CLIMATE TECHNOLOGY PROGRAM

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Accelerating Innovation in the Development, Deployment and Transfer of Clean Technologies

Kenya Climate Innovation Center: CIC

A Business Plan for the financing and implementation of a CIC in Kenya.

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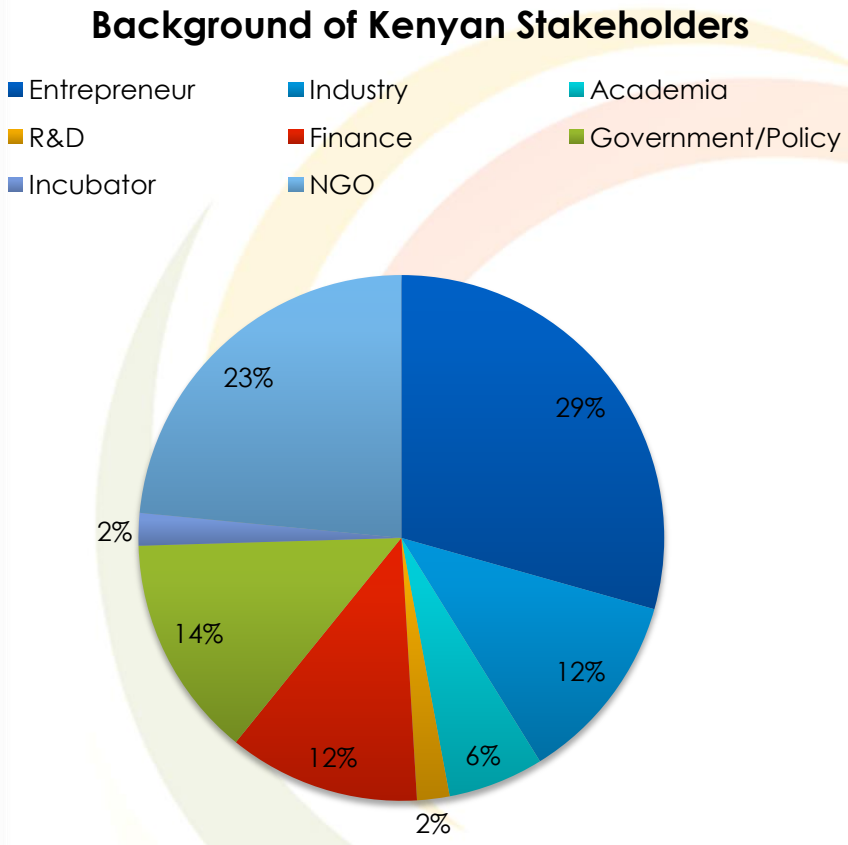

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1.0 Executive Summary

*info*Dev's Climate Technology Program is developing business plans for the financing and implementation of Climate Innovation Centers (CICs). Such centers form a holistic country-driven approach to accelerating the development, deployment and transfer of locally relevant climate technologies. This business plan outlines a required investment of USD 15.2 million to establish a CIC in Kenya over a five year period which includes implementation, launch and operations. The CIC will deliver funding to over 70 climate technology enterprises, generating over 4,600 direct and indirect jobs at a cost of approximately USD 3,200 per job over 5 years and over 24,000 jobs at USD 850 per job over 10 years[1]. With investment returns and other potential revenue, the center aims to be between 70%-100% financially sustainable after 10 years.

Kenya is characterized by the following challenges, which intersect directly with the global Climate Change agenda. These issues underscore the critical need to stimulate climate innovation and the growth of new clean technology industries in Kenya:

- Only 14-16%[2] of Kenyan households are connected to the grid, a significant contributor to the energy divide in the country. In addition, the overall grid penetration is growing at a lower rate than general population growth.
- Traditional biomass-based fuels for cooking and heating are currently the most important source of primary energy in Kenya with wood fuel accounting for 68.3% of total consumption[3].
- Availability of clean water in the required quantities as well as adequate sanitation facilities remain major constraints to industrial development and economic growth. The access to safe water is estimated at 60% in urban and 40% in rural areas while sewerage systems cover only 14% of the population.[4]
- 80% of Kenya's land area, is classified as Arid and Semi-arid, and receives an annual rainfall of less than 1,000 mm. Agricultural production, though highly constrained by the low and erratic rainfall, is still the key economic activity in Kenya, contributing 80% of formal employment and 26% of the Gross Domestic Product (GDP). [5]

1 See impact/outcomes section of report for assumptions
2 DANIDA CTIF Feasibility Report
3 Kenya National Bureau of Statistics (KNBS), 2007
4 The National Water Services Strategy (NWSS), 2007
5 Kenya Irrigation and Drainage Master Plan, 2009

Over the course of an eight-month process, *info*Dev engaged with Kenyan stakeholders from relevant sectors: R&D facilities, universities, incubators, industry, Government, SMEs, investors, NGOs, international institutions operating in Kenya. This multidisciplinary group gave a wealth of feedback and inputs which fed directly into the outcomes of the business plan.

