

Bringing Climate Opportunities to Entrepreneurs: Lessons Learned from the Caribbean Climate Innovation Center

The Caribbean Climate Innovation Center was launched in January 2014 to help local companies build their businesses in climate-related sectors. In a region with great vulnerability to climate change—and very high energy costs—new clean technologies hold tremendous promise. This In Brief draws lessons from the center's operation, focusing on how the idea generation sessions were essential to seed local companies with climate-related business opportunities and introduce new ideas to local climate markets.



Climate Challenge and Opportunity for the Caribbean

The Caribbean region faces serious climate change risks disproportionate to its small global greenhouse gas footprint: sea level rises, extreme weather events, and many other climate-related problems threaten to cripple key industries such as tourism, fishing, and agriculture. In addition, dependence on expensive and volatile imported fossil fuels have led to some of the highest electricity prices in the world (figure 1), which act as a major drag on economic development. Although these challenges have undermined the region's competitiveness, they also present excellent market opportunities for innovative entrepreneurs interested in renewable energy, water management, sustainable agribusiness, and other clean tech sectors.

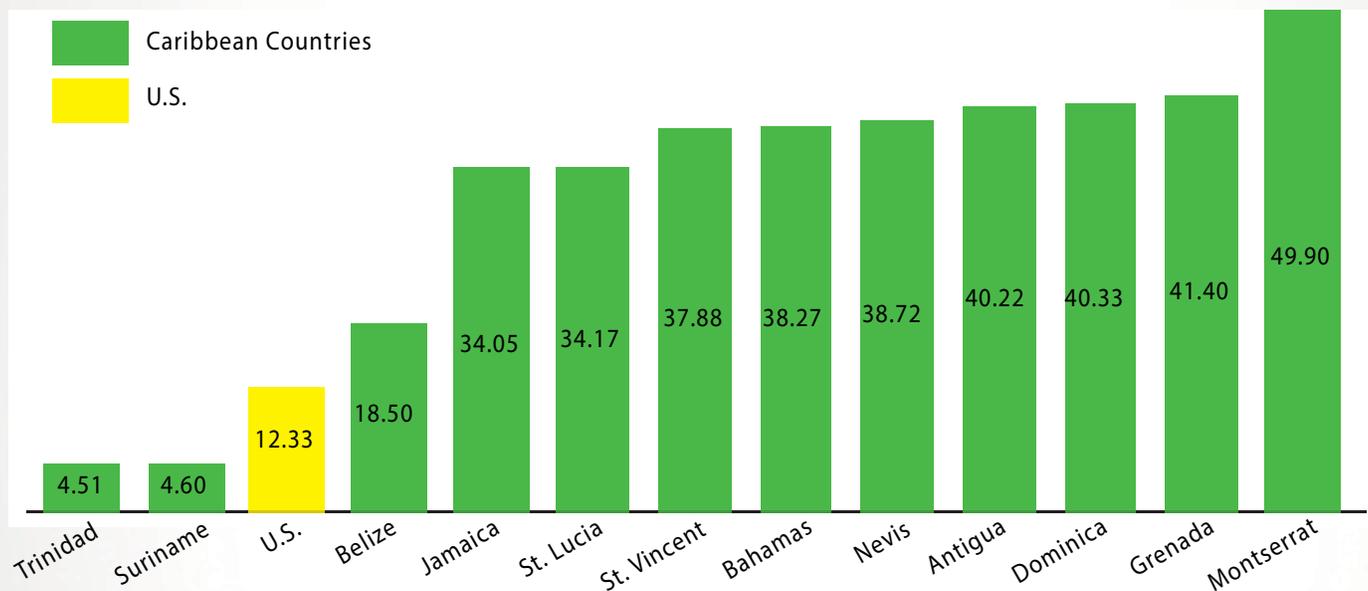
Although the Caribbean has a vibrant entrepreneurial culture, many Caribbean countries suffer from an unfavorable business environment and a lack of innovation. For example, according

to the World Bank report *Latin American Entrepreneurs: Many Firms but Little Innovation*, almost 70 percent of Caribbean business owners opened a business out of fear of losing their job or because jobs were not available.¹ In addition, clean tech is a rather new concept in the entrepreneur community, and it is difficult to identify high-quality entrepreneurs with sufficient climate knowledge and business skills and to develop support programs accordingly to help them grow their green ventures.

Against this backdrop, the Climate Technology Program (CTP) of the World Bank Group's infoDev unit established the Caribbean Climate Innovation Center (CCIC) in January 2014. The CCIC's objective is to support Caribbean entrepreneurs and new ventures to develop and commercialize locally appropriate solutions to climate-related problems. This In Brief outlines the CCIC's business model and shares key lessons learned from its three years of operation.

