

**PROJECT INFORMATION DOCUMENT (PID)  
APPRAISAL STAGE**

Report No.: PIDA20959

<b>Project Name</b>	Ghana Climate Innovation Center (P145765)
<b>Region</b>	AFRICA
<b>Country</b>	Ghana
<b>Sector(s)</b>	SME Finance (34%), Other Renewable Energy (33%), Agro-industry, marketing, and trade (33%)
<b>Theme(s)</b>	Climate change (50%), Technology diffusion (25%), Micro, Small and Medium Enterprise support (25%)
<b>Lending Instrument</b>	Investment Project Financing
<b>Project ID</b>	P145765
<b>Borrower(s)</b>	Ashesi University
<b>Implementing Agency</b>	Ashesi University College
<b>Environmental Category</b>	B-Partial Assessment
<b>Date PID Prepared/Updated</b>	21-Apr-2015
<b>Date PID Approved/Disclosed</b>	21-Apr-2015
<b>Estimated Date of Appraisal Completion</b>	30-Apr-2015
<b>Estimated Date of First Grant Approval</b>	01-Jun-2015
<b>Appraisal Review Decision (from Decision Note)</b>	<p>The chair authorized the team to appraise the project conditioned on the following:</p> <ul style="list-style-type: none"> <li>a. Reengage MOFEP during appraisal to ensure the government is truly committed to the project and aware of the details of the design and implementation arrangements. The team should meet MOFEP in person during its upcoming mission to Ghana and discuss the implementing agency and the planned role for government within the GCIC Advisory Board and other GCIC activities.</li> <li>b. Prior to appraisal, revise the PAD to include a more focused development objective, more realistic results and the revisions recommended by the reviewers at the decision meeting.</li> <li>c. Recirculate the PAD along with the minutes to the participants in the decision review meeting for any additional comments based on the PAD revisions.</li> </ul>

**I. Project Context**  
**Country Context**

1. Ghana, a lower-middle income country in West Africa, has experienced strong economic growth in recent years. After averaging growth of 5.7 percent per year between 2000 and 2009, the beginning of oil production combined with high global commodity prices and good rains boosted real GDP growth to 14.5 percent in 2011 and more than 7 percent in both 2012 and 2013.

2. Poverty has been declining steadily among Ghana's estimated population of 25 million, as reflected in the number of people classified as poor, which dropped from about 50 percent of the population in 1992 to less than 30 percent of the population in 2006. In spite of these improvements, inequalities remain. These inequalities are reflected in significant disparities in economic and social opportunities, mainly between the poorer three regions in the north and the rest of the country.

3. Recent macroeconomic instability is putting at risk the economic gains and reductions in poverty achieved. On August 8, 2014, the country made an official request for IMF assistance. Increasing domestic and external imbalances, reflected in high fiscal and current account deficits indicate significant stability risks. Inflation has been on the rise since January 2013 and the rising trend is expected to continue due to adjustments in prices of petroleum and utilities, rising prices of imported products due to the devaluation of the Ghanaian cedi, and strong demand pressures from the fiscal expansion. Current real interest rate levels of nearly 10 percent are an impediment for both growth and debt stabilization, because they exceed the long-term growth rate of the economy.

4. Ghana's growing vulnerabilities to climate change threaten the long term sustainability of poverty reduction and economic development gains. While Ghana's contribution to climate change through greenhouse gas emissions is currently negligible, the impacts of climate change on Ghana's economy, people, and development prospects are projected to be substantial. There is evidence of rising temperatures across all the ecological zones of Ghana, while rainfall levels have been generally declining and weather patterns have become increasingly erratic. The adverse impacts of these trends on livelihoods, health and hydropower generation are already being felt. The northern floods of 2007, for example, affected 317,000 people, destroyed 1,000 km of roads, 210 schools, 45 health clinics, and damaged or contaminated 630 water facilities.