Firstly, *info*Dev identified the most critical gaps facing climate innovation across the following journeys: technology, company, finance, markets and policy. Secondly, *info*Dev prioritized six technologies on which the Kenya CIC could focus, including off-grid technologies, water management and purification, micro-hydro, technologies for adaptation (flood/drought control), sustainable agri-business and bio-energies. Finally, based on these learnings, the mission and core goals of the CIC were designed:

Mission

To provide an integrated set of services, activities and programs that leverage and expand existing innovation capacity and support the development and scale of climate technology enterprises in Kenya

CIC Core Goals - Fill market gaps by:

1. Providing access to flexible investment mechanisms that support enterprises at varying levels of innovation and scale
2. Building innovation capacity through the delivery of advice, assistance and educational products
3. Enabling local and regional collaboration that develops and supports an innovation ecosystem in east Africa
4. Identifying and unlocking new opportunities through access to information and market intelligence
5. Facilitating access to facilities that support rapid technology design, adaptation, proto-typing, testing and manufacture

The CIC's mission and goals, to be delivered through a range of services and programs, can be categorized as follows:

Finance

- Providing risk capital through a highly flexible fund that offers financing through two windows, namely: proof of concept (USD 25 – 100K) and seed (USD 100K - 750K).
- Facilitating other sources of financing through syndicating investors, building partnerships with banks to facilitate working capital finance and facilitating consumer finance to ensure technology adoption in the market.

Advisory Services

- Business training providing courses and toolkits on entrepreneurship, capacity building for local banks and organizing events and seminars.
- Offering specialized technical training including the use of equipment and general manufacturing best practices.
- Providing access to a revolving TA fund for high-cost, high-expertise technical assistance to support product development, venture creation and business development.

Enabling Ecosystem

- Working closely with the government and other stakeholders to develop policies that support clean technology adoption in Kenya.
- Coordinating and brokering technology transfer and joint collaborative R&D, and international innovation center networking activities.
- Raising the visibility of the CIC, including affiliated innovators, the brand name and, more generally, the importance of climate technologies for Kenya.

Access to Information

- Providing market information including market size and prices for various technologies and the competitive landscape.
- Facilitating access to technology information, including technical information on products and material sourcing, for entrepreneurs.
- Developing and providing access to a database of financial information for use by entrepreneurs (on sources of funding), funders (on the pipeline and technologies emerging from the CIC) and consumers (on finance institutions funding climate tech).

Access to Facilities

- Providing access to facilities that support rapid technology design, adaption, proto-typing, testing and manufacture through both in-sourcing a CAD lab, 3D modelling machine and networking space, and out-sourcing the access of other equipment to existing facility providers.

In carrying out this mission the center will measure performance against aggressive impact and outcome targets over a 5-10 year period including:

- Mitigate up to 1.5 million tons[6] of CO2 by the products/services of CIC-supported enterprises over 10 years;
- Install up to 90MW of off-grid energy, providing additional access to up to 1 million Kenyans and 264,000 households[7].

[6] Based on coal emissions at 1.47kg per kWh. kWhs based on projected revenues from sales of off-grid energy products from CIC invested enterprises over 10 years.
[7] Based on projected revenues of CIC invested enterprises over 10 year period

- Provide access to clean water to up 441,000 Kenyans and 110,000 households including preventing up to 900 deaths from water born disease[8].
- Provide better/cheaper food to up to 42,000 households and improve the efficiency over up to 22,000 small-scale farms, supporting a crop yield increase of up to 50% per hectare[8].

The CIC will further strive towards other financial, social and environmental returns over a 5 year period including:

- Select, finance and provide technical assistance and hands-on mentoring to over 70 Kenyan climate technology entrepreneurs and ventures – Achieving a survivability rate of 50% at the POC phase and 75% at the seed stage after 3 years of operations.
- Generate over 930 direct jobs and 3700 indirect jobs[8] at a cost of USD 3,200 per job and over 24,000 high value jobs at USD 850 per job over 10 years.
- Achieve a 100% leverage ratio for entire cost of the center via local cash and in-kind contributions from the private sector.
- Ensure the companies and initiatives promoted within center practice fair treatment to poor and marginalized demographics by generating over 1,400 jobs for women[9].
- Achieve 70% sustainability of the total costs and almost 92% of investment costs of the CIC at the 10th year of operation.

The USD 15.2 million budget for the establishment of the CIC over a 4 year period will include; 60% for financing, 12% for programs, 19% for staff, 7% for implementation and 2% for facilities. With this investment, investors will see concrete *economic, environmental and social returns,* as outlined above. Further, investors will benefit from:

1. Exposure to an on-going pipeline of climate technology innovations.
2. Considerable knowledge generated and disseminated through the CIC's market information, policy best-practice and analytical products.
3. Access to a complete local network of CIC partners and stakeholders.
4. A primary point of contact for establishing international linkages that can facilitate technology transfer, as well as business-to-business opportunities and collaborative R&D.

These are the types of ecosystem impacts that only a well-funded, holistic institution like the CIC can provide.

[8] Based on international benchmarks of indirect jobs created in high-tech sectors
[9] http://www.onlinedts.com/resources/Publications/12-06_KY1-EconomicSnapshot-Kenya.pdf

2.0 Climate Innovation in Kenya

Over an eight month period, *info*Dev assessed the feasibility of establishing a locally owned and operated Climate Innovation Center (CIC) in Kenya through an intensive stakeholder engagement process. The process concluded in June 2010 with over 123 stakeholders from varied backgrounds and experiences providing input into the conceptualization, design and development of a CIC in Kenya.

2.1 *info*Dev Goals:

1. Assess the feasibility for establishing a CIC in Kenya and develop a business model that reflects the Kenyan market, as well as the national strategy to address climate change.
2. Based on the outcomes of the feasibility assessment, implement the CIC.
3. Network the Kenyan CIC regionally and internationally to promote south-south and north-south collaboration, business linkages and exploit local and international synergies for Kenya's climate technology sector.

