in Washington, DC with

CIC TTLs to refine the toolkit before being rolled out to test how well it aligned with their perceptions. For example, for the Caribbean CIC the alignment was strong, indicating good consensus on weaknesses and strengths (Figure 1).

One benefit of IBAT was its ability to benchmark CICs with each other, allowing them to see who was successful and in what area so that others may learn from them (Figure 2). These differences were used to help develop a peer learning program in Ghana, where CICs shared their best practices.

Beyond CBIN, the toolkit can continue to be a useful means for CICs to chart their progress over time and to also market how they have improved. IBAT, by showing incremental improvements in scores, could also help capture the nuanced differences that training opportunities made to CICs. IBAT findings were shared with Bank teams working on digital entrepreneurship projects involving business incubators.

In-Person Learning Events

An important CBIN objective is in-person capacity building and peer knowledge sharing, which has proven to be one of the most effective means for capacity building of CICs. In FY19, three in-person events were held—a peer learning event in Ghana, an online mentoring training and ecosystem study tour in Portland, Oregon, and a design and engineering review workshop in Morocco.

• Peer Learning Event in Ghana (February–March 2019)

In FY19, rather than focus on conferences and side events, CBIN invited members to find peer matches for which CBIN would finance a peer-to-peer knowledge sharing event. First, visiting incubator managers and staff from Bangladesh and Egypt joined incubator and early-stage fund managers in Ghana for a one-day early-stage financing workshop to learn about: (1) evaluating early-stage investment opportunities, using two case studies from Kenya; (2) designing the Wangara Green Ventures, an early-stage venture fund established under the Ghana CIC; and (3) designing an accessto-finance program within a business incubator.

Figure 1. IBAT Scores for Caribbean CIC (includes retroactive assessment of 2016)



Figure 2. Benchmarking CIC Offerings—Ghana, Bangladesh, and the Caribbean



Then, staff from four CICs—Bangladesh, the Caribbean, Egypt, and Ghana—gathered for a weeklong peer learning event to learn about each center's programs and share best practices on pre-identified topics to improve operational modalities. For more details about the peer learning event, see Box 1.

Box 1. CICs Share their Best Practices at Peer Learning Event in Ghana



Believing a true peer-to-peer knowledge sharing event would be more effective than a conference, CBIN sponsored a weeklong learning event for CICs in February–March 2019. Staff from four CICs—Bangladesh, the Caribbean, Egypt, and Ghana—convened in Ghana to learn about each center's program offerings and share best practices to improve operations. The smaller gathering gave participants a chance to build camaraderie and engage in meaningful discussions about several topics, including:

- Different approaches to recruiting and selecting entrepreneurs for incubation programs, including
 extensive regional outreach and psychometric testing (Ghana CIC); assessment of sector-specific
 business opportunities and training seasoned entrepreneurs to develop them into businesses
 (Cleantech Arabia in Egypt); entrepreneur selection and incubation practices tailored to funding partners'
 needs (Better Stories in Bangladesh); and a one-day green technology startup bootcamp for Ashesi
 University students delivered by various CICs (Caribbean CIC).
- Financial sustainability challenges, with many empathizing with others in seeking funding. Different revenue generation methods were shared, including consulting services for development agencies, corporates having an equity stake in portfolio companies, and fundraising from donors.
- The experience of the Product and Engineering Support Pilot, in which design and engineering reviews were provided for CIC clean technology startups (see Box 5).
- Bilateral sessions to cover more specific needs, such as the Caribbean CIC learning financial management from the Ghana CIC.

Following the event, CIC staff submitted their takeaways and plans for incorporating what they learned. For example, the Caribbean CIC learned from the Ghana team how it conducts due diligence earlier in the pipeline selection process for their incubation program, which improves the cohort quality and entrepreneurs' performance. Likewise, they learned from Cleantech Arabia the methodology for conducting sector-specific market research and analysis that entrepreneurs can use as a catalyst for developing new business solutions. The Caribbean CIC plans to use this approach as part of its service offerings.

Ecosystem Study Tour in Portland (January 2019)

As part of the rollout for the online mentoring platform, CBIN invited staff from the Kenya CIC to be onboarded at MicroMentor's headquarters in Portland, Oregon. Visiting the Portland area's clean technology incubators and accelerators gave CIC staff and Bank staff an opportunity to learn best practices in incubator and accelerator management and how these might be incorporated into CICs. CIC staff visited Hatchlab, Starve Ups, Portland State University Business Accelerator, and VertueLab. Information gained from the study tour was also used to enhance the IBAT.

The Kenya CIC team returned and worked with MicroMentor to roll out the online platform to their entrepreneurs, and along with the Caribbean CIC, to train other CICs in the platform. However, thus far the rollout has had limited uptake. In the pilot, MicroMentor played a hands-on role in encouraging and following up with the entrepreneurs to participate; however, in the rollout, this role was to shift to CICs, who unfortunately could not consider the program a priority. In response, MicroMentor has offered to provide virtual direct coaching to interested CICs, and this revised approach is now underway.



Kenya CIC staff make a stop on CBIN's ecosystem study tour in Portland, Oregon, in January 2019.

• Product and Engineering Support Pilot Workshop in Morocco (December 2018)

CTP collaborated with the American Society of Mechanical Engineers (ASME), Engineering for Change (E4C), and Catapult Design to provide expert design and engineering reviews for eight hardware-focused CIC startups. The pilot tested a framework for product and engineering support that could be replicable and scalable across CBIN.

The pilot consisted of three phases: a discovery phase, which benchmarked portfolio technologies and identified CIC-supported enterprises that would benefit most from participating; an implementation phase, which exposed companies attending a workshop to "catalytic" product and engineering support delivered by local, regional and international experts; and a learning and evaluation phase.

The well-received two-day workshop held in Morocco addressed a fundamental need of these CICs to undertake technical reviews of their entrepreneurs' prototypes to get them market-ready. Each company received a two-hour design and engineering review and participated in one-on-one sessions. Networking and learning opportunities were available both days. For more details about the workshop, see Box 5.

Along with appreciation from participants, CIC staff also gave positive feedback. Staff felt that the workshop addressed a real need for engineering and design support that CICs are not able to provide. Staff noted it was hard for both staff and supported companies to understand the value of the workshop without participating in it, so better pre-workshop communication will be critical for any future workshops.

Effeson Hailemichael, Ethiopian CIC staff, said, "The CIC would benefit greatly from guidance and procedures in terms of how to identify and guide companies' needs in terms of design and engineering. Currently, the companies don't know what help they need—even though we ask them for their technical needs they don't know how to articulate them."

Webinar Series

During FY19, CBIN sponsored three webinars hosted on the Bank's Open Learning Campus platform; two captured the learnings of other CBIN activities and the third addressed fundraising, a critical need for CICs' sustainability.

- 1) Online Mentoring for Entrepreneurs—Results from the Caribbean Climate Innovation Center Pilot: The webinar covered the Bank pilot on online mentoring provided by MicroMentor to the center from January to June 2018.
- 2) Getting Clean-tech Entrepreneurs Market Ready—The Path from Prototype to Market: The webinar discussed the Product and Engineering Support Pilot provided by ASME to the Moroccan CIC that ran from May to October 2018. CIC staff and entrepreneurs spoke about their experiences.
- 3) Financial Sustainability for Business Incubators and Accelerators: This webinar covered findings from the Global Accelerator Learning Initiative (GALI) report on the funding profiles of 139 organizations that run accelerator programs. The webinar also featured how Better Stories in Bangladesh diversified its funding sources during its journey to financial sustainability.

The webinars attract from 45–50 registrants with 18–21 participating in the actual event. The participation rate of these CBIN webinars were greater than the average participation rate of 30 percent across the Bank.

Key Lessons Learned

Participation levels

- Participation in CBIN activities varied among CICs from almost zero to highly active. Those who were more
 active had a more entrepreneurial mindset and participated in various learning opportunities. In part this speaks
 to hiring incubation managers with a more entrepreneurial mindset and vision who could appreciate the potential
 gains down the line.
- Participating in new offerings, such as the design and engineering review, was more challenging since it was hard to see the value until the activity took place. However, having a peer advocate explain it, as the Moroccan CIC did in the webinar, helped highlight the value of such an experience.

Piloting experiences

- Rolling out the online mentoring pilot was challenging since there needed to be strong buy-in and incentives for CICs to execute it on their own rather than the vendor, and this became one of many tasks competing for their attention.
- The Product and Engineering Support Pilot experience was shared through a webinar and at the peer learning
 event in Ghana. While replicating the pilot would be too costly for CICs (the actual costs were more than
 US\$80,000 with ASME subsidizing a good share), it was recognized that having some form of expert review,
 and knowing how to source them, should be incorporated into CICs' offerings. At the very least CICs could
 encourage entrepreneurs to apply to ASME regional competitions to qualify for this kind of support.

Learning activities

- The peer learning event offered an effective approach for CICs to learn from each other to improve operational modalities. As compared to prior larger gatherings, the event was in part effective since participating CICs were not new and had already been operational for a few years. This allowed them to showcase their program offerings that had already been delivered and were valued by their clients.
- The webinars attracted both CIC and non-CIC audiences and were well attended. They will continue to serve as a resource to new incubators.

Ghana Climate Venture Facility

Overview

The Ghana Climate Venture Facility (GCVF) is a CTP initiative, supported by the governments of Denmark and the Netherlands, which seeks to establish and anchor a new climate enterprise investment fund in Ghana. GCVF's mission is to foster innovation and growth in the Ghanaian climate sector as well as promote climate best practices across the board by financing early-stage SMEs and startups, including high-potential, investable startups and firms emerging from the Ghana Climate Innovation Center (GCIC). GCVF operates as a sister organization to GCIC, providing financing for climate businesses to complement GCIC's incubation and entrepreneurship support activities. GCVF targets early-stage businesses where a gap of risk financing exists, investing US\$50,000–\$500,000 per business, including in some of the businesses that emerge from GCIC. GCVF is designed to be sustainable using "evergreen" capital that will be reinvested over time. GCVF will also crowd in additional private capital over time—targeting a US\$10–\$20 million overall fund size—by using the Bank's financing as a first-loss facility.