### **Sectoral and institutional Context**

#### **SME and Private Sector Development**

5. Ghana's economy has yet to be diversified and is based to a large extent on natural resources and agriculture, mostly high volume and low intensity production of raw materials, such as cocoa. If managed sustainably, Ghana's natural resources, both renewable and non-renewable, have the potential to drive economic growth and private sector development. Increasing competitiveness in non- oil and gas sectors therefore figures prominently in Ghana's Shared Growth and Development Agenda (GSGDA) as well as the World Bank's Country Partnership Strategy (CPS).

6. Competitiveness in the country is on the decline. Although Ghana is relatively competitive in relation to its regional peers and other factor-driven economies, Ghana's competitiveness is not yet reflective of an economy transitioning from a factor-driven economy to an efficiency-driven growth model. In terms of competitiveness, the World Economic Forum ranks Ghana 103 out of 148, due to crowding out of private investment, preventing the economy to move from factor-driven

to efficiency driven status.

7. Unlocking Ghana's strong private sector growth potential will require improvements in the enabling environment for business and increased access to business financing. Some of the general issues businesses face includes high cost of capital, poor power supply, high levels of taxation, and lack of access to raw materials. Though Ghana's financial sector is relatively well developed and competitive, it will only provide sufficiently affordable credit to the private sector once the government reduces its borrowing needs, and even then small and early stage businesses with limited collateral will still face challenges to borrowing.

8. Ghana has a strong gap in productivity between its SME sector and its more productive large businesses. Industry in Ghana is mostly private, smaller in size than 10 years ago, and contributes less to growth than it did previously. Small and Medium-sized Enterprises (SMEs) comprise about 80 percent of all businesses in Ghana. Increasing management capacity, workforce skills, innovation and the absorption of technology will be required to increase productivity and boost the competitiveness of the SME sector.

#### Climate (Clean) Technology Sectors

9. A significant part of Ghana's economic activity is dependent on climate sensitive sectors such as agriculture, fisheries, tourism, and forestry. These vulnerable sectors support a large share of employment and livelihoods for Ghana's rural poor. The changing climate is expected to adversely affect crop yields leading to a decline in agricultural GDP of 3-8% compared with today's output. Unpredictable rainfall, in combination with increased energy demand, is expected to result in energy shortfalls across Ghana given its reliance on hydropower. Vulnerability to the expected increase in the frequency and intensity of extreme weather events, such as rainstorms, strong winds and drought, will result in negative economic impacts.

10. Recognizing these impacts from global climate change, Ghana has adopted a National Climate Change Policy (NCCP). The NCCP was approved in September 2013 and launched by the President and the Ministry of Environment, Science, Technology and Innovation (MESTI) in July 2014. The NCCP recommends actions to reduce Ghana's vulnerability to climate change while promoting a low carbon growth strategy that relies on the attraction of clean technology investments. However, there has been limited progress towards designing specific policies and programs to achieve the objectives of the NCCP, particularly in the field of advancing the development of climate (clean) technologies to meet Ghana's climate change challenges.

11. Ghana's natural advantages and its plans to develop its economy in a low carbon manner offer an important opportunity to attract significant investments in climate (clean) technology sectors and to build up the capacity of local businesses to participate in these high value sectors. Ghana's natural resources (irradiation patterns, rivers, arable land) and tropical weather, along with its growing economy and increasing energy demand are attractive to clean technology investors. Potential business opportunities include renewable energy (solar, hydro, biomass, wind etc) and energy efficiency, watershed and land management, sustainable agriculture, waste management, and improved building and transportation design. Within renewable energy, the 2011 Renewable Energy Act introduced a Feed-in-Tariff (FiT) that came into effect in September 2013 and has potential to drive the sector's growth.

12. By supporting its clean technology industries, Ghana can ensure access to the technologies necessary to meet its climate change and environmental goals while also adding new fast growing and dynamic industries to its economy. Table 1 lists some of the climate technologies and business opportunities relevant to Ghana's climate and environmental challenges.