2.2 Innovation Centers

*info*Dev supports the innovation ecosystem in developing countries through facilitating a global network of 'business incubators'. These incubators act as hubs to aggregate financing and shared services to assist innovative companies overcome market barriers (that are particularly high in developing countries). Experience has shown that these centers dramatically increase the survival rate of new enterprises with over 75% being operational after 3 years of exiting the incubator. As a policy tool, creating such centers of innovative activity also is a highly effective form of public spending, resulting in lower long-term employment costs when compared with infrastructure projects[10]. Incubation experience also has shown that for every USD1 of government subsidy, a Return on Investment (ROI) of USD30 tax revenue can be generated in the long-term through corporate and income taxes from the spun out companies[11]. With *info*Dev's business incubator network expanding to over 300 centers in more than 80 developing countries, generating 20,000 SMES and 220,000 jobs, it is clear that centers that actively support the development of innovative enterprises are important building blocks in a country's private sector development strategy.

2.3 Climate Innovation Centers:

As multilateral, national and local solutions are being structured to address the issue of climate technologies, *info*Dev's Climate Technology Program is piloting the concept of Climate Innovation Centers (CICs) as a mechanism to support innovation by offering a full suite of services to address locally relevant barriers to climate technology commercialization.

[10] Grant Thorton Report on Incubation: Source: EDA
[11] NBIA (National Business Incubation Association) data

In addition to supporting promising new technologies and ventures, these centers also could provide access to finance, access to equipment and facilities, market information, policy advocacy, technical assistance and facilitate national and international collaboration. In this way, a center acts as a national focal point, or 'one-stop-shop,' to aggregate efforts in promoting the growth of locally relevant, indigenous climate innovations and to facilitate cross-border technology collaboration.

Leveraging Lessons learned:

The foundation of the CIC assessment and feasibility work has been based on global experiences in conceptualizing, designing, developing and implementing similar initiatives. This has included *info*Dev's 10 years of experience in the implementation of innovation and entrepreneurship programs in over 80 developing countries. Other lessons learned and experiences that have been leveraged for the CIC feasibility work include the UK's Carbon Trust and *info*Dev's Global Assessment Report on CICs produced in collaboration with UNIDO and Bloomberg New Energy Finance. This study showcases an inventory of 70 innovation centers, including 5 detailed case studies on CGIAR, NVI - India, UNIDO NCPCs, CIETEC - Brazil and the Baoding National New and Hi-tech Industrial Development Zone - China.

2.4 Stakeholder engagement process

The center's business model and associated services offered are dependent on, and tailored to, the local market. To identify market needs, opportunities and challenges from a local perspective, *info*Dev conducted a feasibility analysis via an in-country, multi-stakeholder engagement process and sector mapping exercise of the climate innovation landscape. Stakeholders were convened for a series of workshops and interviews to explore the key barriers to climate technology commercialization and assist in the development and design of a business plan to establish a CIC.

3.0 Climate Technology Market Landscape: Kenya

3.1 Defining Climate Technologies in Kenyan context

Kenya is characterized by the following challenges, which intersect directly with the global Climate Change agenda:

- Only 14-16%[12] of Kenyan households are connected to the grid, which is a significant contributor to the energy divide in the country. In addition, the overall grid penetration is growing at a slower rate than general population growth.Between 2000 and 2008, the grid penetration rate grew at 0.9%[13] per year while the population grew at 2.6%[14]; hence, the off-grid population will continue to grow rapidly if unaddressed.
- Traditional biomass-based fuels for cooking and heating are currently the most important source of primary energy in Kenya with wood fuel accounting for 68.3% of total consumption[15].
- Availability of clean water in the required quantities as well as adequate sanitation facilities remain major constraints to industrial development and economic growth. The access to safe water is estimated at 60% in urban and 40% in rural areas while sewerage systems serve only 14% of the population.[16]
- 80% of Kenya's land area is classified as "Arid" and "Semi-arid" and receives an annual rainfall of less than 1000 mm. Agricultural production, though highly constrained by the low and erratic rainfall, is still the key economic activity in Kenya, accounting for 80% of formal employment and 26% of the Gross Domestic Product (GDP). [17]

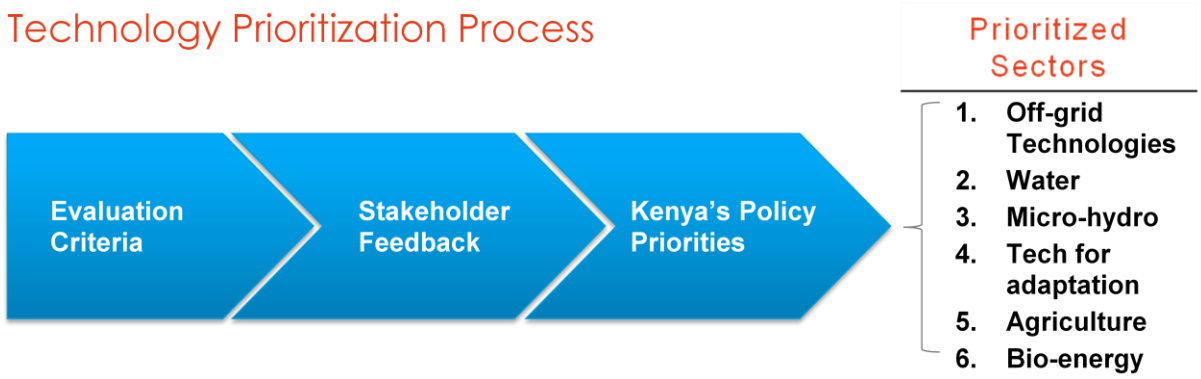
However these challenges also are opportunities. The Government of Kenya (GoK), in particular, has put in place a policy to diversify energy supply which includes incentives to promote renewable energy generation, such as geothermal, small hydro, wind and solar energy. The low rate of national electrification, high costs of conventional energy, water shortages, agricultural challenges and favorable demand side support measures introduced by the Government all combine to offer excellent market opportunities for innovations in clean energy.

