

Document of
The World Bank
FOR OFFICIAL USE ONLY

Report No: ICR00005510

IMPLEMENTATION COMPLETION AND RESULTS REPORT

TF0A9280 and TF0A1407

ON A

SMALL GRANT

IN THE AMOUNT OF USD **4.6** MILLION

TO THE

Socialist Republic of Vietnam

FOR

Vietnam Climate Innovation Center (VCIC) RETF (P155260)

May 26, 2021

Finance, Competitiveness And Innovation Global Practice
East Asia And Pacific Region

Regional Vice President: Victoria Kwakwa

Country Director: Carolyn Turk

Regional Director: Hassan Zaman

Practice Manager: Zafer Mustafaoglu

Task Team Leader(s): Brian G. Mtonya, Lien Anh Pham

ICR Main Contributor: Elaine Tinsley

ABBREVIATIONS AND ACRONYMS

CC	Climate Change
CIC	Climate Innovation Centers
CO2	Carbon Dioxide
COVID-19	Coronavirus Disease 2019
CTP	Climate Technology Program
DFAT	Australian Department of Foreign Affairs and Trade
DFID	United Kingdom's Department for International Development
EMIC	Effective micro-organisms
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GoV	The Government of Vietnam
ISR	Implementation Supervision Report
IT	Information and Technology
KPI	Key Performance Indicator
M&E	Monitoring and Evaluation
MoF	Ministry of Finance
MoST	Ministry of Science and Technology
MWh	Mega Watt hour
NATEC	National Agency for Technology Entrepreneurship and Commercialization Development
PMU	VCIC Project Management Unit
PPD	Public-Private Dialogue
PPP	Public-Private Partnership
PoC	Proof of Concept
R&D	Research and Development
S&T	Science and Technology Organization
SC	Steering Committee
SME	Small and medium-sized enterprises
UK	United Kingdom
USD	United States Dollar
VCIC	Vietnam Climate Innovation Center
VN	Vietnam
WB	The World Bank

TABLE OF CONTENTS

DATA SHEET	ERROR! BOOKMARK NOT DEFINED.
I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES.....	4
II. OUTCOME	7
III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME.....	18
IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME ..	19
V. LESSONS LEARNED AND RECOMMENDATIONS.....	20
ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS.....	23
ANNEX 2. PROJECT COST BY COMPONENT	32
ANNEX 3. RECIPIENT, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS.....	33
ANNEX 4. SUPPORTING DOCUMENTS (IF ANY)	37



DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P155260	Vietnam Climate Innovation Center (VCIC) RETF
Country	Financing Instrument
Vietnam	Investment Project Financing
Original EA Category	Revised EA Category
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
Socialist Republic of Vietnam	Ministry of Science and Technology (MOST)

Project Development Objective (PDO)

Original PDO

The project's objective is to increase green growth business innovations by supporting entrepreneurs and SMEs involved in technological solutions through the establishment and operation of the Vietnam Climate Innovation Center



FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
Donor Financing			
TF-A1407	3,800,000	3,778,376	3,778,376
TF-A9280	800,000	576,393	576,393
Total	4,600,000	4,354,769	4,354,769
Other Financing			
Borrowing Agency	380,000	0	0
Total	380,000	0	0
Total Project Cost	4,980,000	4,354,769	4,354,769

KEY DATES

Approval	Effectiveness	Original Closing	Actual Closing
30-Oct-2015	15-Dec-2015	30-Jun-2020	31-Aug-2020

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
05-Jun-2018	1.69	Change in Loan Closing Date(s)
28-Dec-2018	2.26	Additional Financing Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s) Change in Procurement Change in Implementation Schedule
29-Jun-2020	3.47	Change in Loan Closing Date(s)

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Satisfactory	Satisfactory	Substantial

**RATINGS OF PROJECT PERFORMANCE IN ISRs**

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	14-Feb-2017	Moderately Satisfactory	Moderately Satisfactory	0.80
02	06-Sep-2017	Moderately Satisfactory	Moderately Satisfactory	1.13
03	27-Mar-2018	Moderately Satisfactory	Moderately Satisfactory	1.69
04	10-Sep-2018	Moderately Satisfactory	Moderately Satisfactory	2.02
05	27-Dec-2018	Moderately Satisfactory	Moderately Satisfactory	2.26
06	24-Jul-2019	Moderately Satisfactory	Moderately Satisfactory	2.70
07	07-Apr-2020	Moderately Satisfactory	Moderately Satisfactory	3.47

ADM STAFF

Role	At Approval	At ICR
Regional Vice President:	Axel van Trotsenburg	Victoria Kwakwa
Country Director:	Victoria Kwakwa	Carolyn Turk
Director:	Anabel Gonzalez	Hassan Zaman
Practice Manager:	Ganesh Rasagam	Zafer Mustafaoglu
Task Team Leader(s):	Jana Malinska	Diletta Doretti, Brian G. Mtonya, Lien Anh Pham
ICR Contributing Author:		Elaine A. Tinsley



I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. Context

At the time of appraisal, Vietnam was a rapidly growing economy, with high rates of population growth and urbanization. In the prior decade, Vietnam had achieved an annual growth rate of over 7 percent. Its energy demand had been growing concurrently and was expected to at least triple by 2030 relative to 2010. The economic and energy demand growth had resulted in commensurate growth in greenhouse (GHG) emissions. From 1990 to 2007, GHG emissions per capita rose from 0.3 to 1.2 tons of CO₂ with a relatively high emission intensity of 4.48 tons of CO₂e per US\$1 million of Gross Domestic Product (GDP). Vietnam also had large and increasing exposure to the onset of climate change impacts, namely heat extremes, sea level rises, tropical cyclones and salt-water intrusion. These factors were expected to adversely impact several sectors, ultimately undermining livelihoods.

Finding local solutions to climate change problems, as well as increased deployment of clean energy and improved energy efficiency, was considered essential to ensure sustainable growth and improved competitiveness. In addition to reducing GHG and increasing climate resilience, such innovative climate-smart solutions would also enhance resource efficiency, resilience and poor and vulnerable communities' access to core services in Vietnam.

Vietnam – with a dynamic and entrepreneurial labor force, stable supply of mechanical and engineering skills and low labor costs—was well-positioned to address these challenges. The country had embarked on policies to support entrepreneurship through its national innovation policy development as well as establishment of clusters and incubators. Small- and medium-sized enterprises (SMEs) were increasingly seen as an important source of innovative capacity and green job creation in Vietnam.

On the climate policy front, the Government of Vietnam (GOV) had also actively issued several policy frameworks (strategies, action plans and national programs) related to climate change and green growth. These policy frameworks aimed to reduce the intensity of GHG emissions by 8-10 percent to 2020 relative to 2010 and energy consumption per unit of GDP by 1-1.5 percent per annum over the same time period. It also aimed to reduce annual GHG emissions by at least 1.5-2 percent by 2050. Moreover, it foresaw greener production by ensuring green industry development based on environmentally friendly technologies and equipment. It also set out key targets for green production, including application of clean technologies, to reach 50 percent of total enterprises. The green growth domestic policy framework indicated that the country was strongly committed to the agenda and serious about cutting carbon intensity, exploiting energy efficiency opportunities and building greater climate resilience into development planning.

Several GOV organizations and business associations, including the Ministry of Planning and Investment's Department of Enterprise Development and Vietnam Chamber of Commerce and Industry (VCCI), were mandated to support enterprise development with innovation as a key focus. The National Agency for Technology Entrepreneurship and Commercialization (NATEC), under the Ministry of Science and Technology (MOST), was established in 2011 to specially focus on technology market development and support the formation and development of Science and Technology (S&T) businesses in the country.

To support investment in S&T development from incubation to commercialization of products, numerous state-managed funds had been established such as the Small and Medium Enterprise Development Fund, National



Foundation for Science and Technology Development, Science and Technology Development Fund and the National Technology Innovation Fund. These funds provided preferential loans, credit guarantees, interest and capital support to organizations, individuals and businesses to conduct research, transfers, innovation and improvements to S&T products. However, direct government support to promote private sector development in innovation was limited at that time.