Progress in FY19

FY19 was a positive year for GCVF since implementation arrangements were finally agreed with the government of Ghana after a yearlong delay. This led to a project restructuring by the Bank completed in September 2018, and the signing of the grant agreement to finance GCVF in October 2018. Innohub Foundation became the main implementing partner, with Investisseurs & Partenaires taking on the role of a technical assistance partner to the fund manager rather than as the grant recipient.

GCVF, operating in the market under the brand name Wangara Green Ventures, formally launched in June 2019 at GCIC's Incubating Innovation Symposium. The GCVF team is in place as well as key governance structures, including the grant steering committee, board of directors, and investment committee. The Wangara team is assessing a pipeline of more than 20 potential SME investments with 2–3 investments going through the formal due diligence process. Initial investments are expected in early FY20. Closing this funding will require ensuring alignment with the objectives of potential investors. The Wangara team has a strong pipeline of potential funding from third-party investors, including public sources, such as Ghana's venture capital trust fund and the Dutch Good Growth Fund, and private investors within Ghana.

Key Accomplishments

- Completed GCVF grant agreement with a revised fund structure: The grant to finance GCVF was completed in October 2018 after a yearlong delay due to the government's objections to using an international partner as the grant recipient.
- Built the fund management team and governance: The offices for the fund were set up, the management and investment teams were recruited, and key governance committees were established.



The Wangara Green Ventures fund formally launched in June 2019.

- Launched GCVF as Wangara Green Ventures: The fund formally launched in June 2019.
- **Developed a strong pipeline of potential investments:** Wangara has a pipeline of more than 40 businesses with four businesses in formal due diligence as of June 2019.
- Built a pipeline of potential investors: Fundraising from public and private investors commenced with strong interest from investors offering US\$5 million of capital and additional interest from another set of investors considering US\$5 million of investment.

Key Lessons Learned

- Early-stage climate investing in Africa requires innovative funding mechanisms: Given the pioneering stage of many climate businesses in African markets, funding mechanisms need to be flexible in the investment products they offer, which requires risk-taking financiers willing to support innovative structures.
- Blending public and private finance requires complex structuring negotiations: Despite the clear need for blended finance in emerging markets, coming to terms between public and private investors requires a delicate balance of interests, leading to long negotiations on fund structure and terms.
- The pipeline of investible climate businesses is strong: A strong pipeline of potential investments has emerged in Ghana, validating the importance of filling the gap with GCVF and similar early-stage financing facilities.
- Getting climate businesses to profitability requires a mix of financing: While GCVF fills an important financing role, complementary (patient) financing in forms (debt, equity, etc.) and stage (seed, early, and growth) is necessary to finance the needs of climate businesses along their relatively long and uncertain growth trajectories.

FY20 Work Plan

FY20 is a critical year for GCVF. Its first investments are expected in Fall 2019. This will test the fund team's capabilities around pipeline development, deal structuring, and investment decision making. These investments will shed light on the Wangara team's ability to attract strong deals and make good investments. It will also depend on Wangara having its governance mechanisms in place and well-functioning, including the investment committee and board of directors. In addition, the Wangara team plans to make a first close of funding. Wangara has a goal to raise US\$5 million by mid-2020, on top of the US\$2 million of capital that the Bank grant provides. All these planned milestones for FY20 are important to achieve to demonstrate the GCVF model's viability and sustainability. To ensure that planned milestones are met, throughout FY20 the Bank team will provide enhanced support, including bringing in governance and investment experts.

Kenya Climate Venture Facility

Overview

Kenya Climate Ventures (KCV) is a pioneering early-stage investment company that invests in Kenyan climate technology ventures with commercial and high-growth potential. Based in Nairobi, KCV was established by the Kenya Climate Innovation Center (KCIC) in FY16 as an independently managed and governed investment company with a US\$4.9 million grant from CTP.

KCV provides patient risk capital coupled with management and technical assistance to its investee companies. In addition to its own investments, KCV aims to leverage co-investment and follow-on capital for its investee companies. Over the next three to four years, KCV plans to raise additional funding to enable expansion and portfolio growth. With its focus on start-up and early-stage investing in the climate technology sector, KCV represents an important new pioneer for the country's impact investing, private equity, and venture capital ecosystem.

Progress in FY19

In early FY19, the Board of KCIC (KCV's parent organization), expressed concerns about KCV's implementation progress, management/governance arrangements, overall trajectory, and future sustainability. Following internal deliberations, the Board commissioned a third-party review of KCV's business and investment model, financial model, progress to date, and management/arrangements. Lions Head Global Partners, an investment advisory firm, carried out the third-party review, which involved consultation and input from key stakeholders, including the KCV Board, management/team, and investment committee, as well as the Bank. The review identified areas where KCV had made progress and implemented its investment activities, as well as gaps in implementation and management/governance arrangements.

Following the review, KCIC deliberated on the way forward and made the following decisions:

- Refine the investment thesis to include a greater focus on impact alongside the commercial filters.
- Emphasize post-investment technical assistance to portfolio companies alongside the capital provided.
- Reconstitute the KCV Board—expand it to seven members with three from KCIC and four independent members.
- Reconstitute the KCV Investment Committee.
- Strengthen the management team by bringing in a new Chief Executive Officer (CEO) to focus on overall KCV organizational and business development with an existing Chief Investment Officer focused more on the investment side of the business.
- Refine the forward fundraising strategy of KCV with a greater emphasis on donor funding for the next 3–5 years to allow a longer runway before KCV is ready for raising investor capital.

The KCIC Board established a Transition Committee, chaired by the KCIC Chair and including the DANIDA representative on KCIC's Board and a couple of other Board members, to oversee the transition and restructuring of KCV. Under the Transition Committee's oversight, the following actions were taken:

- The KCV Board was reconstituted with new Board members: three from KCIC (including the KCIC Finance Committee Chair, the KCIC CEO, and the DANIDA representative on the KCIC Board) and two independent members with backgrounds in investment/private equity fund operations and venture capital and clean technology investing. The KCIC Finance Committee Chair was asked to serve as interim KCV Board Chair for a six-month period.
- The KCV Investment Committee was reconstituted with three members.
- A search for the new CEO commenced.
- KCV's existing portfolio companies were assessed for their performance to date and technical assistance needs, and technical assistance plans were developed.
- KCV continues to source and screen new investment opportunities, although no new investments were made.

FY20 Work Plan

In FY20, following a year of review and restructuring, KCV will activate its core investment and technical assistance activities with a goal to make four new investments while providing oversight of its existing portfolio companies. On the organizational side, it will complete the recruitment of the CEO and new team members. In conjunction with KCIC, fundraising efforts will also commence to allow for KCV continuity beyond the end of Bank funding, with a principal focus on donor funding.

Caribbean Climate Innovation Center

Overview of Progress

Launched in 2014, the Caribbean Climate Innovation Center (CCIC) was funded by the government of Canada through its Entrepreneurship Program for Innovation in the Caribbean (EPIC). CCIC was managed by a consortium of two leading scientific institutions, the Scientific Research Council (SRC) of Jamaica and the Caribbean Industrial Research Institute (CARIRI) of Trinidad and Tobago, up until January 2019 when the donor-funded project ended. CCIC is now an independent entity whose primary objective remains building an enabling environment and regional institutional capacity in the Caribbean where clean technology entrepreneurs can grow and develop. CCIC offers a suite of support services to entrepreneurs: mentorship, tailored training, access to finance, acceleration, incubation, peer interaction, market development, and technology commercialization.

Progress in FY19

In FY19 CCIC built upon its formalization as an independent legal entity and continued to focus on improving its sustainability prospects by forging partnerships with the Inter-American Development Bank (IDB), Climate-KIC/ClimateLaunchpad, Organization of American States (OAS), Ministry of Finance, and Junction X-Lab. They found financial resources for operational costs and activities beyond the trust fund period through service contracts with IDB, Climate-KIC, Development Bank of Jamaica, and other local financial institutions, which will provide project implementation services focused on supporting entrepreneurs.

Key Accomplishments

Services for enablers and implementing partners

- Provided capacity building for hub partners through the implementation of the ClimateLaunchpad methodology and new business models that also provide an avenue for entrepreneurs in the Caribbean to tap into a global program.
- Rolled out a customer relationship management system, eLearning accelerator modules, and a co-working space as revenue streams.

Services for entrepreneurs

- Implemented three bootcamps in St. Kitts and Nevis, Suriname, and the Bahamas.
- Launched the third accelerator cohort for 30 new entrepreneurs, which constitute 15 teams, and continued to support previous accelerator cohorts. The second cohort had 12 active companies participating, all of which developed a business idea aligned



CCIC bootcamps were major idea generation and pipeline development tools.

with one or more thematic areas (sustainable agribusiness, waste management, energy efficiency, renewable energy, and resource use efficiency).

• Finalized launching the ClimateLaunchpad, a portal and competition for identifying environmental challenges in need of an entrepreneurial solution (see Box 2).

Knowledge and learning agenda

- Held the inaugural Caribbean Climate Innovation Summit & Demo-Day 2018 in Kingston, Jamaica in November 2018. Approximately 80 entrepreneurs, sector experts, regulators, policymakers, and business support entities discussed challenges, trends, best practices, and standards associated with climate innovation and entrepreneurship. CCIC entrepreneurs from across the Caribbean were flown in to showcase clean technology innovations commercialized in the last 2–4 years.
- Along with the Ghana CIC, participated in a mentoring management pilot. The pilot used an online mentoring platform for about 27 entrepreneurs to test the effectiveness of such a model for improving access to mentors in a fragmented setting.
- Participated in the CBIN peer learning event in Ghana, helping to share and learn best operational practices with other CICs—including running their one-day clean technology bootcamp to Ashehi University students.
- Produced an analytical report to share the center's experiences and lessons learned in building a clean technology support system for the Caribbean.