Table 1. Summary of Climate Vulnerabilities and Relevant Technology Sectors in Ghana  
 Climate Change Expectation      Expected Impact      Relevant Climate Technologies

Rising Temperatures:

A warming climate is expected across most ecological zones in Ghana over the period of 2010-2050. For example, dry season mean temperatures are projected to rise by about 1.5 to 2oC to about 3oC by 2080

- Decline in crop yields and agricultural production
- Decreases in agricultural GDP
- Decreases in local food supply and therefore increases in malnutrition, especially in rural areas
- Disruption to the livelihoods of Ghanaians (especially women and small-scale farmers)

Climate Smart Agriculture

- o New resilient crops/seeds
- o Agri-machinery/ equipment
- o Food processing
- o Bio-pesticides and fertilizers
- Waste management
- Efficient irrigation

Increases extreme weather events/ Unpredictable Rainfall: Changes are expected in the frequency and intensity of extreme weather events, such as rainstorms, strong winds, flooding and drought

Increased flooding and thus destruction of weak infrastructure (including buildings, bridges, roads, schools, health clinics, and water supplies)

- Energy shortages due to variable water flow into hydro-plants
- Increased cases of malaria, cholera, diarrheal diseases and Guinea worm infestation due to low access to clean water and poor sanitation (as a result of urban flooding)
- Grid-scale and off-grid renewable energy (solar, wind, small-scale hydro, bio-mass)
- Weather services (warning systems, insurance)
- Waste water recycling
- Water use efficiency
- Efficient irrigation
- Rain water harvesting
- Potable water
- Waste water treatment
- Desalination

Rising Sea Levels:

Sea levels are expected to rise over 1 meter this century, causing significant coastal erosion, submerging 1,120 square kilometers of land and putting hundreds of thousands of people at risk

Destruction of coastal zone economy (including fishing, oil and gas exploration, cement production, and aluminum smelting) due to land loss, poor irrigation etc.

- Loss of homes and livelihoods causing increased migration to the cities from coastal zones and applying additional pressure on an already weak urban infrastructure
- Climate-resistant infrastructure
- Flood/storm resistant products

## Other energy/environment-related issues Relevant Climate Technologies

Energy access problems: Although 72% of Ghana's total population has access to electricity there are many regions, particularly in rural areas, where less than one third of the population have access. The northern, upper east and upper west, for example, have access rates of 44%, 30%, and 32% respectively

- Off-grid solar
- Appliances (e.g. cook stoves, SWH)
- Transmission and distribution
- HVAC
- Energy efficient manufacturing
- Lighting
- Green IT

Deforestation: Ghana's contribution to climate change through emissions is negligible against the global average, but deforestation, another climate change contributor, is becoming a major problem in Ghana as a result growing requirements for agricultural land and illegal logging

- Bio-fuels
- Biogas Generation
- Distributed Biomass power
- Waste-to-energy
- Biodiesel/ethanol
- Off-grid/Distributed Solar PV

Poor waste management: Poor waste management, agricultural and industrial discharges are seriously damaging the coastal and marine environment. The 2010 Environmental Performance Index (EPI) of Yale University ranked Ghana 109 out of 163 countries in terms of environmental public health and ecosystem vitality

- Waste-to-energy
- Recycling, e-waste management

## II. Proposed Development Objectives

The objective of the project is to support entrepreneurs and SMEs involved in developing profitable and locally-appropriate solutions to climate change and increase business activity in the climate technology sector through the establishment of a locally based climate innovation center.

## III. Project Description

### Component Name

Climate Innovation Center Establishment, Services and Monitoring and Evaluation

### Comments (optional)

### Component Name

Climate Venture Financing Facility

### Comments (optional)

#### IV. Financing (in USD Million)

Total Project Cost:	17.20	Total Bank Financing:	0.00
Financing Gap:	0.00		
<b>For Loans/Credits/Others</b>			<b>Amount</b>
Borrower			0.00
InfoDev			17.20
Total			17.20

#### V. Implementation

54. The project will be implemented over a five-year period from 2015 to 2019. The GCIC will be established at the Ashesi University College (AUC) by a competitively selected consortium of four organizations. AUC is the grant recipient and lead organization and will have the primary responsibility for overseeing and managing the development and operation of the center, staffing, facilities, and outreach. The three other organizations in the consortium will provide specific services on behalf of the GCIC and are (i) Ernst and Young Ghana, (ii) SNV Netherlands Development Organization and (iii) the United Nations University Institute for Natural Resources in Africa (UNU-INRA).