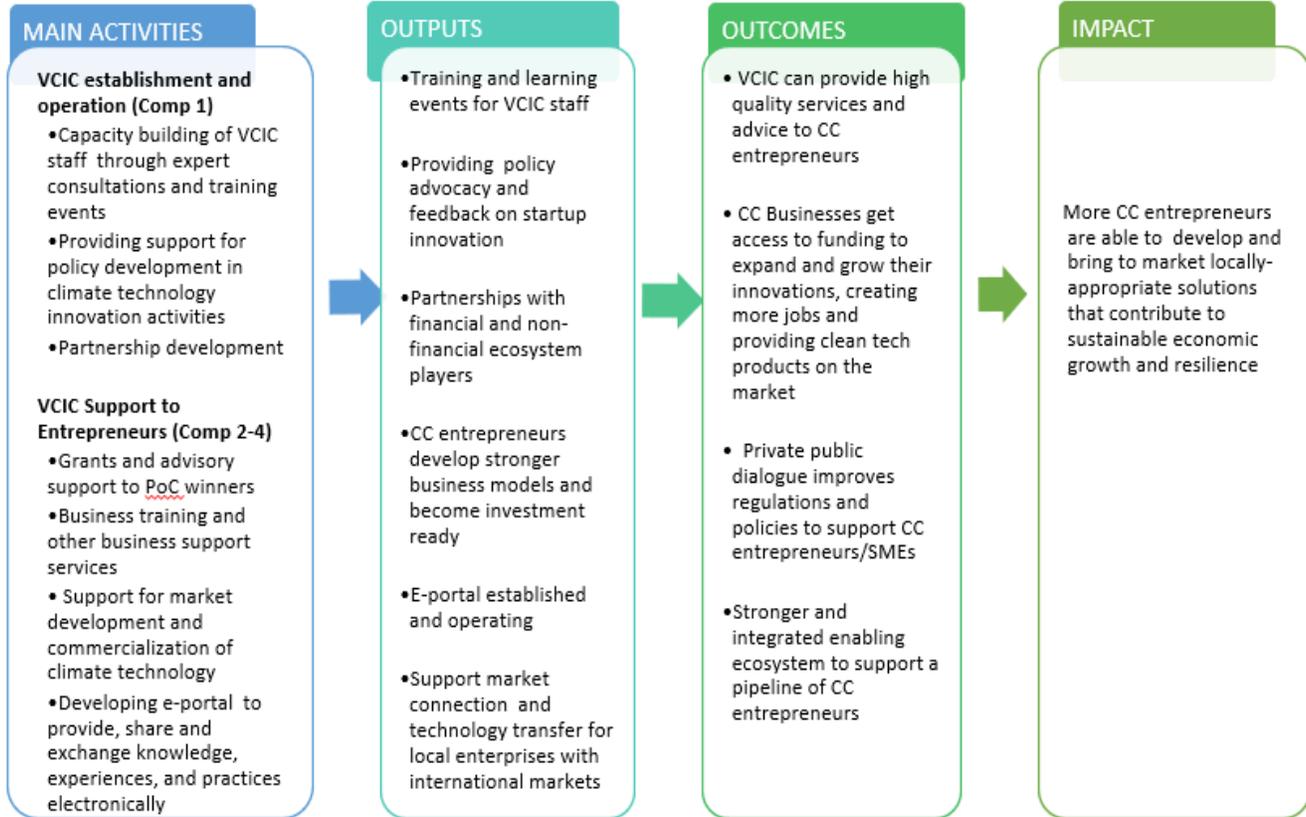
To address this gap, the project envisioned the establishment of the Vietnam Climate Innovation Center (VCIC) to primarily focus on direct support to entrepreneurs and SMEs in innovation and technology adaptation across two climate technology sectors: energy efficiency and renewable energy at the pilot stage, and later, sustainable agriculture, transportation, water management and purification.

The VCIC was to become one of the seven centers of the Climate Technology Program's Global Network, established by World Bank InfoDEV. The network amplifies the reach and scope of each center by providing a platform to share knowledge and data, create international business-to-business linkages, and facilitate trade across regions. By combining locally tailored services with access to international partners and global expertise, the VCIC would help innovative Vietnamese enterprises become more competitive in both local and international markets.

The Australian Government (DFAT) and the UK Department for International Development (DFID) are the project donors contributing to the VCIC. The project was implemented by Vietnam's Ministry of Science and Technology (MOST) through its National Agency for Technology Entrepreneurship and Commercialization (NATEC) which oversaw the VCIC Project Management Unit. The US\$3.8 million project was approved on October 31, 2015 and became effective in December 2015.

B. Theory of Change

The Theory of Change was that by establishing and building the capacity of the VCIC, the VCIC would develop a strong program of support to clean tech entrepreneurs and enterprises, including grants, business acceleration advice, access to finance, market growth and access, networking and mentoring. This would enable the entrepreneurs to thrive and develop more viable, scalable clean tech businesses that would provide locally produced solutions to address key climate change challenges in the different sectors of the economy. The development and commercialization of these innovations would lead to more climate resilient economic growth and job creation.



C. Project Development Objectives (PDOs)

The project's objective is to increase green growth business innovations by supporting entrepreneurs and SMEs involved in technological solutions through the establishment and operation of the Vietnam Climate Innovation Center.

D. Key Expected Outcomes and Outcome Indicators

The key expected outcome of the project was the development of the Vietnam Climate Innovation Center to provide financial and non-financial support to help innovative climate change entrepreneurs and SMEs grow their ideas and businesses.

PDO level results indicators

- Number of businesses that raised early stage finance
- Number of businesses who registered their prototype with Intellectual Property (IP) office

E. Components

The project had three components originally, and a fourth component was added in the December 2018 restructuring.



Component 1. Establishment and operation of VCIC, policy feedback: Administrative activities to establish VCIC; support policy improvement and public-private partnership in the climate change innovation field; and establish a fund for incubation and commercialization of technologies in response to climate change.

Component 2. Climate technology business incubation services, including grants to companies: Organize startup proof of concept (PoC) competitions, support for clean tech start-up ideation (idea incubation and competition); business incubation services including training, mentorship, connectivity and boosting investment; and supporting commercialization.

Component 3. E-portal, database and services to support business: Create the VCIC E-portal; set up database on technology, market opportunities, enterprises, climate change-related experts; and disseminate, exploit and use this database.

Component 4. Market connection and technology transfer: Facilitate the diffusion of climate technology by broadening VCIC's offerings to include global business partnership services, especially partnerships between foreign climate technology suppliers and local firms which can diffuse these technologies in Vietnam; and between local climate technology suppliers and foreign firms which can facilitate their entry into new markets.

F. Changes to the Project

Restructurings. There were three restructurings to the project. The first was in June 2018 for a 6-month no cost extension from June 30, 2018 to December 31, 2018, in order to offset the initial delays in the project and to provide time to process an additional financing request. The second restructuring was in December 2018, the project was restructured for additional financing of US\$800,000 contributed by DFAT, to cover the following activities: i) continue building VCIC staff capacity, ii) implement a new gender activities in line with the Gender Action Plan (including a new round of POC focused on gender), and iii) implement new activities on technology transfer and diffusion. Given the additional activities and budget, the project requested an 18-month extension from December 31, 2018 to June 30, 2020. The project was restructured for a third time in June 2020. Due to the COVID-19 situation and ensuing delays and slowdowns, the government asked for a no-cost two-month extension to August 30, 2020, to enable the project to complete the remaining activities, including the PoC sub-projects to companies, implementation of the added Component 4-Market Connect and Technology Transfer, and transition of VCIC into an autonomous entity.

There were no changes to the PDO.

II. OUTCOME

Assessment of Achievement of Each Objective/Outcome



Two months after project approval, the VCIC was officially launched at a high-level event in Hanoi, on December 11, 2015. Within a few months, it had hired most of its key staff and launched its first Proof of Concept competition in June 2016. Since then, the VCIC has met or exceeded almost all its targets (Table 1), including support to over 48 Proof of Concept (PoC) businesses. Its businesses have raised over US\$1.7 million in early stage finance; US\$1.9 million in growth stage financing; 15 enterprises have filed for 19 intellectual property rights for their products or services; nearly 200,000 households have benefited from the new products and services and an estimated 44,216 MT of CO2 emissions have been prevented.

Table 1. Summary of Key Impact Indicators and Outcomes

PDO Indicators	Baseline	End Target	Actual (as of August 2020)	Percent Achieved
Number of businesses that raised early stage finance	0	35	34	97%
Number of businesses who registered their prototype with Intellectual Property (IP) office	0	12	15	158%
Intermediate Results Indicators				
Number of businesses/entrepreneurs having access to technical facilities	0	30	115	383%
Number of partnerships with non-financial services providers	0	25	43	172%
CO2 emissions avoided (metric tons)	0	45,000	44,216	98%
Number of households with access to new/improved products/services	0	180,000	184,342	102%
Amount of grant funding received by businesses		1,650,000	1,631,122	9999%
Amount of early stage finance raised by businesses	0	1,600,000	1,717,004	107%
Amount of growth stage finance raised by businesses	0	800,000	1,891,345	236%
Number of new direct jobs created	0	850	1,141	134%
Number of Public Private Dialogue (PPD) sessions	0	8	4	50%
Number of workshops, training events, seminars, conferences, etc.	0	32	42	131%
Number of participants in workshops, training events, seminars, conferences, etc.	0	1750	2604	149%
Number of knowledge products developed	0	20	68	340%
Number of business leaders participating in international markets/technology transfer activities	0	80	87	109%

The achievement of the project objectives can be assessed through two lenses. First, is the development and operation of the VCIC itself and how it has progressed over time in terms of its service offerings and institutional



growth. Second, is through an assessment of how effective its service offerings have been in terms of growing climate change (CC) businesses. This latter part is examined in terms of progress of its clients, particularly the POC participants and their satisfaction with the services provided.