Key Lessons Learned

- Engage more with organizations and policymakers for greater results and sustainability: CCIC project management team and hub leads are engaging more with policymakers to increase their awareness and understanding in the hopes that this will translate to favorable policies and 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. Approximately 31 members engage in a WhatsApp community for climate technology entrepreneurs.
- **Provide tailored and continuous professional training:** CCIC's bootcamps, virtual programs, and tieredstage learning in the accelerator appear to have been the most effective in reaching entrepreneurs. Given the dynamic nature of the sector, training needs to be offered regularly or as a refresher.
- Explore more virtual offerings to counteract logistical and cost barriers: For instance, the CCIC learning management platform offered business education to accelerator participants remotely. Sector experts developed videos and presentations on various topics for the platform.

FY20 Work Plan

Building partnerships and cementing its sustainability will continue to be high priorities for CCIC. CCIC will continue to deliver bootcamps, with an additional three planned for this fiscal year. CCIC continues to submit proposals for additional funding opportunities as well as bid for service providers contracts. For example, they presented a proposal to the Heart Trust/NTA Board of Directors and Management Committee to train the institution's staff and student personnel for three years though three programs, which includes incubation, acceleration, and bootcamp delivery. This negotiation should see CCIC tapping into funding ranging from US\$200,000–\$267,000 over the next three years.

Box 2. The Caribbean and Ghana CICs Host their First ClimateLaunchpad



For the first time ever, the Ghana and Caribbean CICs took part in the 2019 edition of the ClimateLaunchpad, the world's largest green business ideas competition. The competition supports aspiring and promising clean technology entrepreneurs with training, coaching, and networking opportunities and a chance to compete for cash prizes that they can invest in their businesses. Clean technology innovations ranging from renewable energy, energy efficiency, food and agriculture, water, transportation, and industrial technology were eligible.

Selected participants from applications submitted to CCIC started their training with a bootcamp June 21–22 at The University of the West Indies, Mona campus. Selected entrepreneurs from applications submitted to GCIC started their own training with an intensive bootcamp in the first week of July. The bootcamps were followed by mentorship and coaching to prepare for the national ClimateLaunchpad finals. The top two ideas from Ghana and top two ideas from all CCIC competing countries will get a chance to battle at the global ClimateLaunchpad grand final held November 2019 in the Netherlands. The world's top 10 best ideas will win access to a regional accelerator program.

Carlinton Burrell, CEO of CCIC, said, "We had persons coming into our offices indicating what their green ideas are and asking us how we can help and facilitate them. So, we are really working with them to drive the innovation. This will definitely contribute to economic development in terms of job creation, because these entrepreneurs are now moving to commercialization. We want the best of the best to represent Jamaica in the Netherlands for the global grand finals."

Ethiopia Climate Innovation Center

Overview

Launched in March 2014, the Ethiopia Climate Innovation Center (ECIC) focused on supporting the creation and growth of local climate technology businesses that contributed to climate change adaptation and mitigation. Implemented by Addis Ababa University (AAU) through one of its semiautonomous agencies, the Horn of Africa Regional Environmental Center and Network (HoAREC), ECIC was funded by U.K. Aid and the Norwegian Ministry of Foreign Affairs.

ECIC faced many challenges, most of them related to changes in management in local implementing agencies. As explained in last year's report, AAU requested a one-year no-cost extension of the ECIC grant until March 2019 to continue the implementation of grant activities and complete objectives and disbursement targets. Different parties, including the Ministry of Finance and Economic Cooperation, U.K. Department for International Development (DFID),

the Norwegian Embassy, AAU, HoAREC, and the Bank, agreed to close the ECIC grant as scheduled on April 30, 2018. In line with Bank trust fund policies, AAU was granted a four-month grace period ending on August 31, 2018 for all accounts reconciliation and for finalizing the independent audit.

Progress in FY19

The Bank team continued to provide support to AAU/HoAREC to ensure orderly closure of the program in March 2019. The three main support areas involved:

- 1) Lessons learned, innovation model scoping, and diagnostics in Ethiopia: The government of Ethiopia requested Bank support in looking at a new model for climate innovation, which would rely on updating the situation analysis for the local entrepreneurial ecosystem.
- 2) Entrepreneurial solutions for delivering off-grid energy: The team supported a collaboration on entrepreneurship off-grid solar solutions between the Bank's Energy Global Practice and FCI for the off-grid electrification road map, as part of the second phase of the National Electrification Program.
- 3) Investment readiness and financing for promising climate entrepreneurs: The team prepared companies from the ECIC proof of concept (PoC) competition that have perceived high growth and impact potential for an investment readiness program.

Key Accomplishments

- Conducted an expenditure review, mapped the existing climate technology small and medium enterprises (SMEs), and assessed donors' support for climate innovation to help the Ethiopian government better understand the current SME entrepreneurial ecosystem and identify ways to work more effectively moving forward.
- Contributed technical assistance and expertise to efforts by the Bank's Energy Global Practice and East Africa energy unit and FCI to promote entrepreneurship and crowd in the private sector in delivering off-grid access to energy solutions as part of Ethiopia's National Electrification Program.
- Provided support in key technical areas and investment readiness education to Winsol, a top company in ECIC's portfolio that provides solar energy solutions. The team worked with the company in surveying survey customers and non-customers to study demand drivers and improve operations.
- Continued work on the implementation of an energy market acceleration initiative in partnership with the Shell Foundation. The effort aims to reduce local barriers in the decentralized energy market and accelerate access to energy.

Key Lessons Learned

- The Kenya CIC implementation model of consortium partners did not work well for the Ethiopia CIC. For ECIC, the choice of a consortium as implementing partners was tendered before negotiations and cemented in the grant agreement, and the implementing parties did not directly participate in the design of the project. Future implementing models should put in place practical arrangements that leverage players with a local mandate, capability, and "skin in the game."
- Projects that rely on pilots need to be fully integrated in the ecosystem. WBG and stakeholders should
 plan to work through partners in the ecosystem and to introduce interventions that leverage project investments
 on market forces. The ECIC project was the first of its kind in Ethiopia, which increased the complexity when
 translating it into action. During its initial phase, the center operated in isolation and created few links with other
 operators. ECIC could have benefited from taking advantage of AAU's knowledge base.

 Projects of this kind should be fully integrated with country operations to access technical expertise and leverage financial resources. ECIC could have benefited from closer collaboration with the International Bank for Reconstruction and Development and International Finance Corporation (IFC) operations: SME finance, national electrification, climate-smart agriculture, forest and natural resource management, and IFC Lighting Ethiopia. During the last year of implementation, the Bank team created operational and strategic links with two of these operations, which will continue after closing the grant. ECIC missed an earlier opportunity to leverage this technical expertise from them and potentially, other partners.

Ghana Climate Innovation Center

Overview

The GCIC supports the development of Ghana's green industries including renewable energy, waste management, clean water, and climate-smart agribusiness. It operates as a business incubator for startups and an accelerator for early-stage green SMEs. It also catalyzes broader support for private sector solutions to climate change in Ghana through its role as a connector and convener of climate innovation stakeholders and as an advocate to government on supportive green business policies. GCIC is strategically located at Ashesi University. GCIC seeks to directly support 100 entrepreneurial green businesses that provide at least 40,000 households with climate-friendly products by 2020, while growing the capabilities and impact of Ghana's broader green innovation ecosystem. GCIC aims to become sustainable without Bank support as of 2021.

Progress in FY19

GCIC has now graduated three cohorts of entrepreneurs and is actively working with its 4th and 5th cohorts. The number of applicants and quality of accepted businesses continue to rise. Results are now coming out strongly in the market. The 52 businesses through cohort 4 have delivered climate-friendly products to 140,000 households, generated US\$1.34 million in new business revenues, created 96 permanent jobs, raised US\$1.36 million in early- and growth-stage financing, and mitigated 1,050 MT of CO₂. GCIC businesses have won several awards, such as the Neat Eco-Foods US\$100,000 prize at the African Entrepreneurship Awards and Black Star Energy's EDF Pulse Africa Award.

GCIC continues to be a leader within the entrepreneurship ecosystem in Ghana, introducing innovations such as a dedicated Women Entrepreneurs Transformation Program (see Box 3), psychometric evaluation of entrepreneurs at application stage, a Green Business Roadshow and Bootcamp, a facilitated mentorship program, and a private sector-led research commercialization program. It shares the lessons from these novel approaches within Ghana's ecosystem through regular interactions as well as high-profile events such as GCIC's annual Incubating Innovation Symposium. GCIC also continues its international engagement through partnerships with the



GCIC's annual Incubating Innovation Symposium brought together key actors in Ghana's entrepreneurial ecosystem.

European Union's Climate KIC, CBIN, Kenya-based Mowgli Mentoring, and South Africa's Black Umbrellas.

The Bank and DANIDA both conducted mid-term reviews of GCIC in FY19 and highlighted the importance of GCIC sustainability to safeguard investments made by donors and ensure that GCIC objectives outlive the duration of its grant funding. In FY19, GCIC took steps toward sustainability through creating a sustainability plan and recruiting an experienced consultant to advise on a sustainability and fundraising strategy.