1. Lederman, Daniel, Julián Messina, Samuel Pienknagura, and Jamele Rigolini. 2014. *Latin American Entrepreneurs: Many Firms but Little Innovation*. <https://openknowledge.worldbank.org/handle/10986/16457>.

Figure 1. Domestic Electricity Tariff (US ¢/kWh) for Selected Caribbean Countries and the U.S. In 2012



Sources: CARILEC Annual Report 2012 (<http://wrld.bg/MDmm308vEul>); U.S. EIA (<http://wrld.bg/Fwwl308vEBh>).

CCIC Phase 1. Launch and Early Implementation

The CCIC was launched in January 2014 as one of the main pillars of an umbrella World Bank program called the Entrepreneurship Program for Innovation in the Caribbean (EPIC), which aims to support the development of an enabling ecosystem to foster innovative and growth-oriented enterprises in the region. The CCIC focuses on establishing regional capacity to support clean tech start-ups and early-stage companies and on contributing to the emergence of new domestic green industries. The CCIC is one of seven Climate Innovation Centers (CICs) established by the CTP; it is also a member of the CIC Network run by the CTP to connect global resources to the CICs.

The CCIC serves all member countries of the Caribbean Community (CARICOM) except Haiti: Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago. It is managed by a consortium consisting of the Caribbean Industrial Research Institute (CARIRI) in Trinidad and Tobago and the Scientific Research Council (SRC) in Jamaica. The CCIC has also partnered with like-minded business support organizations and established a network of 13 hubs to better serve the scattered CARICOM countries.

As the only clean tech incubator in the Caribbean, the CCIC itself is like a start-up operating in an unknown environment. In its first two years of operation, the center focused on setting up its physical infrastructure and governance structure, identifying a pipeline of clean tech entrepreneurs, and developing and testing business support services for these entrepreneurs.

The CCIC centered its support efforts on the proof-of-concept (PoC) grant competition. In the first PoC competition, held shortly after the CCIC's launch, 11 entrepreneurs from seven countries out of 300 applicants were awarded grants of up to US\$50,000. The CCIC also offered a number of other services, including in-house business advisory, training on investment readiness, and networking events.

CCIC Phase 2. Enhanced Business Model and Service Offering

After a little less than two years of operation, the CCIC undertook a strategic reevaluation of its business plan to account for the three primary lessons learned operating in the region:

1. Most entrepreneurs are not aware of clean tech market problems/opportunities and think of clean tech as simple “applied science” that requires little local innovation efforts.
2. Small CARICOM countries with prominent political and socioeconomic differences are scattered across the Caribbean Sea, which makes it more difficult to develop a business support model that works for this fragmented market.
3. The clean tech ecosystem is very nascent, and most local stakeholders in this space have little experience in nurturing clean tech entrepreneurship and innovation.

A benchmarking analysis was undertaken on the CCIC in November 2015. It found that the CCIC needed to adopt a more structured approach and supplement its grant-making activities with other services, including business education, coaching, and access to professional or technical services. The CCIC intended to use the PoC grant competition as a way to source promising portfolio companies. However, the success of these activities was constrained by the general lack of clean tech entrepreneurs and the overall immaturity of the regional clean tech ecosystem. One central conclusion of the benchmarking analysis was that the CCIC needed to build the ecosystem from the bottom up by supporting entrepreneurs at much earlier business stages, such as those working on idea generation.

Following up on the recommendations of the analysis, the CCIC hired a clean tech incubation specialist from New York to strengthen its strategies and service offerings. The center has since developed a suite of service offerings that target entrepreneurs at different stages of their business journeys:

- **Idea Generation Session (IGS):** Exposes inexperienced entrepreneurs to climate-related market problems by

connecting them to market leaders and thus creating transparency around these problems.

- **Boot Camp:** An intense three-day session to help entrepreneurs turn ideas into concrete business plans. At the end of the boot camp, start-ups should have a business plan, a business model, and basic market research.
- **Accelerator:** A six-month program that offers standardized services on the development of market, product, and company infrastructure. Start-ups should be incorporated and close to having a pilot by the end of the program.



The Winning Teams of a CCIC Boot Camp Pitch Competition.
© The Caribbean Climate Innovation Center

The CCIC uses its hub-and-spoke model and partnerships to disseminate its offerings throughout the distributed CARICOM countries. The center, located in Jamaica, is responsible for designing and testing the above support programs; the 13 hub partners implement and scale these services across the Caribbean. The old PoC initiative did not provide an effective opportunity to engage country hubs, but the new programs have enabled hubs to tap into their local networks and involve ministries of governments in carrying out CCIC mandate. By December 2016, the CCIC had run seven IGSs and seven boot camps at the center in Jamaica and several hubs. In 2017, the CCIC will develop the necessary training materials to help the remaining hubs each stage a boot camp, so that each hub will have executed at least one boot camp by September 2017.