A. VCIC Establishment and Operation

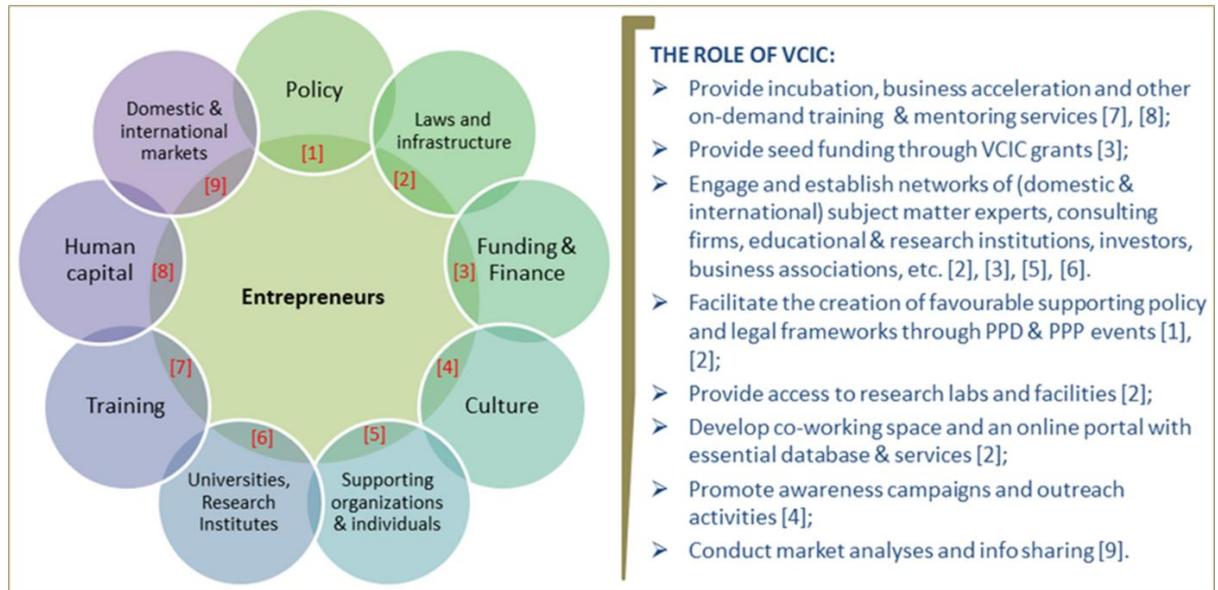
This section assesses how well VCIC was able to achieve the establishment and purpose of the VCIC. The World Bank CTP program did not prescribe how a CIC should be structured, rather it allowed for customizations and adaptations to local situations. It was expected that the CIC's would adapt their business models as needed, based on the lessons learned during implementation. Regardless of how a CIC was structured, there were still key outcomes that the CIC was expected to achieve, these included: 1) develop appropriate service offerings to the CC entrepreneurs to help them develop and grow their business, 2) create a more enabling ecosystem environment through partnerships with other ecosystem players, dialogue and advocacy to government counterparts, and 3) create a well-functioning entity with appropriate staffing, strategic leadership, and move the CIC toward sustainability. This section examines how well the VCIC achieved these three outcomes.

A.1 VCIC Service Offerings

The VCIC provided comprehensive support (Component 2) to climate change entrepreneurs across an array of sectors including sustainable agriculture, water management and filtration, renewable energy and energy efficiency, and IT related to climate change. The VCIC anchor program offering was its Proof of Concept (PoC) Competitions, which was the main intake for identifying enterprises to support. Once selected, POC companies were supported with a suite of customized support including business training, mentorship, technical services, and financing. Figure 1 summarizes the key tasks the VCIC undertook to support their climate change entrepreneurs and SMEs. Overall, the services were highly regarded and appreciated by the enterprises and often led to significant increases in revenues (see Section B for more details). During the project period, three cohorts were launched in June 2016, May 2017 and January 2019, and served 48 enterprises with extensive support and grants.



Figure 1. VCIC Service Offerings to Climate Change Entrepreneurs and SMEs



Source: VCIC Final Evaluation Report, 2020

VCIC’s incubation model shifted to incorporating a pre-incubation stage to help improve the entrepreneurial pipeline and quality. Reflecting on the experiences with the first cohort, and following a December 2016 business strategy workshop, VCIC shifted its business model. While in the first cohort, it had focused on incubation and commercialization, an earlier stage approach was deemed necessary and VCIC decided to also provide pre-incubation services. The pre-incubation approach would help VCIC attract a larger set of companies and explore the best ways to support them, as well as identify enterprises that were better suited for the program. Based on performance metrics during pre-incubation, the VCIC would then select a subset of these companies to receive grant funding and enter the POC program. The pre-incubation program built a curriculum of services on top of the usual PoC grants and contributed to helping build VCIC’s brand as the leading clean-tech business advisory organization in Vietnam. It was expected that an expanded suite of services could help pave the way for additional revenue streams and contribute to the Center’s long-term viability. With pre-incubation services, VCIC provided services to 115 firms, including the 31 that eventually entered the POC2 and POC3 program.

The experiences from PoC1 and PoC2 also 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.

The project supported the development of an e-portal (Component 3), which helped institutionalize internal processes but had more limited external interaction. The e-portal was designed with 17 modules, serving various needs of VCIC staff and clients. Procurement delays led to a late start in the development and completion of the



e-portal. In addition, as this was a new area for the VCIC, there was a learning curve in understanding what was the needed technical specification for the various modules. Of the 17 modules developed, 9 are actively used (website management, e-event, e-survey, video conference, project management, VCIC job management, call center, cloud storage, and technology exchange), and the remaining 8 modules (social network, e-office, e-learning, biz tools, administrator, text management, service administration authentication, and human resources) are relatively inactive.

The modules geared to VCIC staff have been used and are helping to institutionalize operations (e.g. portal for the management of the PoC3 competition) and provide continuity in client support, the modules geared toward the clients have been less utilized and there is little awareness about them. The potential for the portal is high, particularly the online training courses and technology database, as once active, they can provide a revenue stream for the VCIC. However, there is a risk that with limited funding for new cohorts and outreach activities there will be less momentum behind the use and maintenance of these services.

Market Connect and Technology Transfer (Component 4) had the misfortune of getting underway at the onset of COVID-19, however with pivoting, gains were achieved in making connections. Component 4 was added in the second restructuring and was designed to respond to growing VCIC client needs to build global partnerships for technology transfer into Vietnam as well as expanding client's wishes to expand their markets outside Vietnam. Although the component had 20 months to be implemented, delays in procurement meant the contract for delivery was only signed in the last six months of the project, narrowing the timeline for delivery. This delay, coupled with the onset of COVID-19, limited activities and impact. A key aspect of the Market Connect component was to connect VCIC enterprises with foreign markets through planned trips to Australia and South Korea. Although this was canceled due to COVID-19, the program shifted to online activities and domestic interaction, including two well-attended VCIC Connect events held in person in Vietnam. There were 87 (over the 80 target) business leaders participating in these events. The e-portal was also used to receive nearly 100 applications from Vietnamese firms seeking connections with Australian and Korean companies, and of these 10 connections (5 for Vietnamese exports and 5 for inbound technology transfers) were made between Australian and Korean companies and universities and Vietnamese firms.

A.2. VCIC Ecosystem Building and Government Engagement

The VCIC built partnerships with a large variety of green growth ecosystem players, both domestic and international. The VCIC developed over 43 non-financial partnerships, in excess of the targeted 25, including with business associations, media companies, universities and corporates. Its international partnerships were also extensive, including with India, Taiwan, Australia, Netherlands, Denmark, and Korea. These partnerships help VCIC strengthen its outreach, technical support and training to its entrepreneurs, beyond what it could provide in-house.