Key Accomplishments

- **Continued to drive results**, including reaching more than 140,000 households with climate-friendly products since GCIC's inception.
- Significantly increased the number of green entrepreneurs reached by introducing the GCIC Green Entrepreneurs' Bootcamp for more than 100 entrepreneurs across 10 cities (Fall 2018 and Spring 2019), hosting the global ClimateLaunchpad event for 14 selected Ghanaian businesses, and kicking off an Ashesi student entrepreneurs' program at GCIC for five student-led businesses.
- Expanded its role in driving Ghana's green innovation ecosystem by convening high-profile events including GCIC's own Incubating Innovation Symposium, Africa Climate Week, She Innovators Converge, Solar Uptake, and Climate Smart Agriculture Policy Workshop.
- Shared lessons globally on incubation, financing, and sustainability by hosting CBIN participants from Bangladesh, the Caribbean, Egypt, and Nigeria.
- Built a sustainable network for green businesses in Ghana by launching the Climate Innovation Enterprise Network (CIEN) led by GCIC alumni businesses. The purpose of the network is to create a national association of pioneering green business leaders and businesses that serve as a driving force for accelerated social, environmental, and economic benefit through enterprise.
- Successfully raised US\$500,000 funding from the foundation of U.K.-based Stewart Investors, validating the GCIC brand and value proposition.

<u>Key Lessons Learned</u>

- Sustainability requires dedicated fundraising efforts and multiple revenue streams: GCIC is using a highly experienced fundraiser to meet its goals for creating a sustainable business model and casting a wide net, including public, corporate, and foundation donors and internally generated funds.
- Entrepreneurship support organizations in Ghana are eager to learn from GCIC: GCIC is one of a few "full-service" entrepreneurship support organizations in Ghana that support businesses past startup stage. Other hubs and incubators in Ghana are seeking to learn from GCIC.
- Climate businesses require more time and capital to become profitable than many technology businesses: Hardware/product design, buildout of sales and distribution networks, need for consumer financing, and heavy influence of regulation all lead to long growth paths for climate businesses, requiring longterm support from the entrepreneurship ecosystem.

FY20 Work Plan

GCIC will incubate its 5th and 6th cohorts in FY20 and recruit its 7th cohort. This will bring the total number of businesses close to 100 and results are expected to continue to meet or exceed goals as the stronger businesses from all cohorts grow their markets. Additional emphasis on recruiting women entrepreneurs will be made to ensure the

GCIC's innovative Women Entrepreneurs Transformation Program continues to reach as many high-potential, womenled climate businesses as possible. While GCIC will continue to focus on delivering high-quality services to its entrepreneurs, it will also turn its focus more intensely to sustainability. The dedicated fundraising team that was organized in late FY19 will reach broadly across potential sponsors, supporters, public financing, and donors to meet sustainability goals. Complementing this will be a continued focus on substantive local and international partnerships that can improve the delivery of GCIC programs and its overall impact and influence on Ghana's development of green industries. Finally, GCIC will seek to efficiently deploy the remaining resources in the Bank grant that concludes commitments in FY20 (disbursing through October 2020). GCIC's overarching goal is to exceed its results expectations for the grant period and establish itself as a sustainable organization that continues beyond the grant period.

Box 3. Graduation Time for the Second Cohort of the GCIC Business Incubator

December 12, 2018 marked a special day for 12 Ghanaian climate technology entrepreneurs, as they graduated on the GCIC premises at the Ashesi University campus. Their graduation came after one year of incubation, which among other activities included three months of entrepreneurship classes, executive coaching with renowned life coach Lanre Olusola, peer exchange trips, and a two-day Residential Wellbeing Retreat, where they interacted with speakers who had and business leadership entrepreneurial experience across sectors and industries.

The five female entrepreneurs in cohort 2 also took part in GCIC's first Women Entrepreneurship Transformation Program held in collaboration with women's leadership coach Rachel Allen. Aside from the premium business advisory and mentorship services GCIC offered, the entrepreneurs also received technical support in the development, prototyping, and testing of their innovation as well as financial PoC grants totaling US\$180,844.



Speaking on behalf of the graduating class, Lincoln Peedah, founder of a livestock and poultry company, Neat Meat Company Ltd, hailed the benefits that he and his other colleagues had gained from GCIC, noting that the assistance grounded their business. "This graduation is not an exit from GCIC, but rather a refreshing journey. The training has helped in the remodeling of our businesses by creating valuable models for revenue generation. We have also made an impact on the environment and sustained our businesses as well."

What's next after graduating from the incubator? The entrepreneurs went on to join the Climate Innovation Enterprise Network (CIEN), a GCIC alumni network where they can enjoy benefits such as recoverable grants

of up to US\$10,000 per entrepreneur and GCIC business advisory services. CIEN is part of an effort to impact the entrepreneurial ecosystem for entrepreneurs working in the green economy, and to provide a peer support and networking mechanism for entrepreneurs that completed incubation at GCIC.

Kenya Climate Innovation Center

Overview

The Kenya Climate Innovation Center (KCIC) provides incubation, capacity building services, and financing to Kenyan entrepreneurs and new ventures that are developing innovative solutions in energy, water, and agribusiness to address climate change challenges. KCIC is funded by U.K. Aid and the Danish Ministry of Foreign Affairs.

Progress in FY19

KCIC, now in its sixth year, has entered the second phase of operation. The center aims to improve its sustainability, increase the capacity of its staff and services offered, and increase its visibility. To this end, KCIC redesigned its activities and focused on four areas: quality of service provision to KCIC clients; supporting KCIC sustainability through resource mobilization; KCIC visibility; and organizational capacity development.



New Kenyan innovators worked with local communities to upscale their interventions.

Key Accomplishments

- <u>Work-plan development and support</u> The Bank engaged a project manager in Nairobi to work directly with KCIC and further support the development and implementation of the workplan.
- <u>Exploration of funding from the Green Climate Fund</u> KCIC requested the World Bank for \$30M funding through the Green Climate Fund (GCF) window administered by the Bank, to improve KCIC's long-term sustainability. Bank staff examined and deliberated through various internal channels (including at the IFC) whether the GCF window could be utilized. Despite an extensive effort in this regard, it was ultimately determined that KCIC didn't qualify for the Bank administered GCF window.
- <u>Corporate governance training</u> The Bank arranged the provision of Corporate Governance Training for KCIC's Board member to improve their understanding of corporate governance principles, which can be applied at the organizational level and to support startups and clients.
- <u>Development of new TA areas of focus</u> The Bank supported KCIC in developing the scope of new technical assistance areas: the first for new product design/development and prototyping, and the second for developing and implementing a communications strategy. TORs were developed engage external expert consultants to

implement these TA work streams, and the procurement was launched and approaching vendor selection by year-end.

Key Lesson Learned

• It is important to ensure that the strategic direction of the center is reviewed on an annual basis and that a work plan is agreed upon. This exercise was carried out in FY19, and it helped the team better focus their resources and time as well as identify remaining gaps that need to be addressed.

FY20 Work Plan

CTP will finalize support for KCIC through communications and visibility support to improve its sustainability, as well as to improve KCIC's capacity to better serve its clients. In addition, CTP will explore working in partnership with the Consultative Group to Assist the Poor (CGAP) on improving KCIC's ability to serve clients who do not have easy access to the center. These activities aim to ensure that KCIC can continue to sustain its business model, build on its value proposition, and continue to add value to the ecosystem.

Vietnam Climate Innovation Center

Overview

The Vietnam Climate Innovation Center (VCIC) is hosted by Vietnam's Ministry of Science and Technology and is in its fourth year of operation, having been approved by a decision of the Prime Minister in 2015. Its mission is to assist entrepreneurs and SMEs involved in developing technological solutions and enhancing business activities in the field of green growth. Its main activity involves providing funding and technical support for PoC projects to SMEs in cohorts of 15 top 20 companies. In addition, the VCIC provides services through its e-portal and database of technologies.

Progress in FY19

In FY19, VCIC initiated the second part of the project and its transition toward an independent, self-sustainable entity through additional financing from the Australian Government. VCIC worked with external consultants to assess its internal processes and increase its operational efficiency, as well as to develop a strategy for the future. VCIC also graduated all the firms from its PoC cohort, launched its e-portal, and launched its third PoC cohort. Finally, VCIC strengthened its gender focus: it incorporated a gender theme in its third PoC and received and delivered gender training to its clients.

Key Accomplishments

Services to entrepreneurs

- Met its agreed targets, bringing the total number of companies funded and supported by VCIC to 32.
- Launched PoC3, which received a record number of more than 500 applications thanks to a partnership with the Vietnam Women's Union that helped recruit women-led companies and companies with gender impact from among its wide network. Of these applications, 52 were selected for the pre-incubation stage. They include 35 women-led projects and a diverse range of sectors, such as energy efficiency, climate smart agriculture, and climate-resilient housing.

 Provided training and coaching to PoC3 pre-incubation project teams to help them prepare to apply for full incubation support.

Gender focus

 Increased the emphasis on gender and created a Gender Action Plan. The VCIC team received training to deepen their gender awareness to help them mainstream gender in their activities. VCIC also included gender responsive criteria in its PoC3 competition and created a training program on women leadership for its client companies. The number of women-led projects in PoC3 reached 50 percent, up from 44 percent for PoC1 and PoC2.

A new phase for VCIC

- In December 2018, VCIC's project timeline was extended until June 2020, and it received an additional US\$800,000 of funding from the Australian Government. This new phase will focus on improving VCIC internal processes, delivering PoC3, developing and testing new service offerings, developing a pipeline of new sources of revenue, and spinning out of the ministry as an autonomous entity.
- With the support of international and local consultants, VCIC reviewed options for different business models, organizational models, and revenue streams. VCIC also found ideas for its future business model through partnership discussions with many local and foreign organizations, including the Australian Water Association, Vietnam-Sydney Business Association, Solveig Corporate Development of the Netherlands, Korea Creative Technology Laboratory Company, Global Trade Association with Korea Technology, and Korea's Daegu Technology Complex.



Ten ID co-founder Tien Nguyen presented at the third annual ICTCOMM 2018 in Vietnam.