The accelerator program was launched in June 2016. Three companies have been accepted, and a second cohort is being selected.

See [figure 2](#) to learn more about the phase 1 and phase 2 of the CCIC.

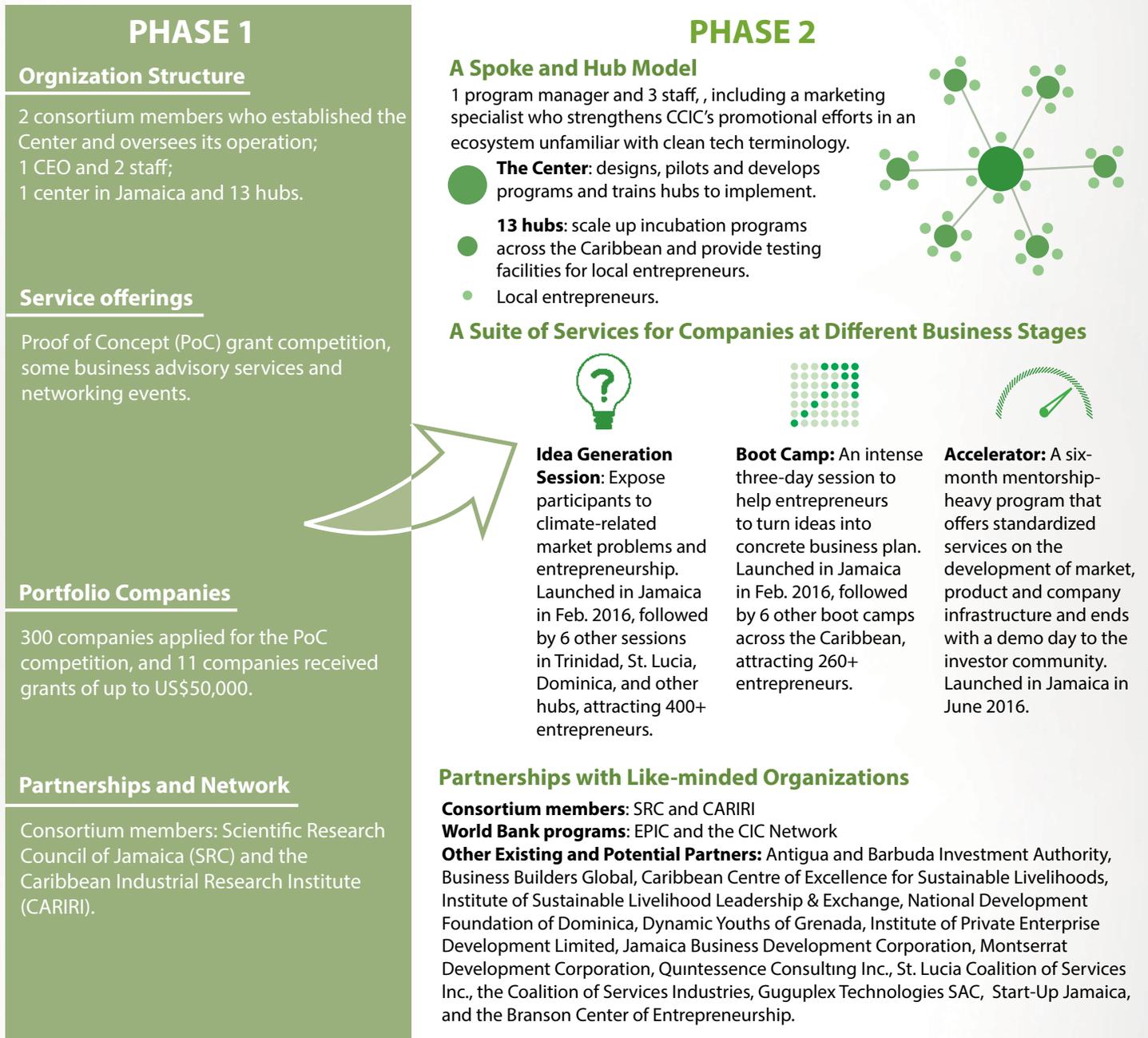
How to Run an Idea Generation Session for Climate-related Opportunities

The CCIC has learned many important lessons from its three years of operation. This In Brief focuses on the Idea Generation Session program because the program responds to a typical awareness problem common in nascent or emerging clean tech innovation ecosystems across the developing world.