The VCIC also made strides in influencing and guiding public policy on the innovation ecosystem. The positioning of the VCIC within a government agency may have helped facilitate connections within the government and encourage the dialogue between them and the private green sector. Through its consultation workshops and policy dialogues, VCIC was also effective in connecting with central and local government, governmental departments, donors, and private sector players. These consultations helped raise VCIC's profile and credibility



and led to the VCIC contributing to helping draft public policy, most notably the draft decree on Investment for Innovative Start-ups. VCIC contributed to drafting the new Law on Supporting SMEs. Although VCIC only undertook 4 public policy dialogues (out of 8 targeted), it has advanced more in terms of directly influencing policy compared to other CICs in the network.

Additionally, VCIC was able to leverage government ties to support firms in their portfolio. VCIC helped several of its enterprises (e.g. MITECOM, Bio Phuong Nam, Lam An, and VES Solar Box) secure follow-on funding from government programs. For example, MITECOM, which developed cultures of effective microorganisms that speeds the composting process and creates an organic fertilizer byproduct, received a US\$170,000 grant from the GoV to expand its reach to farmers across the country by installing the fermentation and effective microorganisms multiplication equipment in new locations. Since joining the VCIC, MITECOM's revenues increased by 800 percent and they have expanded sales to all 63 provinces. VCIC enterprises also greatly benefitted from the ties MoST had with corporate investors, both domestic and international.

VCIC outreach activities and campaigns have helped raise the profile of the green economy. During the project, VCIC held over 19 knowledge sharing events, developed over 80 knowledge products, and undertook over 640 media appearances—well exceeding original targets. Outreach activities and partnerships also increased the number of applications into the PoC competition from 328 in PoC2 to 700 in PoC3. Building the capacity of the VCIC and its entrepreneurs also had an impact on raising the capacity level of partner institutions. Partner associations such as the SME Association and the Vietnam Women's Association, noted that VCIC services were highly relevant to also building the capacity of their staff to support their members with their entrepreneurial activities.

A.3 Internal Operations and Sustainability

Throughout the project, the VCIC experienced staffing issues, including high staff turnover and delayed recruitment of key leadership positions. VCIC staff were competitively recruited from the private sector, this allowed for a high degree of business skills and ability to provide good guidance to the entrepreneurs. The VCIC, however, operated in rather bureaucratic manner that was not conducive for an agency with a strong private sector interface, causing frustration among staff and contributing to turnover. More specifically, the causes listed for the high staff turnover included, administrative delays in contract renewals, reimbursements and other approvals, high vacancy levels and heavy workloads, lengthy and burdensome parallel reporting requirements to various entities (WB, MoST, MoF, and the State Bank of Vietnam), and poor teamwork coordination. These factors contributed to significant VCIC staff turnover that at times affected PoC firms negatively. On the survey of the POC enterprises, there was mixed review on their satisfaction with VCIC staff, while some were well paired with an experienced advisor, others had advisors that changed on them resulting in delays in implementation and dissatisfaction. However, even with the high turnover of staff, enterprises overall did very well, and this is a testament of the high caliber of the staff hired.

VCIC staff received capacity building from international advisors and through peer learning opportunities with other CICs. Despite the high turnover, staff showed sufficient capability to support business development services related to incubation, commercialization and investment connections for the POC. The VCIC staff did benefit from



training and coaching sessions conducted by several international advisors, including Conoscope and T&C Capacity Building Consulting Partnership from the Federal Republic of Germany, PUM from the Netherlands, and IC2 Institute of the University of Texas. International exposure also helped change the way enterprises were trained, for example instead of top-down lecturing style, international advisors introduced a more interactive exchange allowing the students to talk, which led to more productive engagements. VCIC staff also participated in several international trips (Washington DC, Kenya and South Africa) with the CIC Network that helped exposed them to challenges and resolutions that other CICs were facing. They learned about incubation practices, financial management, and ecosystem development while sharing their experiences with other countries, as well as participating in monthly webinars on select topics of interest, such as results measurement and donor reporting, exit strategy and enterprise graduation, and others.

Though it has received MoST approval in principle, VCIC is still waiting to become an autonomous entity capable of receiving donor funds. NATEC has submitted a proposal for VCIC to be established as a Science and Technology (S&T) enterprise, or an income generating administration unit under NATEC. As an S&T enterprise, VCIC will be able to receive donor funding, control in streamlining its operations-- particularly those issues mentioned above that led to high staff turnover, respond more readily to opening market conditions and opportunities, but still have the benefit of access to public resources, coordination and cooperation with MoST and other government entities. Recent changes in the top leadership of MoST have contributed to transitional delays in the final decision, however, even several months after project closing, this has still not been enacted.

Despite its achievements, the sustainability of VCIC is at high risk as revenue raising mechanisms were planned but not activated. Although not part of the results matrix or PDO, sustainability was raised in the original project paper, but was left to the CIC to determine their best mode, including private-public partnerships, becoming a legal entity, and/or offering fee-based services. VCIC has not established more stable multiple revenue streams or attracted large donor funds as other CICs have done. In its sustainability strategy, VCIC was looking at several income generating streams including technology transfer matchmaking fees, commissions off successful investments or loan transactions, online courses, access to the technology and IP databases in the e-portal. The latter portions of the e-portal, market connect and technology transfer, were a key part of VCIC's sustainability strategy, but have not generated income yet. And although VCIC enterprises have stated they are willing to pay for services, this also has not happened, and at any rate, would likely contribute to just a limited share of overall operating costs. To its credit, VCIC has started to build income generating contracts, it currently has a service contract with an international firm for consultancy service, and this will provide some interim funding relief for the VCIC. Sustainability is also at risk as VCIC no longer is the sole player in the space, as other accelerators also serve green energy entrepreneurs, and will exert competitive pressure on VCIC who may now need to compete for both clients and donor funds.

B. VCIC Entrepreneur Services

The project is also assessed based on the change in growth and performance of the entrepreneurs that have entered its program. Data on performance is based on VCIC M&E data files that were submitted quarterly to the Bank's CTP M&E team for review, end-project survey on performance and satisfaction of the POC winners.



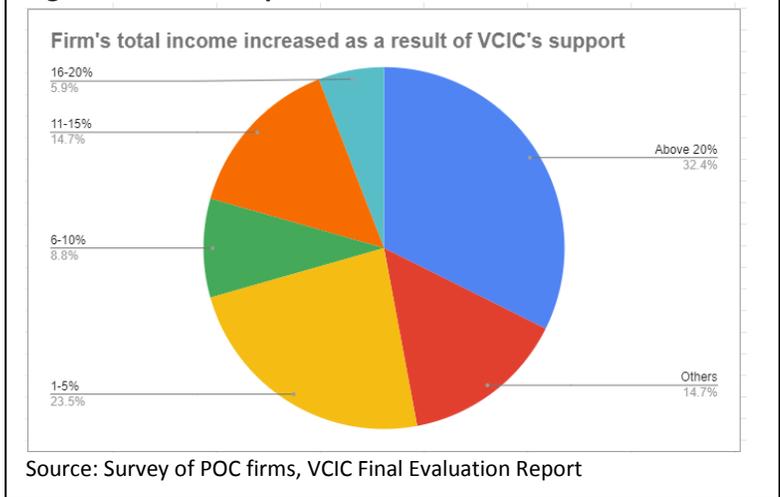
B.1. Performance of the VCIC Clients

The VCIC supported 48 POC companies, providing them with a comprehensive set of services to grow their businesses. They also provided 115 firms with pre-incubation services, including those that would move on to be part of the POC cohort. Overall VCIC POC firms met or exceeded key targets, including revenue growth, financing raised, IP registrations, new hires and reductions in CO2 emissions.

One of the strongest outcomes of the project is how well VCIC entrepreneurs have performed. Overall POC enterprises substantially improved their performance once they received support from VCIC. In total, VCIC firms generated US\$2.0 million in additional sales revenue, nearly three times the target of US\$580,000. At the firm level, a third of the POC firms reported that their incomes grew above 20 percent, and more than half of firms had revenue growth of more than 10 percent (Figure 2). For a new CIC, these are quite notable results for such a short time, particularly in the clean tech sector where market readiness and commercialization can often be a lengthy process.

In addition to sales growth, VCIC enterprises also did well in raising large amounts of both early stage and growth stage financing. Connection to MoST’s network of investors, effective fundraising pitch trainings, and public relations event organizations helped contribute to the project exceeding its targeted investment fundraising levels for enterprises. A notable 29 companies (or 60 percent of the 48 POC cohort) have raised US\$1.7 million in early stage finance, slightly above their US\$1.6 million target. Additionally, VCIC enterprises have raised US\$1.9 million in growth stage financing, and US\$667,000 in grants—for a total of US\$4.3 million in additional financing raised (Source: VCIC M&E datasheets).