3.2 Technology Prioritization

While the CIC will maintain an inclusive strategy initially offering its services to all climate technology sectors, Kenyan stakeholders voiced a strong recommendation for prioritizing certain areas that (1) will address the challenges faced by the under-

[12] DANIDA CTIF Feasibility Report
[13] Lighting Africa Market Report
[14] UNICEF Kenya Statistics
[15] Kenya National Bureau of Statistics (KNBS), 2007
[16] The National Water Services Strategy (NWSS), 2007
[17] Kenya Irrigation and Drainage Master Plan, 2009

served rural and low income households, (2) have high potential in creating new sectors and jobs and (3) are well suited for the services, specialties and scope of the CIC's business model.



The process of prioritization involved three key steps:

1. The *info*Dev team evaluated all the technology sectors against criteria of market opportunity, business viability, and potential impact. See table below for the detailed evaluation criteria and Annex 2 for full analysis[18].
2. Over 60 stakeholders were convened at a workshop in Nairobi where they discussed and ranked climate technology sectors most suitable for the CIC.
3. Technologies were assessed in light of leading government policies to ensure that CIC's activities would align with the Government of Kenya's priorities.

The weighted average of these three steps resulted in six select sectors: off-grid technologies, water, micro-hydro, technologies for adaptation (flood/drought control), sustainable agri-business and bio-energies. It should be noted that the CIC does not intend to neglect other technology verticals. However, it will develop the core expertise and tailored services to ensure that one or more of these technologies are supported towards scale and commercialization, and that over time the CIC will develop specializations in specific sectors.

Code	Evaluation Criteria	Description
TR	Technology Readiness	Potential of the technologies to enter the market in the near future
MD	Market Demand	Market pain-point, product subsidies, consumer orientation, competing technologies, affordability etc.
AF	Availability of Funding	Near-term fund for R&D, commercialization and expansion
RS	Clear, Ready Stakeholders	Stakeholders able to affect the likelihood of adoption of a given technology

[18] Adapted by infoDev: Nortech

BM	Business Model	How viable is the business model today? Includes supply chain, distribution, consumer access.
IR	Leverage of Indigenous Resources	Ability to utilize and/or leverage natural resources and endowments
EC	Entrepreneurial Capacity	Existence or ability to develop/recruit talent to make the technology companies successful
WF	Workforce	Current or potential workforce capabilities necessary to commercialize and scale given technology
PO	Policy	Regulations, incentives and policies impacting a given technology
EI	Economic Impact	Impact of a given technology on local economy including the creation of jobs
GI	GHG Impact	Impact of a given technology on emission reduction
SI	Social Impact	Impact on rural areas, specific demographics (e.g. Women) and base of the pyramid markets
AT	Already on Track	MULTIPLIER: There is good traction in the market for these technologies as barriers are low - therefore further innovation or intervention is not required

(H) High **(M) Medium** **(L) Low**

Presented below are the opportunities for each of the six prioritized sectors. For each, further information, including the strategic importance and commercialization potential, is provided in Annex 3.

Technology 1: Off-grid Technologies

Score: 4.1/5.0

	TR	MD	AF	RS	BM	IR	EC	WF	PO	EI	GI	SI	AT
Off-grid	M	M	L	M	M	M	M	M	M	H	H	H	M

Main technologies: Solar PV, CPV, Bio-Gas, Biomass, Wind.

Example business models: Off-grid/distributed solar PV, off-grid/distributed CPV, distributed bio-gas, distributed biomass generated power, off-grid/ distributed wind kW, Distributed energy from hybrid power systems (e.g Wind-solar-diesel hybrid systems).

Technology 2: Water

Score: 3.9/5.0

	TR	MD	AF	RS	BM	IR	EC	WF	PO	EI	GI	SI	AT
Water	H	H	M	M	L	H	H	M	M	M	M	M	L

Main technologies: Solar filtration, desalination, rainwater harvesting, efficient irrigation

Markets/applications: domestic use, agricultural use, industrial use, recycling / waste water treatment, water use efficiency. Markets broken out into Domestic (30%), Industrial (6%), Agricultural (64%)

Technology 3: Micro-hydro

Score: 3.9/5.0

	TR	MD	AF	RS	BM	IR	EC	WF	PO	EI	GI	SI	AT
M-Hydro	M	H	M	M	M	H	M	M	H	M	H	H	M

Markets/applications: Domestic, rural mini-grid use

Example Business Models: Distributed power, grid infrastructure

Technology 4: Technologies for adaptation (flood/drought control)

Score: 3.7/5.0

	TR	MD	AF	RS	BM	IR	EC	WF	PO	EI	GI	SI	AT
TA	H	M	M	M	M	M	M	M	L	H	H	H	M

Sub-technologies: greenhouse/shednet, water harvesting & storage, irrigation & distribution, afforestation technologies.

Markets/applications: Smallholder farmers, industrial farming, water use efficiency

Technology 5: Agriculture

Score: 3.5/5.0

	TR	MD	AF	RS	BM	IR	EC	WF	PO	EI	GI	SI	AT
Agri	M	M	M	M	M	M	M	M	L	H	H	H	L

Sub-technologies: Resilient crops/seeds, climate-friendly / EE agricultural machinery, EE irrigation, EE food processing, climate friendly alternatives to pesticides and fertilizer

Example Business Models: Smallholders, industrial farming, organics vs GM/biotech

Technology 6: Bio-Energy

Score: 3.4/5.0

	TR	MD	AF	RS	BM	IR	EC	WF	PO	EI	GI	SI	AT
B-Energy	M	M	L	M	L	H	L	L	L	H	H	H	L

Sub-technologies: Bio-gasification; bio-diesel, biomass power & heating

Example Business Models: Distributed generation (grid-connected or mini-grid), fuel supply chain, domestic/SME products.