Climate change undoubtedly threatens all the Caribbean countries, but do entrepreneurs know enough about climate-related problems to develop local solutions that effectively address these issues and, at the same time, make business sense? Unfortunately, there are few ways for Caribbean entrepreneurs to connect with experts and learn about local climate-related market problems. Prior to the launch of the CCIC, the CTP conducted a survey with over 150 clean technology stakeholders throughout the region to identify the gaps in the ecosystem. More than 85 percent of respondents considered a lack of regional information for designing clean tech products and services a major hurdle that hinders climate and clean energy innovation (with about 30 percent strongly agreeing).

The CCIC fills this awareness gap by running IGSs. Idea generation sessions are a tool incubators and other business support organizations use to prepare potential entrepreneurs. Entrepreneurs sometimes do not fully understand the significant hurdles of launching a new company: market research, product development, fund-raising, and knowing how to effectively create a company. Clean tech entrepreneurs often face additional challenges, such as a general lack of knowledge regarding current and actionable market problems, difficulty in accessing customers, and limited access to hardware support such as testing, prototyping, and manufacturing.

Figure 2. Phase 1 and Phase 2 of the CCIC



The CCIC designed the IGS program to help entrepreneurs identify environmental problems and brainstorm effective start-up ideas to address them. This is done via a panel with market experts who discuss actionable problems in their respective fields and a follow-on session on business ideation and brainstorming. See **figure 3** for details of how the IGS works.

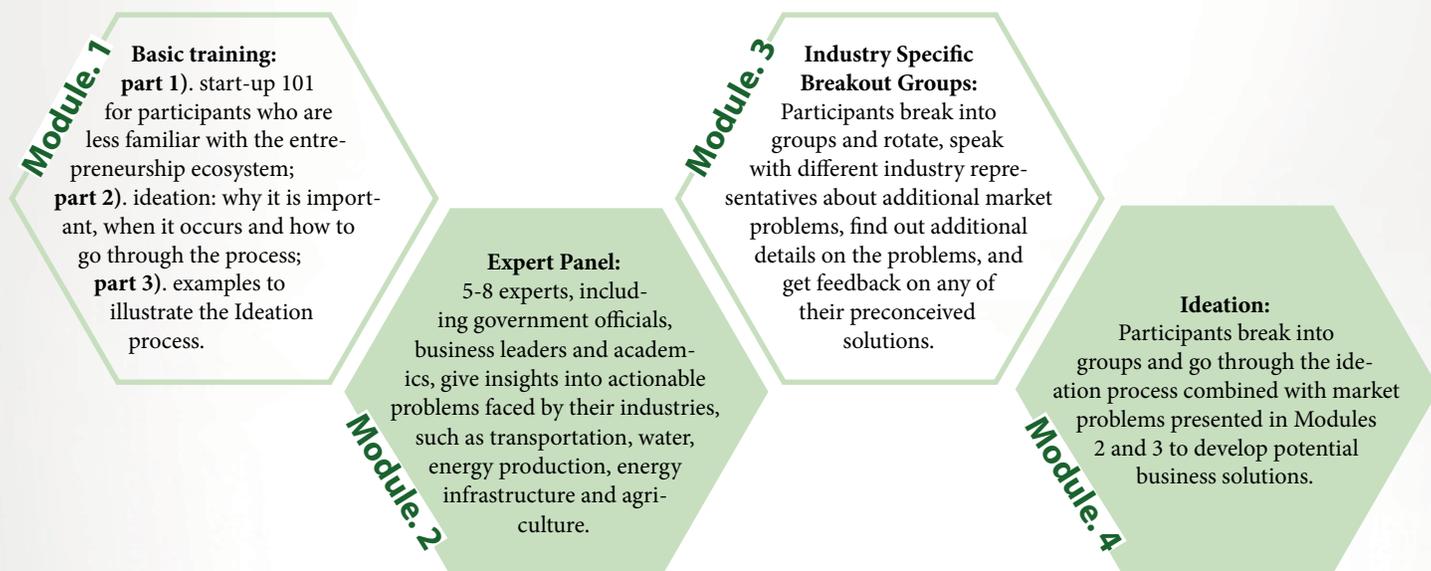
For the IGS held in Trinidad and Tobago, the CCIC invited the country's water authorities, and the government officials informed the entrepreneurs of the water consumption issues the country currently faces. The cost of pumping water in Trinidad is so low that people have been using water frivolously. However, as the aquifers become empty and the price of electricity rises, the cost of water will skyrocket. The current water consumption pattern will not be sustainable in the long term.