Box 4. Vietnamese Trailblazer Takes High-Tech Approach to Shrimp Farming

As one of 32 enterprises that have received financial and advisory support since VCIC opened its doors two years ago, Ten Innovation Design (Ten ID) has turned ambition into reality with its innovative supply chain solution for shrimp farming in Vietnam. In just a year, its Smart Pond Control System transformed from an idea on paper to receiving US\$995,000 in funding to develop and commercialize.

The trio of local information technology and financial entrepreneurs behind Ten ID successfully pitched their smart technology business initiative to VCIC during its second PoC contest in mid-2017. As one of 15 winning entries selected by VCIC from more than 300 submitted nationwide, they received a kick-start grant of US\$50,000 and much needed capacity building and

mentoring to drive the firm and its products toward market entry in 2019. Shortly after enrolling in the VCIC incubation process, they set up Ten Innovation Design Ltd. to formalize their business.

With VCIC support, Ten ID perfected its user-friendly technology, underpinned by the use of Artificial Intelligence and Internet of Things. The technology streamlines and protects outdoor shrimp farming at the mercy of climate change-driven severe weather events in Vietnam that degrade product quality and yield.

This high-tech approach increases climate resilience through higher survival rates, better product quality, and energy savings that translate into increased farmer profits.

Investors have identified the potential, with US\$645,000 received from a private equity fund in Vietnam and US\$350,000 under negotiation with Dutch investors for further refinement of the business model and technology.

"VCIC accompanied us on our journey and made a great contribution to our fundraising success through its marketing support and connecting us with investors as well as refining our business development strategies," said Tuan Le, CEO of Ten ID.

Tuan Le said the Smart Pond initiative has a key role to play in enhancing the climate resilience of Vietnam's and Asia's aquaculture sectors. Initial trials in the Mekong Delta's Soc Trang province have shown this technology can increase shrimp survival rates from less than 50 percent to 80 percent annually, heighten product quality, and save more than 30 percent in production energy. Ten ID has set an ambitious goal of being one of the leading companies in this area in Southeast Asia by 2023 with 5,700 systems in operation.

Key Lessons Learned

- Institutional memory and staff turnover: One important lesson for VCIC is to ensure that staff who leave the
 center leave their institutional memory behind. To address this, VCIC created a section of the e-portal in which
 staff will periodically share their knowledge across different categories, including partnerships, internal
 processes, and client information.
- Commercial orientation: The experiences from PoC1 and PoC2 highlighted the need to strengthen the
 commercial orientation, commercial readiness, and climate change impact of VCIC clients to have more visible
 results. VCIC revised the selection criteria for PoC3, changing the composition of the judging panel in favor of
 more business-oriented experts and excluding certain categories of applicants from the pool of projects, such
 as public research institutes.

FY20 Work Plan

- **PoC3**: VCIC will deliver PoC3 incubation grants and support services during the year and expects firms to graduate by the end of the fiscal year.
- Market Connect: VCIC will deploy a new service line to connect local entrepreneurial firms with the global resources they need to succeed. To achieve this, VCIC will work with one or more consulting firms.
- New strategy: The VCIC strategy for self-sustainability and autonomy will be finalized and approved by the Ministry of Science and Technology by the beginning of the fiscal year. The strategy will reflect the needs of public and private sector stakeholders for climate technology commercialization in Vietnam as well as globally.
- New entity: VCIC will be spun out of the ministry as a new independent entity by the middle of the fiscal year. This will allow VCIC to have the flexibility to offer new services that respond to market needs and the ability to collect revenues from public and private sources.
- Evaluation: VCIC will hire a consultant to conduct a final evaluation of the project, with support from the CTP Impact team.

Climate Innovation Center Mauritania

Overview

Launched in July 2018, the Climate Innovation Center Mauritania (CICM) aims to help grow the country's green competitive startups and SMEs to create better and more sustainable jobs, foster economic growth, and reduce poverty in the country. The green sectors targeted by CICM are those that are expected to generate the most jobs. The center is financed in part under the ClimateLaunchpad program and established as part of the IFC Mauritania Investment Climate & Entrepreneurship Advisory Services project.

Progress in FY19

In FY19, CICM focused on three entrepreneurial ecosystem gaps for startups and SMEs: the professionalization of incubation; prototyping and piloting of business ideas and products; and investment-readiness and access to early-stage finance.

Key Accomplishments

- Established one partnership with financial actors in the local ecosystem, with a total of US\$500,000 made available by financial and investment partners to graduates of CICM's incubation services.
- Provided three training sessions to CICM, as well as their incubatees, and a group session for several
 incubators in the ecosystem from international incubation and acceleration expert and Bank-IMF Fellow Adnane
 Addioui (the co-founder of the Moroccan Center for Innovation and Social Entrepreneurship and former director
 of the Enactus Morocco). Mr. Addioui was also embedded in CICM for three days, working closely with seven
 staff members and providing other capacity-building exercises to improve their performance and the quality of
 services provided to incubated green businesses.
- Held the second edition of the Entrepreneur's Marathon startup competition under the guise of the Youth Chamber of Commerce and its incubator, the Innovation Lab (iLab). Eighteen entrepreneurial firms were recruited for this year's marathon and were supported through coaching and training. Five winners received cash prizes to be invested in their businesses (US\$11,000 for the overall winner and US\$5,500 to the winners in four other categories). The post-incubation prize is an investment-readiness program currently being provided to both 2017 and 2018 winners, as well as incubatees of other local incubators. The program seeks to increase the marathon finalists' investment-readiness and includes peer learning sessions, coaching and mentoring, training in public speaking, and finalization of their business and financial plans.
- Supported the piloting of three CCIM-incubated green business prototypes, including a platform to
 manage waste collection in the city of Nouakchott, eco-construction from plastic into bricks (construction of the
 company's plant is underway) and a solar-powered window that acts as source of energy (all Marathon 2017
 and 2018 winners). The tailored support provided to the green businesses included access to equipped
 workspaces, dedicated staff, online resources, and attendance at international fora in Tunisia and Senegal to
 network and meet with potential investors.
- Worked to establish CICM as the leading source of centralized and reliable information on the Mauritanian entrepreneurial ecosystem, namely by building an online entrepreneurship platform with tools and databases that is being developed in partnership with several stakeholders in the ecosystem, including government, the private sector, and other incubators. The design of the online platform, as well as its management and operating principles, has been approved by stakeholders, and content (including key contributors) is currently being finalized.
- Produced the final Marathon report, including an assessment of the incubation program and piloting of

prototypes, as well as the national awareness campaign and profiles of incubated startups (including feedback received from participants via the M&E process).

FY20 Work Plan

The Bank will continue to oversee and provide technical assistance to CICM as it continues to develop the ecosystemwide platform (housed under CICM in partnership with several ecosystem partners) and to implement the postincubation phase for Marathon winners (two modules on human resources and leadership/management are outstanding). CICM will also apply to implement the 2019 edition of the Marathon. The FY20 competition is expected to be more innovative and align with the program's renewed focus on ecosystem professionalization and promoting collaboration across the ecosystem to leverage the strengths of various incubators and higher education institutions. FY20 activities will also be more active in the Mauritanian enterprise development reform policy agenda. In the meantime, CICM will continue to work toward securing additional partnerships with government agencies, donors, and NGOs and launching additional entrepreneurship business support and advocacy activities.

Morocco Climate Innovation Center

Overview

Launched in 2014 by the Moroccan Agency for Solar Energy (MASEN), with the support of CTP, the Morocco Climate Innovation Center (MCIC) uses the administrative structure of Cluster Solare. MCIC is funded by the Moroccan Ministry of Industry and MASEN and receives technical assistance support from GIZ. MCIC aims to help unlock clean technology markets in Morocco by building the capacity of MCIC/Cluster Solaire and Moroccan ecosystem players to support and scale climate technology, and in particular, sustainable energy businesses.

Key Accomplishments

- Launched the Green Business Booster, a two-year investment readiness support program for clean technology startups. Sixteen startups were selected to take part in year one, split into two cohorts. The startups will receive five days of training, one-on-one sessions, and networking opportunities with various ecosystem actors. Partners of the Booster are Cluster Solaire, Caisse Centrale de Garantie (CCG), and the European Bank for Reconstruction and Development (BERD).
- In partnership with Cluster Solaire, AMEE, and AMISOLE, organized in June 2019 a green financing event for SMEs. The meeting presented existing green financing mechanisms on the market, in favor of Moroccan companies involved in renewable energy projects and energy efficiency.
- Participated in the CBIN peer learning event in Ghana, helping to share and learn best operational practices with other CICs.
- Participated in the MicroMentor online mentoring platform that was piloted with CCIC.
- Implemented a two-day workshop in Casablanca in December 2018 as part of the Product and Engineering Support Pilot (see Box 5). The pilot provided design and engineering reviews for six MCIC and two ECIC hardware-focused startups.

Key Lessons Learned

- Partner with organizations or locate experts who can address gaps in CIC services that can help Moroccan startups on their path to sustainability. An example is the expert design and engineering review provided in the ASME pilot, which MCIC itself could not provide and was cited as helpful by the participating companies.
- Consolidate the pipeline and push entrepreneurs to renew themselves.
- Encourage funds to invest in clean technology with specific targets, such as patents and technology.
- Explore virtual offerings for training as much as possible in addition to in-person workshops.

FY20 Work Plan

Objectives for FY20 include: revise the results framework and indicators; increase networking events for ecosystem players; update the project timeline based on funding; and continue fundraising and reaching out to donors to bridge funding gaps.

Box 5. Expert Design and Engineering Reviews Support Moroccan and Ethiopian Startups

When Fatima Beraich started her company Biodôme in Morocco, she wanted to create a better-designed waste digester to turn organic waste into biogas. Yet she lacked product design support to further develop her business. Like Biodôme, many green businesses rely on a particular product or process, but to enter the market and have a large-scale impact these young companies must cultivate affordable and cutting-edge technologies. CICs in emerging countries have limited capacity to provide process, product, and engineering advice.