Technology vs. Business Model Innovation: Importance for Kenya

It is important to note that while the focus of the Kenya CIC is to support the commercialization and scale of emerging technologies, much of the opportunity in accelerating the innovation process in Kenya will be derived through developing new business models. This will involve addressing non-technical related barriers to deployment of existing and transferred technologies. Such interventions could include innovation in distribution models, marketing and business development, cost structures, consumer financing and production processes. With a stronger focus on financing and supporting business model innovation, the CIC can have a greater impact on rapidly deploying new products and services that will address the challenges faced by the under-served rural and low income households in Kenya. These assumptions have been explored in the 'innovation level' model on page 29.

3.3 Stakeholder analysis

Through the stakeholder engagement process, *info*Dev compiled a thorough map of the climate innovation players in Kenya and in the six priority technologies. A key observation here is that there are a myriad of institutions working on these sectors. The challenge for the CIC is to engage collaboratively and enhance this ecosystem, rather than to offset or compete with any existing activities. The following section outlines in detail the current climate technology stakeholder landscape in Kenya, including:

- R&D
- Government
- Universities
- Business Incubation
- Industry – Large
- Industry – Small
- NGOs
- International Inst.
- Financiers

Stakeholder / Sector Mapping Matrix

	Off-Grid Tech	Water	Micro-Hydro	Tech for Adapt.	Agriculture	Bio-Energy
R&D Institute	KIRDI, IDRC, Kenya National Academy of Sciences					
GOI/Policy	ACTS, AFREPREN, MOE, MOI,MEMR, MoF,PM's Office, MoA, NEMA					
Universities	JKUAT, KU, UoN, Moi University, Strathmore University					
Incubators	IFC's SSC, JKUAT, KIRDI					
Industry - SME	BrazAfrique Craftskillz Digitel-tel D.Light Easun Services Environmental Energy Enterprises Goodlite Go Solar Systems Ltd. Kenital Solar Kijito Lighting up Kenya Nuru Solar World E.A. SunTransfer Think Solar Technics Tough Stuff Wigma Entreprises Co. Wilken Solar WinAfrique	Ivory Water Company Kyoto WinAfrique	Que Energy Ltd	WinAfrique	CAWT Africa Conservation Tillage Network	4BK Intern Bahope Biogas Energy Solutions Ltd. Biopower Holdings Ltd Biosol Systems & Eng. Chogo Damwe Dorbajan Equator Joymat Pipal Salsy Power Wind and Biogas Systems Wysters Investments Zesac
Industry-Large	GE	GE	GE	GE	Monsanto Syngenta	GE
NGO	Clinton Global Foundation, SNV, iHub, Practical Action, Solar Cooker International, Solar Aid, Solar Energy Foundation, Youth Environmental Alliance, GVEP, Cleaner Production Center, International Climate Interchange, GTZ					
Consulting	Pipal Ltd, IES, Renewable Energy Ventures (K) Ltd., CAMCO, Stockholm Institute, Alan Engineering					
Internation'l	World Bank, UN, IFC, USAID, UNDP, UNEP, DFID, UNIDO, HIVOS, Embassy of Brazil, Embassy of Finland, DANIDA, Embassy of Sweden, IDRC, Rockefeller					
Financiers	Acumen Fund, EDB, Growthfin, Faulu, E+CO, Grofin, RealWays Capital, Helios Social Enterprise, National Environmental Trust Fund, AGRA – REACT, Responsability, East Africa Capital Partners, Ciel Capital, Intreturn Capital					

3.4 Leveraging exsisting initiavites:

Example 1

The Kenya Industrial Research Institute (KIRDI) has experience carrying out research on new and innovative technologies such as food processing. They also have commercialized some of these technologies and are pursuing a 5 year strategic plan to develop more locally relevant technologies for various parts of the country. They offer experienced staff, some incubation space for entrepreneurs and heavy metal fabrication machienery. The CIC could leverage KIRDI's existing human capital and equipment resources to help climate entrepreneurs fast track prototype development. Given part of KIRDI's strategy is establishing a broader network of expertise in Kenya, the CIC could also leverage this network to help reach beneficiaries and affiliates in other parts of the country.

Example 2

The Government of Kenya, through the Ministry of Finance, is establishing a Green Energy Fund. Part of the Fund will provide technical assistance to project and technology developers in the cleantech space. The CIC could receive funding to provide advisory service support to CIC ventures by partnering with the Ministry of Finance. This partnership also would give the Center additional opportunities to provide regulatory support to the government regarding climate technologies in Kenya.

Example 3

The IFC's SSC supports SMEs with both TA as well as access to finance. The SSC has established business training software and a database of support consultants that the CIC can draw on for specific skills training for cleantech entrepreneurs. The CIC also could explore the opportunity to share space at the SSC where infrastructure already exists. Initially partnering with the SSC would lower the start up costs for establishing the CIC while providing opportunities to leverage the vast professional services contacts and network that the SSC has already established.