Figure 2. VCIC Enterprise Income Increase



The number of businesses that registered their prototypes with the Intellectual Property (IP) office VCIC enterprises also exceeded their target. Fifteen companies (above the target of 12) have registered their product with the IP office. The VCIC has also helped firms to register their copyright in the USA and Europe, opening these potentially lucrative markets.

VCIC enterprises also exceeded their target in both direct and indirect hires. VCIC enterprises increased new hires by 1141, 34 percent higher than the project targeted 800. Of these hires, 469 (41 percent) were women. Enterprise survey results also confirm that VCIC support was instrumental in helping firms increase hiring—despite the pandemic and economic slowdown, the average number of employees from POC3 was boosted from 9.5



employees before receiving VCIC services, to 14.5 employees by August 2020, a 52 percent increase (Source: End-project survey).

VCIC supported enterprises made measurable progress in reducing CO2 emissions. Through VCIC support, enterprises have introduced innovative climate smart technologies into the economy and achieved measurable GHG mitigation and climate adaptation impacts. Although just shy of its target, VCIC firm clean tech innovations led to a reduction of 44,216 MT (98 percent of target) of CO2 emissions. For energy generation, 104,810 MWh of clean energy were produced by PoC firms, with other solar projects on the line (Source: VCIC M&E datasheets).

B.2. Entrepreneur Satisfaction with VCIC Services

Overall VCIC entrepreneurs had high levels of satisfaction and rated the VCIC well on various aspects of program offerings and delivery. As part of the project-end evaluation, an in-depth survey was undertaken of VCIC entrepreneurs, 34 of the 48 POC enterprises participated including 6 from POC1, 13 from POC2 and 15 from POC3. This section highlights some of the key findings from the survey.

Enterprises strongly attributed their success to the VCIC. A high 97 percent said VCIC helped improve their productivity. Of those, over a half claimed their productivity increased over 10 percent, and a third claimed their productivity increased over 20 percent. Additionally, 85 percent of respondents attributed VCIC support for their increase in hiring, and 82 percent said that their products or services were commercialized as a result of VCIC support. There was strong trust in the advice enterprises received from VCIC, with 91 percent of respondents recognizing that the VCIC experts convinced them to change their management process and business models. Perhaps most telling was that 97 percent said they would reapply for the VCIC program.

VCIC was also recognized as filling a niche ecosystem gap both in terms of financing, entrepreneur services, and clean tech networking. Enterprises remarked that many financial institutions would not give them credit as their projects were deemed too risky, moreover credit was more expensive and took longer than what the VCIC offered. Given the notable performance of many of the enterprises, VCIC filled a much-needed financing gap that made these successes feasible. Aside from financing, VCIC provided a comprehensive suite of services for these clean tech enterprises, as only 4 of the 34 POCs had received support from other programs besides VCIC. Most of the respondents interviewed and surveyed stated that the benefit of participating in VCIC activities (training courses, events, exhibitions, etc.) also provided opportunities to network with other entrepreneurs, access good mentors and experts, and exposed them to best practices. More specifically, they highlighted that they built relationships not only with other VCIC entrepreneurs but also with other entrepreneurs during the various VCIC program activities.



Box 1. Sample Profiles of Successful VCIC Enterprises

Microbiological Technology and Environment Joint Stock Company (MITECOM), a PoC 1 winner, developed several cultures of effective microorganisms (EMIC) that quickly break down various crop residues into organic composts (fertilizers) that can replace chemical fertilizers. The increased speed of composting using effective microorganisms benefits the farmers thorough lowering the cost of fertilizers, in addition to reducing the climate impact of chemical fertilizers. To convince farmers to switch from the chemical fertilizers they have been using for decades, MITECOM conducted demonstrations for farmer groups that handle large amounts of paddy straw, rice husks, maize husks, and other biomass to increase their confidence in the reliability of the new method and its cost effectiveness compared to chemical fertilizers. Since joining the VCIC, MITECOM's has sold over 10,000 EMIC multiplier units, revenues increased by 800 percent, sell in all 63 provinces, and reduced CO2 emissions by 15600 tons. MITECOM has also received US\$170,000 sponsorship from the Government of Vietnam to expand the use of EMIC microorganisms.

Ten Innovation Design (Ten ID) developed an innovative supply chain solution for shrimp farming in Vietnam. As part of PoC 2, they received a kick-start grant of US\$50,000 and capacity building and mentoring to drive the firm and its products toward market entry in 2019. In just a year, its Smart Pond Control System transformed from an idea on paper to receiving an investment of US\$645,000 from a private equity fund in Vietnam and a commitment of US\$350,000 from an investor to continue development and commercialization. With VCIC support, Ten ID perfected its user-friendly technology, underpinned by 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. 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.



Overall Outcome Rating

Rating is **Satisfactory**.

The project has achieved its PDO. The establishment and operation of the VCIC has been successful in terms of providing relevant and effective services to developing climate change businesses and facilitating their growth and commercialization. Through VCIC's support, its enterprises have mobilized early stage and growth stage funding of US\$3.6 million, generated additional revenue of US\$2.0 million, for a total of US\$5.6 million, or 122 percent of the \$4.6 million cost of this project. VCIC has become a recognized player in the green ecosystem space, as evidenced, by its involvement in multiple and diverse partnerships, leadership role in public-private dialogue, as well as participation in the drafting of public policy to support the innovation space. The inclusion of additional financing and the market connection component later in the project, demonstrates that the VCIC was already delivering strongly on its program to take on new and expanded activities. Against this success, however, were some shortcomings. Delays in procurement shortened the timeframe for stronger achievements, particularly for Component 4. And although not part of the results matrix, there are risks regarding sustainability of its operations post-donor funding due to the VCIC's still not yet obtaining an entity status that would allow it to fundraise for future operations. In its favor, once they attain this status, which the VCIC expects to achieve in 2Q2021, VCIC has a good track record of supporting its entrepreneurs to succeed, which should enable it to attract additional funding and/or fees for the services it provides.

Other Outcomes and Impacts

Gender Outreach. Though not part of the original project design, significant gains were made towards gender mainstreaming. The VCIC team received training to help them mainstream gender in their activities and to create a Gender Action Plan. VCIC included a gender-responsive criteria in its PoC3 competition and created a training program on women leadership for its client companies. As a result, and working in partnership with Vietnam Women's Association, the number of women-led projects in PoC3 reached 50 percent, up from 44 percent for PoC1 and PoC2. There were also significant gains in the increase of women being hired, with 41 percent of the 1141 new hires being women (Source: VCIC M&E datasheet).

The project demonstrated to the government the value of direct support to the entrepreneurs and shifted the government mindset on this point. Prior to the project, no state money could be used to directly support entrepreneurs, rather public funds for supporting innovation were primarily used for research in universities. The positive entrepreneurial outcomes created by the project provided the government evidence that this was a valid means of supporting entrepreneurs and has encouraged their support of having the VCIC become an autonomous entity capable of receiving direct funding.



III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

Restructuring shifted the goals posts for outcomes, as well as improved the VCIC’s gender approach and expanded VCIC’s service offerings. The project was restructured three times, however, the first and third were simple no-cost extensions. The second restructuring was significant and included additional financing of US\$800,000 to cover the addition of the market connect and technology transfer component, implementation of the third PoC round with a stronger gender focus, and capacity building for staff to address these new activities. New gender-focused results and market connect indicators were added to the result framework, and several of the indicators were also revised upwards. The outcomes listed in Table 1 reflect the revised indicators, as by restructuring many had already been met. Responding to client’s demand, the introduction of the market connect and technology transfer component was a significant new set of activities designed to expand the VCIC’s offerings to include global business partnerships. The new program aimed to facilitate the diffusion of climate technology into Vietnam as well as Vietnamese-develop climate technology into new markets, through market research, networking events, and matchmaking and facilitating deals.

COVID-19 impacted project implementation, particularly for POC3 and the ability to undertake global business partnerships for technology transfer and diffusion (Component 4). Although Vietnam was relatively spared during the COVID-19 pandemic, the lockdown in travel impeded the development of global partnership arrangements or market connection. Planned trips for the market connection to Australia and Korea had to be cancelled and activities pushed online. The government had requested a 6 month no cost extensions, however due to the parent trust fund closing, only a two-month extension was permitted. Despite the procurement delays that hindered the development of the program, VCIC shifted to more online activities and was able to meet the objectives of the activities, though in a more limited aspect. Market connect and technology transfer were also an instrumental part of the VCIC’s financial sustainability plans, and with their delay, this has heightened the sustainability risk of the VCIC.