The government representatives believe there are at least two key aspects that need to be addressed to solve the

water shortage problem: (1) incentives for people to stop wasting water, and (2) development of new technologies to produce water for households, such as desalination. After careful discussion with the experts, participants came up with some promising solutions. For example, one group decided to develop a gauge device that tracks water usage from households, which could be used by the water company to enable communication between utilities and customers and create incentives for people to save water.

The CCIC had run seven IGSs by December 2016 and attracted more than 400 participants, including university students and graduates, young professionals, first-time entrepreneurs, and experienced entrepreneurs. Both experienced and inexperienced entrepreneurs found the IGSs very useful. They left the sessions with a much deeper understanding of climate problems and potential business solutions to address them.

Figure 3. How the Idea Generation Session Works



Lessons Learned: Seeding Climate Opportunities for Entrepreneurs in Nascent Ecosystems

The CCIC is the first CIC under the CTP to include an idea generation program in its service offerings. The IGS has helped the CCIC to promote its brand; build its network of mentors, coaches, corporate partners, and market leaders; and identify existing and future entrepreneurs. At the same time, both the center and the CTP have learned a lot from designing, testing, and scaling up the IGS.

1. Understand Private Sector's Grasp of Climate-related Business Opportunities

During the phase 1 period, the CCIC underestimated the immaturity of the Caribbean clean tech market and focused on the PoC grant competition to source promising entrepreneurs. The PoC model has worked well, and it attracted some good-quality start-ups in the Kenya Climate Innovation Center. However, the Caribbean has a vastly different ecosystem than Kenya: clean tech remains a novel concept, and there are many fewer entrepreneurs here who are interested and familiar with clean tech sectors to begin with. The IGS effectively fills in the gap by sowing the seed and preparing the first generation of clean tech entrepreneurs in the region.

2. Start from Step One in a Nascent Climate Innovation Ecosystem

Similar to the initially PoC-focused CCIC, other incubation centers in the region have tried starting with later stage companies and run into similar challenges. In a nascent clean tech innovation environment like the Caribbean, it is necessary for the CCIC to build the ecosystem from the bottom up: start with a large pool of potential entrepreneurs via an IGS and select more sophisticated entrepreneurs to move on to a series of increasingly competitive programs—that is, boot camp, accelerator, and incubator. Through the series of programs, the CCIC aims to generate enough attention from other players interested in clean tech innovation to collectively build up a green innovation ecosystem. However, it takes

time to nurture clean tech industries from the ground up. Support organizations need to have patience and realistic expectations: most CCIC boot camp entrepreneurs will not be ready for the accelerator program over night.

3. Adapt Global Best Practices to Seed Ideas to Climate Sectors

To address the various issues identified in the ecosystem, there is no need for the CCIC or other incubator programs to reinvent the wheel. They have a wide pool of global best practices to draw upon. For instance, the idea generation session was inspired by the XPrize Foundation's incentivized competitions, which challenge teams from all over the world to develop solutions to market failures across a wide range of sectors, with the top teams winning a grand prize. The CCIC adopted this concept, adjusted the model to fit the Caribbean context, and developed the IGS.

Climate Technology Program

In Brief

About Us

The Climate Technology Program (CTP) In Brief series is a publication of the World Bank Group's Trade and Competitiveness (T&C) Global Practice and infoDev. infoDev's CTP is managed by the Innovation and Entrepreneurship Unit of T&C.

CTP focuses on the growing opportunities of the clean technology sector in developing countries. Through a global network of seven Climate Innovation Centers, the program provides local entrepreneurs with the knowledge and resources they need to launch and scale their innovative business solutions to climate change. CTP In Brief is a series of knowledge briefs highlighting important aspects of the CTP global and in-country operations and research.

Learn more at www.infoDev.org/climate.

Acknowledgements

This brief was prepared by Xue Zheng with contributions from Jonathan Coony, Michael Lightman, Diletta Doretta, and Elaine Tinsley.

More on the CCIC's programs and results can be found at www.caribbeanccic.org or www.infodev.org/climate.

© 2017 The World Bank Group

1818 H Street NW

Washington, DC 20433

Website: www.infodev.org

Email: info@infodev.org

Twitter: [@infoDev](https://twitter.com/infoDev)

Facebook: [/infoDevWBG](https://facebook.com/infoDevWBG)



Australian Government

MINISTRY OF FOREIGN AFFAIRS OF DENMARK
DANIDA INTERNATIONAL
DEVELOPMENT COOPERATION



Norad



Ministry of Foreign Affairs of the
Netherlands

Canada