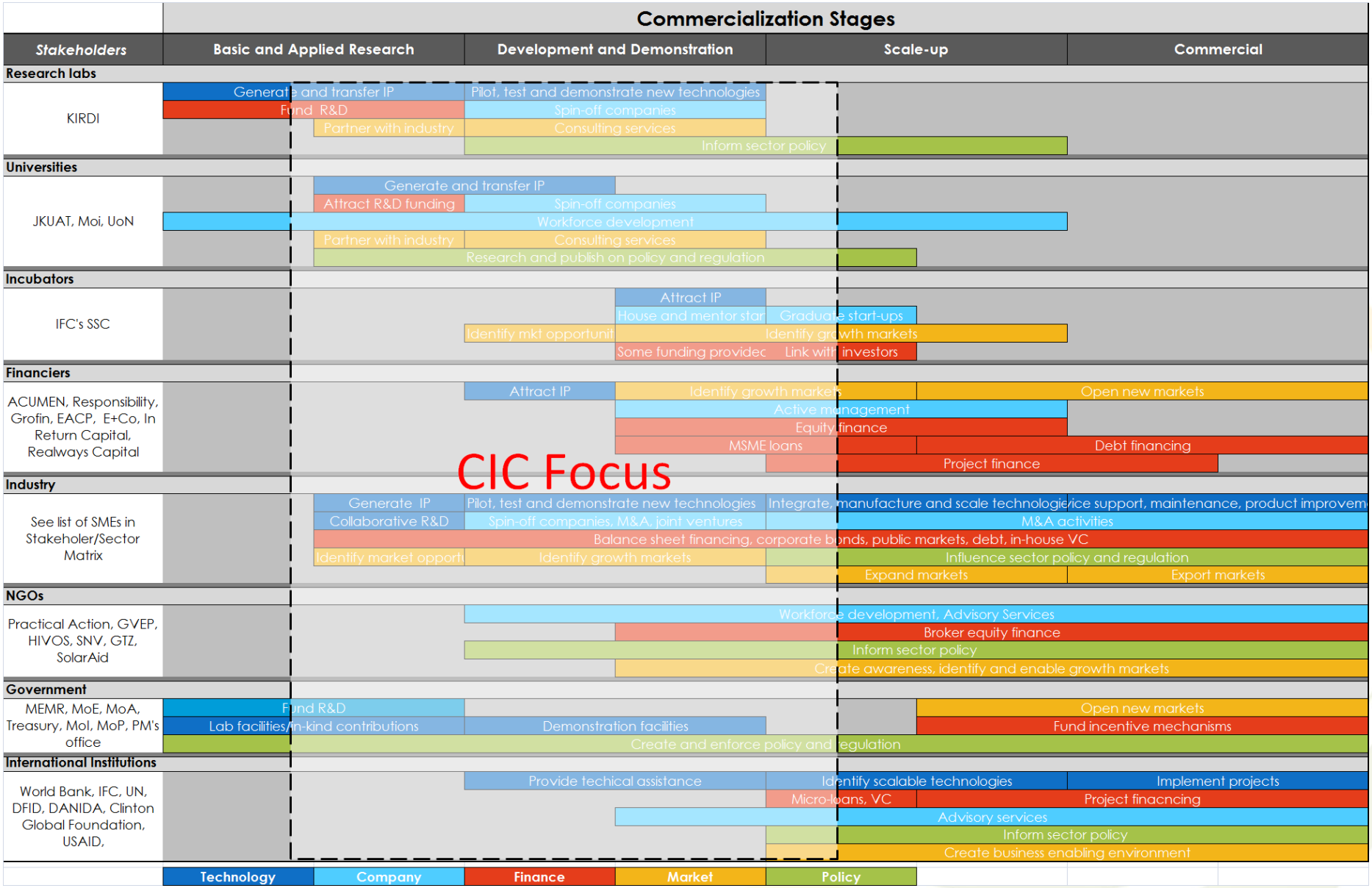
For more detailed information on the ongoing activities and initatives of the above stakeholders, please see Annex 4.

Government of Kenya's Commitment to Climate Innovation Centers:

The Ministry of Environment has spearheaded the development of The National Climate Change Response Strategy (NCCRS) through consultation across government. Section 7.2.6 of the NCCRS discusses the need to establish local Technological Innovation Centers that will be used to develop, advance and disseminate locally relevant technologies for climate change mitigation and adaptation.

3.4 Stakeholder mapping matrix*

Graphic illustrates ongoing activities of various stakeholders mapped to the innovation value chain. Gaps highlight areas of CIC focus. Overlap is indicative of potential partnerships and collaboration.