The project benefited from a relatively rich research landscape in Vietnam which fed into a promising pipeline of innovative technology that could be commercialized. Many of the VCIC enterprises were research scientists who had developed innovations but lacked the business and entrepreneurial knowledge to take it to market. Of those surveyed, 85 percent of the enterprise founders/directors had an undergraduate or post graduate degree, and 80 percent identified that prior to participating in VCIC, they were only researchers or experts with technical skills. With many of the technology coming out of research labs, this meant there was a high degree of innovative and competitive products that had strong potential of coming quickly to market—and were even innovative enough to serve markets outside of Vietnam. VCIC was quite adept at helping convert these researchers into entrepreneurs, which was an easier feat than vice versa.

Project design and implementation were informed by the knowledge and experience sharing from international experts and the network of CICs.¹ The World Bank infoDev’s Climate Technology Program hosted international annual meetings among the CICs, who were usually pioneers in the green tech incubation space in their respective countries, to provide them the opportunity to share and learn from

¹ Kenya (2012), South Africa (2013), Morocco (2014), Caribbean (2014), and Ethiopia (2014) CICs were launched before Vietnam (2015) with infoDev. Source: infodev.org



each other's experiences, including in-country visits to the Kenya and South Africa CIC. These visits were paired with conferences related to green business (Sankalp in Kenya, and SEED Symposium in South Africa), to provide exposure to the global green ecosystem players as well as the latest developments in the space.

Delays in implementation were due to the need to reconcile the differences between government procurement procedures and the World Bank's. Vietnam's government processes are lengthy and complex. There were misalignments between government and Bank procurement rules and procedures. As a result --and similar to other Bank projects in Vietnam--there were delays in implementation, including hiring delays, grant distributions, and other project procurement activities. There was also a lack of understanding on GoV's rule in ODA management that the private sector cannot access direct donor funding, which caused delays in PoC1 and PoC2 grant disbursements as these had to come into compliance with GoV regulations. By PoC3, these provisions were incorporated into the process and disbursements were timelier. The support of local Bank Group staff that were well versed in government processes helped overcome procedural roadblocks, particularly as the Bank TTL was Washington DC-based. The Bank Group team addressed this point by assigning a co-Task Team Leader based in Vietnam, who could provide more routine support.

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

Bank Performance: *Satisfactory*

The World Bank conducted regular semi-annual supervision missions and remained proactive throughout implementation. Task team leadership based in DC was complimented by a co-TTL based in the field that was able to provide project support continuity and timely follow up. The World Bank actively provided support related to the capacity building in strategy development, incubation model establishment and other necessary orientations in project implementation process. Throughout the project the World Bank consistently highlighted in the Implementation Status Reports (ISRs) the need to establish VCIC's autonomy (which would allow it to fundraise, raise revenue and allow it to have long term sustainability) and the procurement delays that would impact timely project delivery. These issues were raised to management's attention and escalated to government officials. In interviews, the PMU and Donors noted they were highly satisfied with Bank support and guidance throughout the project.

As part of the supervision of all the CICs, the Bank developed a standardized and comprehensive set of monitoring and evaluation indicators to capture both the activities of the VCIC and the overall performance of the enterprises. These indicators were updated on a quarterly basis, reviewed by the Bank's CTP M&E team, and provided a comprehensive documentation of the results that the VCIC was able to achieve. The project did initially struggle to establish reliable metrics and methodologies for measuring performance, and this issue was only resolved with the assistance from WB and DFAT experts together with an appointment of a dedicated M&E expert in VCIC.

Compliance: *Satisfactory*

Overall, VCIC was in compliance with the Financial Management covenants including the requirements of submission of Audited Financial Statements and the Interim Financial Reports. The quality of the



submitted reports was acceptable. Initially, VCIC suffered from low capacity of FM staff, resulting in (a) the ineligible expenditure occurring without being prevented, (b) disruption of disbursements due to the infrequent submission of Withdrawing Applications and (c) delayed disbursement to Sub-grantees. The issue of low capacity has been gradually improved toward the end of the project with the proactive interventions of the project management.

Vietnam's government processes are lengthy and complex. There were misalignments between government and Bank procurement rules and procedures. As a result, there were delays in implementation, including hiring delays, grant distributions, and other project procurement activities. The support of local Bank Group staff that were well versed in government processes helped overcome procedural roadblocks, particularly as the Bank TTL was Washington DC-based. The Bank Group team addressed this point by assigning a co-Task Team Leader based in Vietnam, who could provide more routine support.

Risk to Development Outcome: *High*

The key risk to the development outcome is the sustainability of the VCIC. Although the VCIC has a good track record of providing comprehensive services to grow their client's enterprises, it has not yet secured long term funding, neither from donors nor the government, nor has it developed stable revenue streams. In the meantime, it has a contract for consultancy services to an international firm, which will provide some funding in the short-term. It will require a great push on VCIC's part to fundraise and solicit donors and corporates.

V. LESSONS LEARNED AND RECOMMENDATIONS

Lessons drawn below derive from the experience of the VCIC as documented above, but also, where relevant in comparison to other CICs and incubators that have been observed and reviewed.

VCIC's operational success can be attributed to key approaches they undertook. Each CIC operates differently with different results based on both external and internal factors. VCIC has been particularly successful when it comes to the outcomes of their clients, particularly the ability to raise early stage and growth capital. While external factors are beyond the CIC's control, the following are some of the key approaches that VCIC undertook that contributed to their success.

- VCIC program officers were competitively recruited from the private sector, as such, they were highly competent with a strong business mindset that could understand and respond to the needs of their clients and provide trusted guidance. This type of recruitment is not always the case when recruiting for a public agency, but for the VCIC, despite the high turnover in staff, having a strong private sector mindset was instrumental in achieving results for their clients.
- VCIC provided high-quality and well-received entrepreneur trainings and training materials, which were jointly designed with international advisors to ensuring high-caliber delivery. Entrepreneurs highly rated the value of their trainings, even indicating their strong willingness to pay for them.
- VCIC was very successful in building partnerships and networks that could be leveraged to support their activities and entrepreneurs. From service partners that provided technical support, to connecting with MoST's network of corporate investors for additional enterprise funding, these



partnerships improved outreach, expanded the support that VCIC could provide its entrepreneurs, and helped strengthen the cleantech entrepreneur ecosystem and profile.

Sustainability issues need to be addressed earlier and more assertively. Without continued large donor/government funding --as was the case with the Kenya and Ghana CICs (donor funding), or South Africa CIC (government funding) -- the business model of any CIC will often need to be modified from providing grants and business services to developing income streams that will contribute to its sustainability. However, new income streams need time to be piloted and iterated on to gauge their income potential and therefore the earlier these can come online the better. While the VCIC did draft a Sustainability Plan in mid-2019, activities that were supposed to generate income were started late or derailed by the COVID-19 pandemic. The Caribbean CIC, also faced similar sustainability issues, and like the VCIC, had to shift to a consultancy model soon after its funding ended to keep cash flow, but could not provide the same level of services without the grant funding. On the positive side, VCIC entrepreneurs do attribute their success to the services they received from the VCIC and indicated their willingness to pay for services. For the higher revenue generating streams like market connect or technology transfer, these, unfortunately, were started late and with little time for experimentation or funding. However, even with a range of revenue streams, most incubators in the emerging economies are not self-financing and need donor or government support.

Incubators like the VCIC also need to build a track record of fundraising, as self-generated income streams are unlikely to be sufficient. One of the key attractions for enterprises to the VCIC was the relative ease of attaining financing. Even if VCIC is able to generate income streams to maintain operating costs, without additional donor, corporate or government funds for grants to enterprises, this will limit the attraction of the VCIC, particularly for high potential innovative enterprises who will either find funding elsewhere --weakening the pool of entrepreneurs VCIC supports-- or who will not be able to implement the activities needed to develop their enterprises. While the VCIC was able to attract US\$800,00 in additional donor financing during the project, it needed to continue building on securing this type of funding post-project. The VCIC has the track record on performance but was weaker on fundraising skills to leverage it into new funding. Another weakness was the delay in becoming an autonomous agency, which would have facilitated it being able to receive funding directly and thereby continuity of operations beyond the project close.

Strong commitment across the government on the climate agenda, creates more willingness to support entrepreneur climate change solutions. The VCIC benefited from a government that had shown strong commitment to the climate agenda and therefore were more receptive to engaging with entrepreneurial climate solutions. One of the benefits of being a government implemented project was that it helped facilitate cooperation with other government sector agencies who can play a key role in rolling out and scaling up innovations, as did occur in the VCIC project. VCIC also greatly benefitted from the ties MoST had with corporate investors, both domestic and international. In addition to several collaborations between government agencies and VCIC enterprises, the VCIC also participated in public policy formation that would help create a more enabling environment for clean tech entrepreneurs.