The ASME pilot offered technical support and critiques to eight startups.

To bridge this gap, CTP partnered with ASME, a 150-year-old scholarly society that supports scientific research and multidisciplinary engineering around the world. Under CTP's Product and Engineering Support Pilot, ASME, E4C, and Catapult Design provided design and engineering reviews for eight CIC clean technology startups, six from the Morocco CIC and two from the Ethiopia CIC. The reviews covered customer and user knowledge, hardware validation and development, manufacturing optimization, and implementation strategy.

After a comparative analysis of the companies' products, a two-day December 2018 workshop was held in Casablanca, Morocco. At the workshop, a team of industry leaders, ecosystem experts, and fellow hardware entrepreneurs provided design and engineering reviews and company-specific recommendations and action plans. For example, regarding Biodome, the experts suggested Ms. Beraich carry out a competitive analysis of materials used by other companies to manufacture the biogas chamber and to examine manufacturing possibilities in Morocco to reduce costs.

Participants said they would strongly recommend the program, noting that the workshop framework and coaching were valuable and the experts were highly suited to address their companies' specific needs.

"I appreciated that the experts took the time to study the projects before meeting us; it showed that they really invested in this. The most important thing is to have established relationships with these specialists, with whom I stayed in touch," said Abdelhamid Khlidi, founder of BSolar, which aims to improve accessibility and installation processes for solar home systems.

Following the workshop, ASME, E4C, and Catapult Design tracked the companies' progress toward implementing their action plans for two months. They found that several companies identified new needs and dependencies; companies in the concept phase engaged their users to further define and validate their product concept; and companies beyond the concept stage made significant progress in implementing their action plans. The pilot experience was shared through a webinar and at the peer learning event in Ghana.

Nigeria Climate Innovation Center

Overview

Launched in August 2018, the Nigeria Climate Innovation Center (NCIC) aims to accelerate energy access in Nigeria by supporting early-stage enterprise development and increasing the investable pipeline of local off-grid solar companies. NCIC is structured as an independent, locally owned, and privately-run organization; it launched with support from its partners, the Enterprise Development Center (EDC) of the Lagos Business School, and the Office of the Vice President of Nigeria.

Progress in FY19

In FY19, NCIC focused on_improving the effectiveness, efficiency, and sustainability of NCIC and testing new interventions, specifically an incubation program.

Key Accomplishments

- Started the first incubation cohort in March 2019, with 15 firms selected after a rigorous selection process. Developed a comprehensive 16-week training program for the incubatees.
- Conducted 11 SME training sessions based on improved training materials.



Participants from NCIC's first cohort of its incubation program.

 Partnered with Climate-KIC to run the first edition of the ClimateLaunchpad competition in Nigeria, with three national finalists competing in the global final competition held in Scotland in November 2018.

- Facilitated and held key discussions with development partners and potential investors to support NCIC, including DFID, GIZ, and investors BetterVest and All-On.
- Partnered with impact investor All-On to partly fund NCIC's first incubation program, with US\$45,000 raised.
- Secured a location for at least its first three years of operations at the EDC Green Building (within the Lagos Business School), an innovation space that includes a design studio and a co-working area.
- Completed a staffing plan and adopted manuals for human resources, procurement, operations, and financial management.
- Designed and adopted an M&E framework and developed an M&E system. NCIC started the data collection process and conducted a baseline data collection process for its incubatees.

FY20 Work Plan

In FY20, NCIC will continue to focus on three objectives:

- Strengthen its institution and governance frameworks. The team has recruited key staff, including business analysts, an M&E specialist, a finance and administrative officer, and an operations manager. NCIC management will continue to work with the team to ensure that key operational manuals (financial management, procurement, and human resources) guide daily NCIC operations. In addition, NCIC will be joining the Aspen Network of Development Entrepreneurs (ANDE).
- 2) Strengthen its incubation program based on feedback from the maiden cohort. For example, NCIC will strengthen the selection process and create additional screenings to improve the quality and dedication of SMEs in the incubation program.
- 3) Roll out an acceleration program. Core elements of the NCIC acceleration program will include the setup of a climate venture fund and the development of a residence technical advisory program. In the residence program, NCIC would provide resident mid-level managers to support the business operations of companies under the acceleration program for a defined period.

Additional funding for NCIC would guarantee the presence of a robust team and strengthen the management of NCIC.

Global Activities

Market Connect Ghana

Overview

The Market Connect Ghana pilot ran from late FY18 through FY19; it designed and tested a mechanism for facilitating cross-border climate technology business partnerships. The goal was to identify an effective model for driving adoption of proven clean technology and business models into Ghana. The activity looked to facilitate matches between external businesses (diffusers) and local businesses (adopters). The pilot addressed the typical challenges encountered with existing approaches to cross-border matchmaking to present a process that could be replicated in other countries.

The pilot was shaped by lessons from a successful Cross Border South Africa program and a more challenging Cross Border Kenya program. The Bank chose Ghana for the pilot because of its national support for green growth, business environment receptive to cross-border collaboration, and existing programs to support green entrepreneurs including GCIC. A local consortium in Ghana led the effort—including Reach for Change, Mirepa Capital, and Innohub—with support from the University of Cape Town (UCT) Design School, Green Cape South Africa, and the Bank's CTP team.

Progress in FY19

The Market Connect Ghana pilot was successfully completed in FY19, concluding in March 2019. The pilot began with the initial design of the cross-border matching mechanism, using a design-thinking approach facilitated by the internationally renowned UCT Design School. The mechanism was then tested and improved through iterative design throughout the pilot. Additional phases included gathering market intelligence, building a pipeline of potential climate technology diffusors and adopters, facilitating matches, and providing post-match support. The pilot engaged partners throughout these phases to build trust and outreach, including the Ghana CEO Network, Association of Ghana Industries, and GCIC.

From a pipeline of more than 50 potential Ghanaian adopters and international diffusors, the pilot pursued eight matches. Of these, four have ongoing potential and two memorandums of understanding were signed around tangible business partnerships. Matches were made in climate-smart agricultural technology and waste management technology. A learning report describes the pilot and lessons learned. The lessons have been shared with other CTP projects and the Bank is considering how best to use this report beyond the CTP.



The Ghana Market Connect Design Workshop was held in July 2018.

Key Accomplishments

• Cross-border demand for existing climate technology solutions was demonstrated: The strong level of interest from both diffusors and adopters demonstrated the interest and potential to transfer climate technology solutions across borders.

- Four tangible cross-border climate technology partnerships were established: Within the limited 12-month timeframe of the pilot, two matches were formalized through memorandums of understanding and two more proceeded to an advanced stage that may lead to ongoing business partnerships or technology agreements.
- Local partners are incorporating the cross-border services into their own offerings: Several of the local partners, including Mirepa Capital and Innohub, plan to continue offering cross-border matching alongside their existing entrepreneurship support offerings.

Key Lessons Learned

- Local intermediaries are critical to successful cross-border technology partnering: The pilot repeatedly demonstrated that trusted relationships and understanding of local business context was required to interest potential adopters and guide potential diffusors.
- Strong financial incentives on both ends of a match were required to sustain participation: While the list of interested businesses and organizations was long, the few matches that succeeded were based on mutual potential for increased profits. Organizations motivated by mission eventually moved on.
- Finding a sustainable model for a cross-border technology mechanism remains a challenge: Despite the high potential for development gains and interest to participate, cross-border technology diffusion is not a profitable activity for the partners doing the match facilitation. Potential approaches to sustainability include embedding the service within an investment promotion agency, offering cross-border facilitation alongside an SME fund's investment offering, or including cross-border as part of an incubation or acceleration program.

Market Connect Kenya

Progress in FY19

In early FY19, Market Connect Kenya activities were finalized after conducting two workshops in Nairobi to share the findings of matching services to support later-stage entrepreneurs, which resulted in the finalization of a lessons learned report on business-to-business partnerships. It was decided that further Market Connect Kenya activities would not be pursued since it was not one of the strategic areas that KCIC prioritized this fiscal year.

Insights from Early-Stage Financing Study

Overview

The study focused on understanding patterns of early-stage financing into green firms in Sub-Saharan Africa (SSA). It tracked data on more than 800 disclosed investment transactions associated with 157 green firms and involving 336 investors in SSA countries between 2006 and 2017. In doing so, the study provided answers to several critical questions, including who are the active investors in early-stage green firms in SSA, which green sectors and countries in the region attract more investment, what types of instruments are being used by investors in deploying capital, and what are some of the emerging growth trends in green sectors that show potential to attract additional capital in coming years. The study also drew on interviews with 41 investors, grant providers, and intermediary organizations to fully understand the opportunities and challenges investors perceive to face in identifying, investing, and managing investment in early-stage green firms.

Key Findings

Together the investment transaction database and the qualitative interviews highlight several notable patterns in how early-stage capital is being deployed among green firms in SSA:

- Investment: Early-stage investment into green firms in SSA is growing slowly compared to growth-stage financing.
- Financing instruments: Equity and debt are the most commonly deployed financing instruments, but grants played a catalytic role in developing green sectors.
- **Geography:** Investment is mostly concentrated in the East African market, although there are emerging trends of movement toward West Africa.
- Sector: The bulk of investment capital (81 percent) to early- and growth-stage green firms in SSA over the past 12 years has gone toward the off-grid energy sector, especially among firms that combine solar energy solutions and mobile payment (the proverbial "pay as you go" model). In contrast, the other green sectors—climate-smart agriculture, water management, and waste management—have seen very little investment, although investment transaction data analysis reveals early signs of a new growth dynamic in the climate-smart agriculture sector.
- Investors and investees: Investment is geared toward green firms with international founders and comes primarily from international investors with limited local presence.

What could increase the availability of early-stage finance for green firms in SSA?