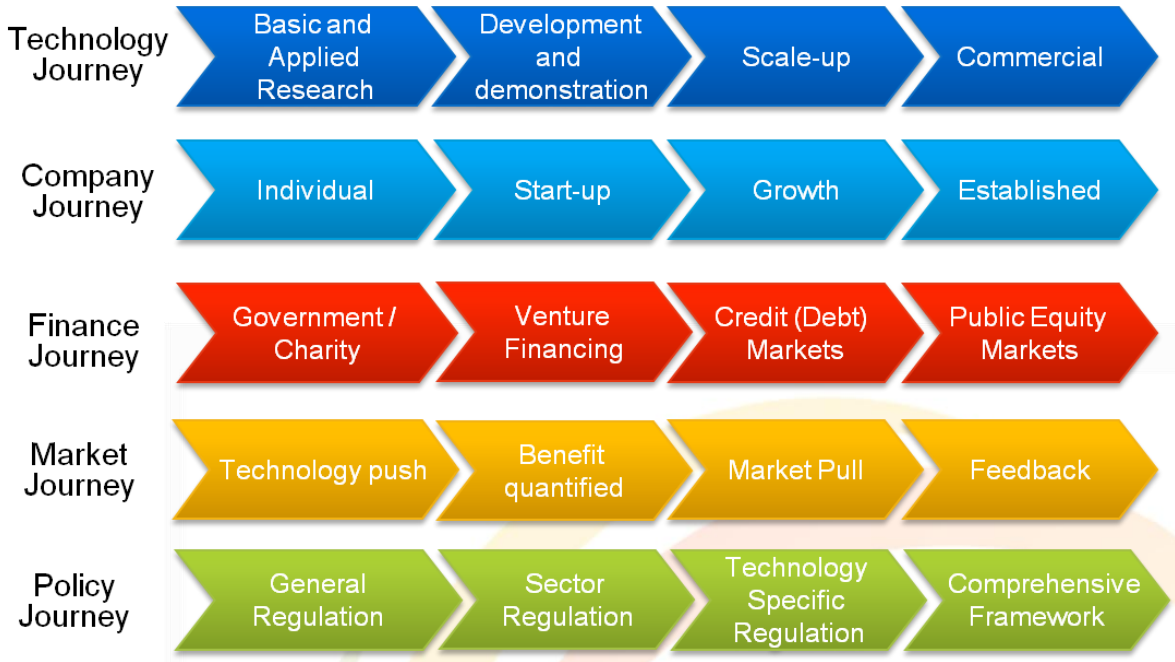
*Adapted by *info*Dev: Nortech

November 03, 2010

4.0 Climate Innovation Analysis: Kenya

4.1 Gaps along the value chain

Over an 8-month process, including two formal workshops, *info*Dev engaged with over 120 climate technology stakeholders to identify the specific gaps and needs of climate innovation in Kenya. The major gaps arise in five core areas[19]: technology, company, finance, market, and policy.



- Technology: *Supporting local and adapted technology innovation*
- Company: *Building a pipeline of workforce capacity and sustainable ventures*
- Finance: *Ensuring access to flexible risk capital*
- Market: *Creating new and expanding existing local and global markets*
- Policy: *Informing, linking and transforming innovative policy mechanisms*

These gaps were then mapped to corresponding needs which were then translated into the activities, programs and services of the center.

[19] Adapted by infoDev: Carbon Trust

4.2 Technology Gaps

According to stakeholder feedback, the greatest technology scale-up barriers in Kenya include limited information on the market application of technologies, lack of access to the physical equipment, tools and facilities needed to test new products and no clear regulatory mechanisms to support user adoption.

Technology *Supporting local and adapted technology innovation*	
Gaps	**Needs**
▪ Limited information to enable entrepreneurs develop appropriate technologies that are relevant to the market needs	▪ Market research that generates data on a regular basis to enable technology development in line with market needs ▪ Capacity building for local entrepreneurs on global innovations in climate technologies ▪ Ease of collaboration both with local institutions such as universities as well as international institutions on clean technologies
▪ Very early stage entrepreneurs do not have the tools and equipment to take their ideas to actual prototypes that can be used in proof of concept and market validation	▪ Access to facilities and equipment that entrepreneurs can use to develop prototypes ▪ Capacity needs for using high efficiency equipment ▪ Need to ensure the equipment is used as intended to avoid accidents or damage
▪ Limited, if any, standards for locally developed clean technologies.	▪ Collaborative development of standards with KEBS and NEMA for the sector
▪ Entrepreneurs also have limited access to information on parts to develop their equipment. ▪ Consumers have limited knowledge on cleantech options	▪ A comprehensive database providing entrepreneurs with information on cleantech parts sourcing as well as providing consumers with clean technology options to meet their needs
▪ Limited incentives to encourage the use of cleantech options.	▪ Well thought out incentive structures that encourage local entrepreneurs to develop clean technologies and that incentivize consumers to choose them
▪ Limited policy mechanism supporting the development and use of cleantech	▪ Need for a trusted industry player to support government in the development of supportive and enabling policy

Case Study: Technology Gap (See Annex 5)

CraftSkillz - Nairobi: Founded 2000

The company's wind turbnes are still being refined to meet market requirements with components still being developed for improvements. In particular, appropriate machinery and tools would help them improve their turbine technology further. The company also requires technical assistance from wind technology and marketing experts to help improve the product design and appearance.

4.3 Company Gaps

According to stakeholder feedback, the major gaps lie in new venture creation - encompassing financial capacity, human capacity, operational capacity and the ability to protect intellectual property.

Company *Building workforce capacity and a pipeline of sustainable new ventures*	
Gaps	**Needs**
▪ Lack of startup capital for high risk technology companies.	▪ Higher risk appetite capital with longer time frame supports the needs of a start up tech capital through commercialization and scale up
▪ Limited management expertise including accounting, marketing and sales	▪ Business management training for entrepreneurs including marketing and accounting skills ▪ Build entrepreneurial & talent capacity with entrepreneurship training, counseling and career advice
▪ Lack of space to work on companies' administrative activities	▪ An incubator space providing support services to entrepreneurs as well as access to computer and administrative tools
▪ Entrepreneurs often have limited ability to recruit the right management talent as their companies are in scale up mode	▪ Recruitment and training skills for entrepreneurs
▪ Limited knowledge of IP laws and procedures for registering patents	▪ Legal guidance on IP registration and protection as well as valuation.

Case Study: Company Gap (See Annex 5)

Goodlite - Thika: Founded 2009

As a startup, Goodlite requires significant training both on technical know-how on the design of products and general business development. The company has tried to approach specialized service providers for support but they are typically unwilling to work on start up projects, especially those targeting the bottom of the pyramid. Another key challenge has been obtaining capital to fund the product development. The entrepreneur has approached potential financers, including friends and banks, but most of them are more interested in funding products that have already been tested and proven.

4.4 Finance Gaps

According the stakeholder feedback, the leading gaps lie in flexible, early-stage risk capital and limited industry awareness among investors.