55. The grant recipient and its consortium partners were identified through an open and competitive selection process. Following a request for expressions of interest (EOI) in March 2014, 24 EOIs were received, representing 60 organizations from 15 countries. The consortium was selected for a number of reasons: AUC is a private university based near Accra that enjoys a strong overall reputation and demonstrates commitment to entrepreneurship and engagement with the private sector in its existing programs. The leadership of the university demonstrated strong commitment to the CIC mission and objectives as part of AUC's own vision of an entrepreneurial and environmentally responsible university. Together, the four consortium members bring complementary experiences and skills to contribute to the implementation of the CIC. They have a well thought through and practical approach to establishing the CIC, as well as an experienced and capable team to draw on. The evaluation panel was particularly impressed by AUC's vision for the CIC within its own mission and long term objectives to support the development of Ghana, as well as the consortium's strong links to entrepreneurial and technical expertise in Ghana and internationally. Some challenges for the consortium exist, including a location slightly away from downtown Accra and the need to recruit the proper management to run the CIC, but the consortium presented effective plans for addressing these challenges. The next ranked bidder, the University of Ghana led consortium, had its own challenges such as location, university bureaucracy and lack of international linkages. The Ashesi bid was viewed as the much preferred option by the evaluation panel.

56. The GCIC will be established as an institute of AUC, a registered non-profit corporation in Ghana since 2001 (incorporated under the Companies Code, 1963 (Act 179), liability limited by guarantee). The GCIC will operate with dedicated staff and a degree of operational autonomy but be wholly owned by AUC. This structure allows the GCIC independence in its day to day operations. However, the GCIC will benefit from the administrative, budgeting, staffing and other established

processes of the university. The GCIC will have an Advisory Board to provide strategic guidance, but will ultimately be accountable to the AUC Board of Directors. The GCIC will be physically hosted in the first years of its establishment, in AUC's new engineering building.

57. The CVFF will be managed by an independent team or organization with investment management expertise. The GCIC will be responsible for selecting the CVFF management. An investment committee that will include at a minimum the CEO of the CIC and the Managing Director of the CVFF will make final decisions on CVFF investments.

58. The project is endorsed by the Ministry of Environment, Science, Technology and Innovation, the Ministry of Energy and the Ministry of Trade and Industry and has received support and consent from the Ministry of Finance. However, the project is not managed in any way by these ministries or related Government agencies. The government will have an advisory role through a seat on the GCIC Advisory Board.

59. infoDev, a global partnership program within the World Bank's Trade and Competitiveness global practice, will provide supervision during the course of the project. Supervision budget has been secured in advance and will not draw upon project funds.

## VI. Safeguard Policies (including public consultation)

<b>Safeguard Policies Triggered by the Project</b>	<b>Yes</b>	<b>No</b>
Environmental Assessment OP/BP 4.01	<b>x</b>	
Natural Habitats OP/BP 4.04		<b>x</b>
Forests OP/BP 4.36		<b>x</b>
Pest Management OP 4.09		<b>x</b>
Physical Cultural Resources OP/BP 4.11		<b>x</b>
Indigenous Peoples OP/BP 4.10		<b>x</b>
Involuntary Resettlement OP/BP 4.12		<b>x</b>
Safety of Dams OP/BP 4.37		<b>x</b>
Projects on International Waterways OP/BP 7.50		<b>x</b>
Projects in Disputed Areas OP/BP 7.60		<b>x</b>

**Comments (optional)**

## VII. Contact point

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