- New types of investment vehicles and instruments, such as specialized sector-focused funds, "venturebuilding" funds, and flexible capital vehicles that reflect green firms' business lifecycle.
- Engagement of local commercial financial institutions and availability of early-stage financing in local currency through the capacity building of local commercial financial institutions, a line of credit to local commercial financial institutions, locally based funds, and a local currency debt fund.
- **De-risk mechanisms**, such as first-loss capital, partial credit guarantees, and co-investment and matching funding; strategically deployed grants for less developed sectors and geographies, and alongside or preceding investment for early-stage green firms to have a smoother capital curve.
- A stronger pipeline of investable deals through collaboration among investors and business support intermediaries on investment readiness, pre-investment technical assistance support facilities, and a deepening knowledge of investors on green sectors and of local entrepreneurs on engaging investors.

Review of Early-Stage Financing Mechanisms

Overview

In FY19, a study to assess the potential for introducing early-stage financing mechanisms for green entrepreneurs was completed as part of the "Catalysing Private Financing for Climate Impact in Africa" program, supported by the International Climate Initiative. The study reviewed the ecosystems of five African candidate countries—Ghana, Kenya, Morocco, Senegal, South Africa, and Cote d'Ivoire. The review provided analysis and preliminary scoring in four areas to help evaluate and rank the countries as part of the appraisal process: key economic indicators, market indicators, entrepreneurial ecosystem conditions, and investment conditions in early-stage firms. In addition, the review included annexes with information to be used during the appraisal mission, including contact information, potential partners, and existing programs.

Key Findings

- Bank lending rates are highest in Kenya and Ghana, making it difficult for small businesses to borrow capital through traditional debt mechanisms and contributing to the early-stage access-to-finance problem, as well as meaning that investors need to secure higher returns to offset the elevated cost of capital.
- Mobile money penetration can be an important variable for the development of innovative and scalable solutions; there are very low levels of mobile money penetration in Morocco.

- Fossil fuels are the dominant source of energy in each of the countries, with the exception of Kenya. Kenya has the highest percentage of its generation coming from renewable sources of the candidate countries. There is a need to expand renewable sources to address flow risk and price fluctuations.
- Energy access is lowest in Kenya, followed by Senegal. Access to clean cooking is lowest in Kenya, followed by Ghana.
- The Global Entrepreneurship and Development Index (GEDI) rates countries based on entrepreneurial attitudes, aspirations, and activity. GEDI's analysis shows that South Africa and Morocco are ranked the highest out of the candidate countries, followed by Ghana, Senegal, and Kenya, with the latter three having comparable scores.
- Findings from the investment conditions review are highlighted in the "Insights from Early-Stage Financing Study."

Table 2. Preliminary Scoring from Early-Stage Financing Mechanism Review

Indicator	Ghana	Kenya	Morocco	Senegal	South Africa	Cote d'Ivoire
Market Impact	3	4	2	1	4	2
Ecosystem Conditions	3	4	3	1	5	2
Investment Conditions	2	5	1	3	4	2
Implementing Conditions (TBD)	TBD	TBD	TBD	TBD	TBD	TBD
Overall Score	2.7	4.3	2	1.7	4.3	2

Note: This evaluation does not include the implementing conditions, which are difficult to measure or capture with secondary research, as that will be evaluated during the appraisal missions.

Note: The current version of the scoring weighs scoring evenly, however this will be modified as needed going forward.

Final CTP Global Evaluation

Overview

This report presented the findings of an accountability and learning review of CTP Global. CTP Global is funded by DFID and forms part of the multi-donor CTP, which is managed by the Bank and delivered by CTP. DFID's involvement in the wider program includes co-financing the Kenya, Ethiopia, and Vietnam CICs, as well as contributing to the overarching CTP and its components: ClimateLaunchpad, CBIN, Market Connect, and Impact and Insight.

The review emphasized learning what works and how. It used three country case studies—Kenya CIC and KCV, Ethiopia CIC, and Ghana CIC and GCVF—and a global case to test the current theory of change and logical framework results. Approximately 100 key informant interviews were undertaken, together with a review of program documents, to answer learning questions drawn from the theory of change.

Key Findings

- Services provided by CICs were broadly relevant to client needs. Nonetheless, businesses that were already revenue-generating typically found generic training to be less useful than tailored support.
- CICs' access-to-finance offerings have been limited by relying on PoC grants as the single financial instrument. Growth potential clients highlighted that access to seed or working capital is a critical gap for early-growth stage climate sector companies.
- KCVF and GCVF, developed with CTP support, had pilots to fill in the seed capital gap of US\$250,000–\$500,000 space before bridging to venture capital investment.
- CICs have had a stronger focus on gender than other incubators and this may provide a comparative advantage going forward.
- As the size and complexity of the climate and clean technology sector grows, this requires some re-evaluation of the role of CICs shifting from being just incubators to more of a facilitator or coordinator.
- The performance of the ClimateLaunchpad, Market Connect, and CBIN components exceeded log frame targets and CIC CEOs all valued the support they received from CTP.
- The CTP M&E system allows comparison across CICs against key performance indicators but provided limited feedback on learnings to country-level stakeholders.
- There is little awareness of insight component knowledge products among country- or global-level stakeholders.

Evaluation of Climate Innovation Policy and Instrument Impacts

FY20 Workplan

In FY20 the World Bank will undertake evaluation research focused on understanding the climate friendly impacts that can be achieved through innovation policy. This evaluation work will contribute to furthering the goals of the climate technology program by building evidence around how innovation policies and instruments can contribute to climate outcomes. Research topics will include evaluation of climate friendly technology transfer across firms and case studies of climate and environmentally friendly innovation policies. Specifically, this will include expanding a Bangladesh impact evaluation to study aspects of technology spillovers between firms that adopt climate friendly production technologies and supplementing an innovation policy instrument guide with case studies of innovative policy instruments that promote green outcomes such as voluntary industry standards that worked well in Chile. Additional research within the mandate of the climate innovation trust fund may be pursued as resources allow. Evaluation work supported by the CTP trust fund will focus on baseline data collection and mid-point data assessment given the timeframe until closing of the CTP trust fund. This research will build off of ongoing World Bank research which will ensure that the findings are thoroughly disseminated and incorporated into current and future World Bank operations.

Impact

Overview

In FY19 the Impact team continued to provide M&E support to CTP Bankexecuted and recipient-executed activities, maintaining rigorous accountability while emphasizing learning and data-driven decisionmaking with a drive toward building capacity to ensure long-term sustainability.

Following the launch of the Green Incubator Impact Tracker (GIIT) in FY18, throughout FY19 the Impact team focused on working in consultation and collaboration with CICs to iterate its design and functionality. The team's goal was to ensure the highest levels of use, accuracy, and utility.

Data Collection and Exploration

The GIIT is an online platform that allows CICs to submit, track, and explore data on their portfolio companies. Based on lessons learned from CTP's data collection experience with Survey Monkey in FY17, the GIIT was built with the intention of enabling CIC M&E staff to shift their mindsets from one of reporting to one of data-driven decision-making. In FY19, the Impact team leveraged user-centered iteration to bring the GIIT to critical new levels of utility.

Consultations with CIC users revealed that the GIIT successfully achieved its goal of taking a rigid reporting structure and

Box 6. The Green Incubator Impact Tracker

As noted during its launch in FY18, the GIIT has high utility for a diverse set of users, including CIC managers and staff, CIC portfolio companies, potential investors, and Bank teams. Different users can use the GIIT for a variery of tasks:

CIC managers and staff: Enter baseline data and quarterly updates all in one place, track enterprise- and CIC-level progress, produce quarterly results reports, and present data to portfolio companies and potential investors.

CIC portfolio companies: View a data-driven summary of business lifetime with the ability to pinpoint critical decisionmaking moments and drivers of growth and access profiles of similar businesses to compare and learn from their drivers of growth.

Potential investors: View a dashboard with a matrix showing CIC portfolio companies that have progressed from unfunded and/or unprofitable to funded and/or profitable. They can target the high-potential companies.

Bank teams: Validate reporting data, view dashboards for comparison cross CICs, filter businesses by sector, status, and cohort, and monitor CIC use of the GIIT to understand their level of commitment to data accuracy, reporting, and turning data into action.



The latest iteration of the GIIT dashboard.

transforming it into an engaging, high-utility, online platform built to fit the unique needs of CICs and their portfolio companies. This resulted from the interface combining live-update aggregate data visualization dashboards with a data input process that aligns with the quarterly results reporting framework.

In FY19, the Impact team focused on four key elements as the GIIT was fully rolled out to all CICs that were still being monitored:

- 1. **Iterative design:** The Impact team consulted and collaborated with the Caribbean, Ghana, Kenya, and Vietnam CICs to iterate the design and functionality of the GIIT, including the selection of additional variables and new data visualization and aggregations for inclusion in the GIIT.
- 2. **Tailored training:** In addition to quarterly check-ins with GIIT users during the results reporting periods, the Impact team had one-on-one remote training calls with CIC M&E staff to ensure they knew how to navigate the GIIT's user interface and were equipped to optimize its utility.
- 3. **Relationship building:** The Impact team dedicated efforts to building and maintaining strong relationships with CIC M&E staff who were using the GIIT. This was done by keeping open lines of communication and performing diligent follow-up on users' inquiries.
- 4. Accurate data validation: Rigorous accountability is a critical element of the Impact team's work; diligent data validation was built into the GIIT's rollout and use.

Theories of Change for New CICs

After leading the development of theories of change for all CTP program components in FY18, in FY19 the Impact team focused on providing guidance and capacity building for the two new CICs in Mauritania and Nigeria. While the initial results frameworks were developed in FY18, FY19 required the team to be available as the CICs started to get off the ground. This ensured that, from the outset, the two new CICs understood not only how to report using the formalized results framework, but how it aligned with the broader theory of change, which was a guiding force behind their launch.