CICs need an organizational structure that reflects the operations of a fast-moving private facing entity. Although entrepreneurs still performed well, the turnover in staff due to frustration with the organizational structure and processes did hurt some of the enterprises and impeded the development



of key activities that would have supported sustainability, including the e-portal and development fund. To address high staff turnover, VCIC created a section of the e-portal in which staff could share their knowledge across different categories, including partnerships, internal processes, and client information. Systematizing and digitalizing operations can help mitigate the impact of high staff turnover, but better would be to actually resolve the root causes and create a flatter organization structure that was more open to allowing staff to be flexible and be more responsive to clients and opportunities.

International exposure, both for capacity building and networks, was critical to the successful development of the VCIC and its entrepreneurs. As a pioneer incubator in the green tech space, VCIC benefited from an array of international advisors and peer learning experiences with other CICs. International advisors were able to help shift the VCIC business model and improve service offerings in line with international best practice. Particularly as the VCIC was government implemented, global advisors helped guide the VCIC to be more effective in the private sector space. VCIC also benefitted from lessons learned and shared by more mature CICs and other international incubators. The CIC Network provided a conduit for sharing international best practices around clean-tech incubation, staff recruitment, and office set-up.

With focused attention, significant inroads can be made in improving the gender representation of green tech enterprises. The development of a Gender Action Plan, training workshops and partnerships with women's association for better outreach, did improve the gender representation of the third POC, which had 50 percent women representation.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: Increase green growth business innovations by supporting entrepreneurs and SMEs involved in technological solutions through the establishment and operation of the Vietnam Climate Innovation Center

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of businesses that raised early stage finance	Number	0.00	28.00	35.00	34.00
		31-Jan-2017	29-Jun-2018	30-Jun-2020	31-Aug-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of businesses who registered their prototype with Intellectual Property (IP) office	Number	0.00	9.00	12.00	15.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020



Comments (achievements against targets):

In total, there were 19 IPs registered, with one enterprise accounting for 5 IPs.

A.2 Intermediate Results Indicators

Component: Establishment and Operation of VCIC

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of participants in workshops, training events, seminars, conferences, etc.	Number	0.00	300.00	1750.00	2604.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of partnerships with non-financial services providers	Number	0.00	19.00	25.00	43.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
----------------	-----------------	----------	-----------------	-------------------------	-------------------------------



Number of Public Private Dialogue (PPD) sessions	Number	0.00 02-Nov-2015	7.00 29-Jun-2018	8.00 30-Jun-2020	4.00 31-Aug-2020
--	--------	---------------------	---------------------	---------------------	---------------------

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of workshops, training events, seminars, conferences, etc.	Number	0.00 02-Nov-2015	12.00 29-Jun-2018	32.00 30-Jun-2020	42.00 31-Aug-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of knowledge products developed	Number	0.00 02-Nov-2015	16.00 29-Jun-2018	20.00 30-Jun-2020	68.00 31-Aug-2020

Comments (achievements against targets):

Component: Climate Technology Business Incubation Services



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of participants in workshops, training events, seminars, conferences, etc.	Number	0.00	300.00	1750.00	2604.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of businesses/entrepreneurs having access to technical facilities	Number	0.00	50.00	30.00	115.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020
Comments (achievements against targets): VCIC had partnership agreements with several universities that have at their disposal testing/technical facilities which were used by VCIC client companies based on their project needs					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of households with access to new/improved products/services	Number	0.00	1785.00	180000.00	184342.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020



Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
CO2 emissions avoided (metric tons)	Number	0.00	1071.00	45000.00	44216.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of businesses who registered their prototype with Intellectual Property (IP) office	Number	0.00	9.00	12.00	15.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of businesses who raised early stage finance	Number	0.00	19.00	35.00	34.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020



Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Amount of early stage finance raised by businesses	Amount(USD)	0.00	950000.00	1600000.00	1717400.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020

Comments (achievements against targets):

Businesses also raised \$1.9 million in growth stage funding.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of new direct jobs created	Number	0.00	378.00	850.00	1141.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Amount of funding (grants) received by businesses (USD)	Amount(USD)	0.00	1400000.00	1650000.00	1631122.00
		02-Nov-2015	29-Jun-2018	30-Jun-2020	31-Aug-2020



Comments (achievements against targets):



B. ORGANIZATION OF THE ASSESSMENT OF THE PDO

Increase Green Growth Business Innovations through the VCIC	
Outcome Indicators	<ol style="list-style-type: none"> 1. Number of businesses that raised early stage finance 2. Amount of early stage finance raised by businesses 3. Number of businesses who registered their prototype with Intellectual Property (IP) office 4. Number of households with access to new/improved products/services 5. CO2 emissions avoided
Intermediate Results Indicators	<ol style="list-style-type: none"> 1. Number of workshops, training events, seminars, conferences 2. Number of participants in workshops, training events, seminars, conferences, etc 3. Number of businesses/entrepreneurs having access to technical facilities 4. Number of new jobs created 5. Number of partnerships with non-financial services providers 6. Number of Public Private Dialogue sessions 7. Number of knowledge products developed
Key Outputs by Component	<p>Component 1</p> <ul style="list-style-type: none"> • Administrative activities in establishing VCIC • 4 public private dialogue sessions, and contribution to legal changes. VCIC provided comments, recommendations and input to the Enterprise Development Agency of the Ministry of Planning and Investment to draft a Decree on Detailing the Investment for Innovative Startups <p>Component 2</p> <ul style="list-style-type: none"> • 3 Startup Proof of Concept (PoC) competitions – covering 48 enterprises • Business incubation services including training, mentorship, connectivity and boosting investment • Commercialization support <p>Component 3</p> <ul style="list-style-type: none"> • Creation of the VCIC e- portal – 9 modules operating • Setting up a database on technology, market opportunities, enterprises, climate change-related experts



Component 4

- Facilitation of partnerships between foreign climate technology suppliers and local firms which can diffuse these technologies in Vietnam
- Connections between local climate technology suppliers and foreign firms which can facilitate their entry into new foreign markets:
- Number of business leaders participating in international markets/technology transfer activities: 87



ANNEX 2. PROJECT COST BY COMPONENT

Components	Amount at Approval (US\$M)	Restructuring (US\$M)
Establishment, operations of VCIC and provision of policy feedback	2.1	2.41
Climate technology business incubation services, including grants to companies	1.7	1.90
E-portal, database and business support services	.38	.38
Global Business Partnerships for Technology Transfer and Diffusion	.0	.44
Total	4.18	5.13

Additional US\$800,000 in financing was provided during a restructuring



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

COMMENTS FROM VCIC

Comment 1: The e-portal and database system as designed under Component III is very relevant internally to help increase PMU efficiency and externally with the broader ecosystem since it offers tools to grow the climate smart business ecosystem. One possible exception is the social network module.

1. About half of the 17 e-portal modules are designed to optimize PMU efficiency, such as website management, job management (monthly workplans and reports), cloud storage, e-survey, human resource management, and typical administrative controls over the e-portal. These modules represent a body of centralized management software that deals with typical critical activities for project management and thus are deemed relevant.
2. The remaining nine modules serve various functions for the PoC firms and other ecosystem actors in the community. Larger green companies with deep supply chains, investors, researchers, and other key stakeholders can all use the e-portal to suit their needs. The VCIC Social Network module, E-Learning module, E-Event module, Technology exchange, and Biz Tools module (patents, technology, and experts library) are well suited to help facilitate capacity building, network formation, and technology identification and dissemination. One key ingredient, MoST's own technology database, covers technology both under development and already IP protected and is the most robust such database in Vietnam. Market information and technology databases are difficult to find and access in Vietnam, so making these, in combination with a growing database of experts, available to climate smart innovators is beneficial to help grow the nascent start-up ecosystem in Vietnam, assuming adequate promotion and accessibility are continually pursued.

Comment 2: The work process of VCIC project is clear and efficient.

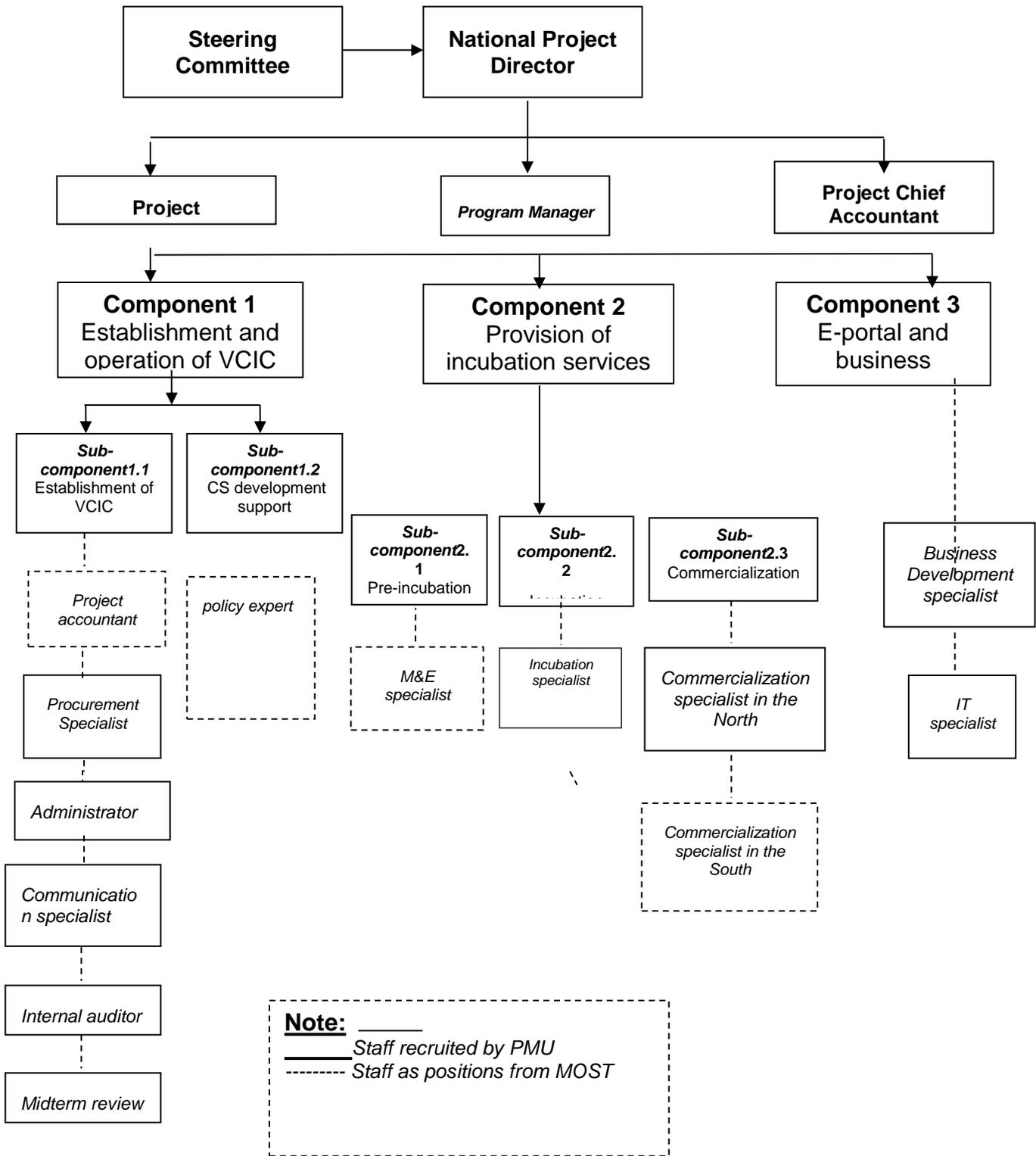
All work process of VCIC is described clearly and in detail in the project documents approved by the WB and MOST including: Project implementation manual (PIM), Grant Manual as well as internal training documents (project management, financial management, procurement management, M&E management). With the achieved result of the project, disbursement percentage reached 96.5% and almost outputs met or exceeded the target, this shows that the work process of VCIC is efficient.

Comment 3: Organizational structure of VCIC designed by MOST and the WB is suitable (please seeing organization chart of VCIC project staffing)

Comment 4: A detailed strategic plan has been developed and multiple revenue streams identified. VCIC has initially received fees for some services. Since 10/2020, we signed and ongoing the implementation of a service contract on technology transferring of container scanning system serving intelligent custom at Vietnam port. According to the contract, VCIC will receive \$1300 of administration fee every month and success fee corresponding 3% of total investment. Beside, one service contract was signed between VCIC and a POC company (TA water treatment company) to support commercialization for the products of the company



Organization Chart of VCIC Project Staffing





THE UPDATED PROCESS OF VCIC CENTER ESTABLISHMENT TILL MAY 26, 2021

No	STEPS	Actual implementation situation	REMARK
1	Step 1: Organize a meeting between Ministry of Science and Technology (MOST), the World Bank (WB) and the Department of Foreign Affairs and Trade (DFAT), Australia to agree on the principle of VCIC establishment	- A meeting between MOST, the WB and DFAT was organized in February 16 th , 2020 - According to the agreement in meeting, VCIC would be established by MOST as an independent and autonomous organization	
2	Step 2: Develop and submit an application of VCIC establishment proposal to the MOST leaders through the Department of Personnel organization	- The VCIC Project Management Unit in cooperation with the World Bank and in the following guidance of Personnel organization Department of MOST developed an application of VCIC establishment proposal and submitted to MOST leaders in late of February 2020 - The application of VCIC establishment includes: <ul style="list-style-type: none"> ▪ A report of VCIC establishment proposal ▪ A draft proposal of VCIC establishment 	
3	Step 3: Organize a meeting of the MOST's party committees to agree on the principle of VCIC establishment	- A meeting of the MOST's party committees relating VCIC establishment was organized in February 28 th , 2020 - MOST leaders had a principal agreement on VCIC establishment and assigned the National Agency of Technology Entrepreneurship and Commercialization Development (NATEC) in cooperation with the Department of Personnel organization to develop a proposal of VCIC establishment as an administration unit under NATEC	
4	Step 4: Adjust the organization and operation charter of the National Agency of Technology Entrepreneurship and Commercialization Development	Added the VCIC center in the organizational structure of the National Agency of Technology Entrepreneurship and Commercialization Development	
5	Step 5: Develop a application of VCIC establishment as an administration unit under the National Agency of Technology Entrepreneurship and Commercialization Development	- The National Agency of Technology Entrepreneurship and Commercialization Development with support of VCIC Project Management Unit developed a draft application of VCIC establishment. - The application of VCIC establishment includes: <ul style="list-style-type: none"> ▪ Proposal of VCIC establishment ▪ Draft organization and operation charter of VCIC center ▪ Proposal of job position ▪ Draft MOST's Decision on VCIC establishment 	
6	Step 6: Get comments of the MOST's relevant departments on the application of VCIC establishment	- Got comments of three department of MOST, including: MOST office, Department of Finance and Planning, Department of Legislation in mid of May, 2021 - In general, the MOST's departments agreed on the VCIC establishment as mentioned in the proposal	
7	Step 7: Complete the application of VCIC establishment on the basic of comments from the MOST's relevant departments as well as interal Departments of the National Agency of Technology Entrepreneurship and Commercialization Development	- With support of VCIC Project Management Unit, a final draft application of VCIC establishment has already done since May 20, 2021. - Currently, Departments of the National Agency of Technology Entrepreneurship and Commercialization Development is getting internal comments on the final draft application of VCIC establishment	
8	Step 8: Appraise the application of VCIC establishment as regulations by MOST	TBD (tentatively June, 2021)	- Leading by Department of Organization and Personnel - The deadline of appraisal is 15 days from



			the date of receiving the full document as regulations
9	Step 9: Finalize the application of VCIC establishment in the following of comments of appraisal unit		
10	Step 10: Approve an official decision on VCIC establishment by MOST's minister	TBD (tentatively June, 2021)	Promulgate the Decision of VCIC establishment by MOST during no later than 25 days from the date of submitting the final application of VCIC establishment



ANNEX 4. SUPPORTING DOCUMENTS (IF ANY)

1. Project Paper, Vietnam Climate Innovation Center (VCIC) Project (P155260), October 14, 2015
2. Project Restructuring Paper, Report No.: RES31525
3. Project Restructuring Paper, Report No.: RES34122
4. Project Restructuring Paper, Report No.: RES42572
5. VCIC Implementation Supervision Reports #1-7
6. Project Missions Aide-Memories
7. Report on Project Implementation Progress of Vietnam Climate Innovation Center, March 2020
8. InfoDev Climate Technology Program Annual Progress Reports for the Steering Committee Meeting, FY16-21
9. Interview Notes with PMU, WB, POCs
10. POC Survey Results and database
11. Vietnam Climate Innovation Center Project – Final Evaluation Report
12. VCIC Strategy and Implementation Plan, Period 2020-2025 Report