Key Accomplishments

- Continued rollout of the GIIT, with four CBIN members currently using it (Caribbean, Ghana, Kenya, and Vietnam).
- Ongoing and ad-hoc capacity building for CIC M&E staff on both the GIIT and quarterly results reporting data validation standards.
- Ongoing consultations on the results frameworks of the two new CICs (Nigeria and Mauritania).

Key Lessons Learned

• An online data platform cannot be built or iterated on if there is either a lack of data or an abundance of inaccurate data. The first risk—lack of data—was mitigated through targeted, tailored trainings for CIC M&E staff on the GIIT's user interface. The Impact team understood the importance of using an iterative, user-centered design process and was therefore able to work closely with the CIC M&E staff to ensure they were uploading data. The second risk—inaccurate data—was mitigated by supporting CIC M&E staff to understand the importance of data validation. The Impact team learned the importance of communicating the message of "bad data in means bad data out." Additionally, through consultations with CIC staff, the Impact team learned the importance of designing the GIIT with built-in validation capabilities. For example, when entering baseline data the form cannot be submitted without entering both the number of employees and the number of female employees. Similarly, when entering financial data on funding secured, if the date and currency are not entered the form cannot be submitted.

- During the early stages of the GIIT rollout to CIC users, it was difficult to encourage CIC staff to upload data. The Impact team quickly learned that building relationships built on trust and open lines of communication were critical to achieving the team's goals: high levels of adoption and use, timely and accurate data collection, and renewed CIC staff mindsets around real-time data-driven decision making. Over time, the Impact team saw a strong correlation between CIC staff buy-in and the team's commitment to ongoing, always available communication styles.
- Through consultation with CIC staff, the Impact team learned that one of the biggest barriers to CIC users inputting accurate data in a timely manner was during the data collection process. CIC portfolio businesses pushed back on data collection for two reasons: (1) they did not want to share information about their early-stage business for fear it would not remain confidential, and (2) they did not see the value of reporting the same metrics every quarter—it was too much required reporting. The Impact team listened to these challenges and learned the importance of supporting the CIC M&E staff to communicate to portfolio businesses about data collection and reporting in more productive ways. The GIIT was an important tool in this process, since it could be used to demonstrate the added value of accurate data, the decision-making power of data dashboards, and how data can be used to open doors to new funding opportunities.
- Through consultation with CIC and the WBG climate team, the CTP M&E team added a new sheet in the results reporting file, "Climate Impact Worksheet", that automatically calculates CO2 emissions reductions for a range of products. The range of CO2 emissions mitigated was based on the technical specifications calculated on products commercialized by CIC supported businesses that was shared with the WBG team to provide a range of CO2 emissions per product. However, the challenge remains that this calculator has been designed for a finite range of products and cannot be used for CIC clients who are not producing these types of products. In that case a new batch of products specifications is shared with the WBG climate team and new products CO2 emissions mitigated calculations are added to the results reporting template.

Summary of Key Indicators

Note: For all of the summary indicators below, FY19 only includes data for the Caribbean, Ghana, Kenya, and Vietnam CICs. The other CICs were not monitored for results reporting during FY19.

Table 3. FY19 Impact

CIC Incubated Businesses (Q1–Q4)				
Number of Low Carbon/Energy Efficiency Technologies Supported (units installed)	6,634			
Number of People with Improved Access to Modern Energy	230,167			
Number of People with Improved Access to Clean Water	489			
New CICs Launched	2			
Number of Knowledge Products Developed	97			

Note: Vietnam CIC impact indicators are not included for Q4; data validation is in progress.

Figure 3. Number of Low Carbon/Energy Efficiency Technologies Supported



Note. Vietnam CIC impact indicators are not included for FY19 Q4; data validation is in progress.

Figure 4. Number of People with Improved Access to Modern Energy



Figure 5. Number of Businesses Supported



Figure 6. Private Finance Leveraged



Figure 7. Number of Businesses that Raised Early Stage and Growth Stage Finance







Note. FY16 data did not collect job creation disaggregated by gender.

CTP Communications

Context

The transition of CTP communications to FCI communications coincides with a renewed focus by the WBG to: (1) expand the reach of its engagement at country level and (2) enhance a deeper understanding of challenges and alternatives across the various stakeholder and audience groups that directly or indirectly influence development progress and results. CTP's focus on climate technology entrepreneurs and their engagement with intermediaries at the country level offers a unique opportunity to communicate on this growing momentum while sharing the know-how to leverage the experience from pilot to scale.

Progress Update

- During FY19, the FCI communications team worked closely with various trust funds to shape a global practice
 narrative on entrepreneurship and the use of technology to accelerate response to pressing development
 challenges. Specifically, the FCI communications team continues to rely on the outcome of audience and
 stakeholder surveys conducted by the institution to:
 - Market our knowledge effectively so key audiences can access and use relevant information.
 - Improve how we package knowledge products to better meet the needs of the audience.
 - Enhance our ability to influence key audiences at the global and country levels.
- With a focus on results and impact, the FCI communications team partnered with the FCI knowledge team to
 manage content that can address relevance and scale for WBG staff, senior management, and external audiences.
 The experience of the program has been developed and packaged in several formats that are a better fit for each
 of these groups. This includes the following activities (completed/in progress/planned):
 - Edit/transition online content for FCI's knowledge platform that is accessible to WBG staff and external audiences.
 - Consolidate various trust fund access points to FCI's communication and knowledge platforms to ensure content quality, validity, and relevance to audiences at global and country levels. This work is coordinated with WBG regional and country teams so that they can also promote the content to their audience.
 - Produce a series of blogs that capture the know-how and success of the Green Competitiveness Launchpad and CICs, highlighting the contributions of development partners and how the experience aligns with their respective priorities.
 - Incorporate key results and stories in talking points for senior management at the global practice and WBG levels, and leverage FCI's WB/IFC joint identity.
 - Incorporate the CTP experience in knowledge events where relevant and as convened year-round by the FCI knowledge team. These events are also promoted by the FCI communications team.
 - Feature the experience of CTP in stories on the FCI external homepage and on the WBG intranet as part of the global practice's work on this agenda.
 - Produce 2–3 working papers on how the CTP experience has contributed to climate technology entrepreneurship and the potential for leveraging it from pilot to scale to drive a broader impact. The papers can be promoted by global and regional think tanks.

Table F1. Donor contributions to the CTP Trust Fund TF071681 as of end FY19

Contributions by	Expected Comm	itments	Received as of FY19		
Programs	('000 donor currency)	(USD '000)	('000 donor currency)	(USD '000)	
Kenya					
DFID	4,000 GBP	6,344	4,000 GBP	6,344	
Danida	50,000 DKK	9,073	50,000 DKK	9,073	
Ethiopia					
DFID	3,000 GBP	4,713	3,000 GBP	4,713	
Norway via DFID	4,200 GBP	6,307	4,200 GBP	6,307	
Vietnam					
DFAT	4,650 AUD	4,089	4,650 AUD	4,089	
DFID via DFAT	2,699 AUD	2,462	2,699 AUD	2,462	
Ghana					
Danida	66,700 DKK	11,066	66,700 DKK	11,066	
Netherlands*	4,000 USD	4,000	3,132 USD	3,132	
Global					
DFID	12,600 GBP	18,729	11,600 GBP	17,420	
TOTAL		65,782		65,040	

*433,750 USD was received in July 2019 (FY20).

Table F2. FY18 and FY19 CTP Trust Fund Budget and Disbursements (USD '000)

Climate Technology Program (CTP)		FY18 Budget	FY18 Disburs ements	FY18 Disburs ement Rate	FY19 Budget	FY19 Disburs ements	FY19 Disburs ement Rate
CICs	Kenya Climate Program*	515	423	82%	-	231	N/A
	Kenya CVF	200	237	119%	475	164	34%
	Grants to Kenya CVF	1,400	1,719	123%	1,500	146	10%
	Ethiopia CIC	500	863	173%	900	1,161	129%
	Grants to Ethiopia CIC	1,000	235	24%	0	-53	N/A
	Vietnam CIC	0	51	N/A	60	72	117%
	Grants to Vietnam CIC	1,500	872	58%	1,600	682	43%
	Ghana CIC**	175	235	134%	475	445	94%
	Grants to Ghana CIC	2,000	1,911	96%	2,000	2,154	108%
	Grants to Ghana CVF	500	0	0%	500	699	140%
	TOTAL CICs	7,790	6,547	84%	7,510	5,701	76%
Global	Launchpad	700	891	127%	80	106	133%
	Insight	600	428	71%	550	51	9%
	CIC Network	750	786	105%	250	275	110%
	Market Connect	950	963	101%	250	30	12%
	Impact	280	220	79%	500	439	88%
	Global Program Design and					F17	N1/A
	Coordination	-	-	-	-	517	N/A
	TOTAL Global	3,280	3,288	100%	1,630	1,419	87%
Communications and Knowledge		350	317	01%	100	21	21%
Dissemination		550	517	7170	100	51	J170
Program	n Management	500	684	137%	600	43	7%
TOTAL		11,920	10,836	91%	9,840	7,194	73%

*Includes Kenya Market Connect activities (\$160k) **Includes Ghana Market Connect activities (\$250k)

Table B1. CTP Proposed FY20 Budget Envelope (USD '000)

Climate Technology Program (CTP)	Budget FY20 and FY21
Program Activities	
Kenya CVF	284
Grants to Kenya CVF	1,624
Vietnam CIC	250
Grants to Vietnam CIC	1,897
Ghana CIC	360
Grants to Ghana CIC	2,953
Grants to Ghana CVF	2,501
TOTAL CICs	9,869
Others	
Monitoring and Evaluation	80
General Program Management	117
Evaluation of Climate Innovation Policy and Instrument Impacts*	550
TOTAL	10,616

* This activity is funded through interest income of the Climate Technology Program MDTF.