Finance *Ensuring access to flexible risk capital*	
Gaps	**Needs**
▪ Limited risk capital for proof of concept stage	▪ Access to higher risk funding for early stage high risk investments in technology
▪ Limited/no focused investors on cleantech and early stage tech	▪ Identifying potential investors, raising their awareness in the sector and matchmaking
▪ Lack of risk capital for market scale up in cleantech	▪ Dedicated resources as well as engagement with potential co – investors in funding the scale up stage
▪ Limited venture debt that improves return on equity	▪ Coordinated engagement with the investment community providing quasi – debt and venture debt needed
▪ Limited knowledge on financing options for cleantech amongst entrepreneurs and consumers	▪ Information on access to finance options for entrepreneurs and their customers
▪ Limited awareness amongst investors of the cleantech investment opportunities including technologies and market size	▪ Consistent and coordinated engagement with the investor community
▪ Limited funding for smaller investments needed in the proof of concept and prototype stages	▪ Dedicated and flexible resources to meet funding needs unique to cleantech entrepreneurs
▪ Relatively longer term investments in technology start ups	▪ Long term patient capital suited for the longer timeframe that technology companies need

Case Study: Finance Gap (See Annex 4)

WinAfriqu - Nairobi: Founded 2001

WinAfrique has found it very difficult to engage with investors as the company has to complete multiple due diligence efforts for each investor. In addition, there is currently significant mistrust between financiers and SMEs in Kenya. There is therefore a need to have a facilitator between financiers and entrepreneurs who both vets SMEs (hence the SMEs don't have to undergo multiple vetting processes for different financers) and in addition, plays the role of a match-maker.

4.5 Market Gaps

According to stakeholder feedback, the greatest gap lies in accurate market information (including the size and value of clean tech markets) and limited consumer awareness on climate technologies.

Markets *Creating new and expanding existing local and global markets*	
Gaps	**Needs**

▪ Limited market information such as size and value of various clean technologies	▪ Access to consistently updated market opportunity data for the various technologies
▪ Limited competitive analysis for various technologies that limits consumers ability to determine what is best for their needs	▪ Periodic analysis of competitive technologies that offers consumers with apples to apples comparison
▪ Limited market awareness of clean technology options	▪ Focused market sensitization on cleantech options, advantages and availability

Case Study: Market Gap (See Annex 5)

Nuru Light - India, Kenya, Rwanda: Founded 2008

A key barrier for Nuru Light has been the limited knowledge of clean tech options among end consumers. For example, in some markets, the company found that most people assumed that kerosene was their only option for lighting. There is, therefore, a need for extensive grassroots marketing to raise awareness on RE options among consumers.

4.6 Policy Gaps

The stakeholder feedback reveals that limited and lacking policy in Kenya inhibit innovation and uptake of new technologies. In addition, there is need to ensure quality standards on various clean technologies are put in place and enforced.

Policy *Informing, linking and transforming innovative policy mechanisms*	
Gaps	**Needs**
▪ Limited policy incentives for the development and adoption of clean technologies in the country	▪ Active engagement with policy makers on the right policies needed to support the growth and adoption of cleantech solutions
▪ Existing low quality clean technology solutions that "spoils the market"	▪ Support in the development of standards in the sector ▪ Enforcement support for NEMA and KEBS
▪ Trusted resource that policy makers can engage in determining the right policies for the sector	▪ "Industry association" role that can play the part of engaging and informing the government

Case Study: Policy Gap (See Annex 5)

Bi-Gas Energy Solutions - Nairobi: Founded 2009

A key challenge for the company's potential consumers is raising the significant upfront investment required to install a bio-gas plant. VAT, currently at 16%, adds a substantial amount to the final consumer costs. If the government were to reduce or remove taxes on renewable energy products and bio-gas in particular, prices on clean technologies would fall enabling more Kenyans to afford the products.

5.0 Kenyan Climate Innovation Center Model

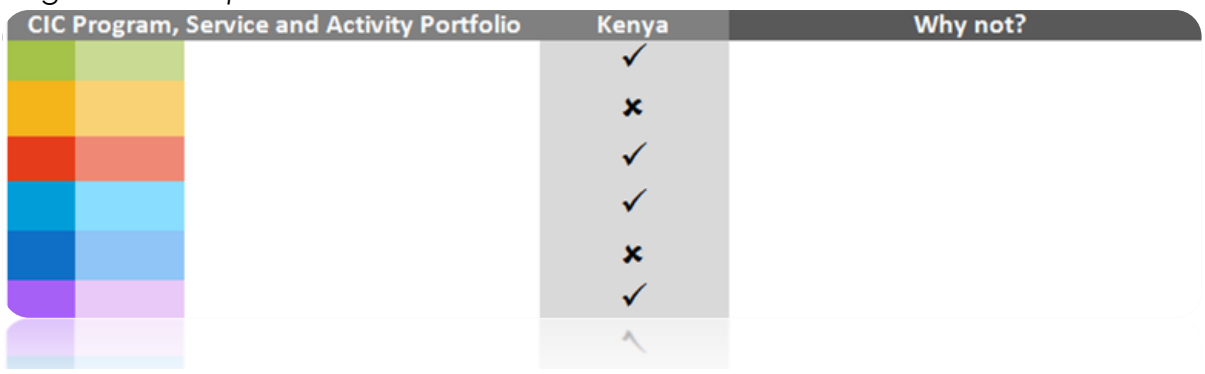
Stakeholders have designed this CIC model to respond to the myriad of gaps illustrated in Section 4. The model will address the majority of the needs of each priority sector through the following initiatives:

1. Providing access to highly flexible, early-stage risk capital.
2. Building innovative capacity through training, technical advice and mentoring.
3. Enhancing the innovation ecosystem by promoting favorable policy, technology partnerships and linkages to global networks.
4. Identifying and unlocking market opportunities through access to information.
5. Facilitating technological design, development and demonstration through access to equipment and facilities.

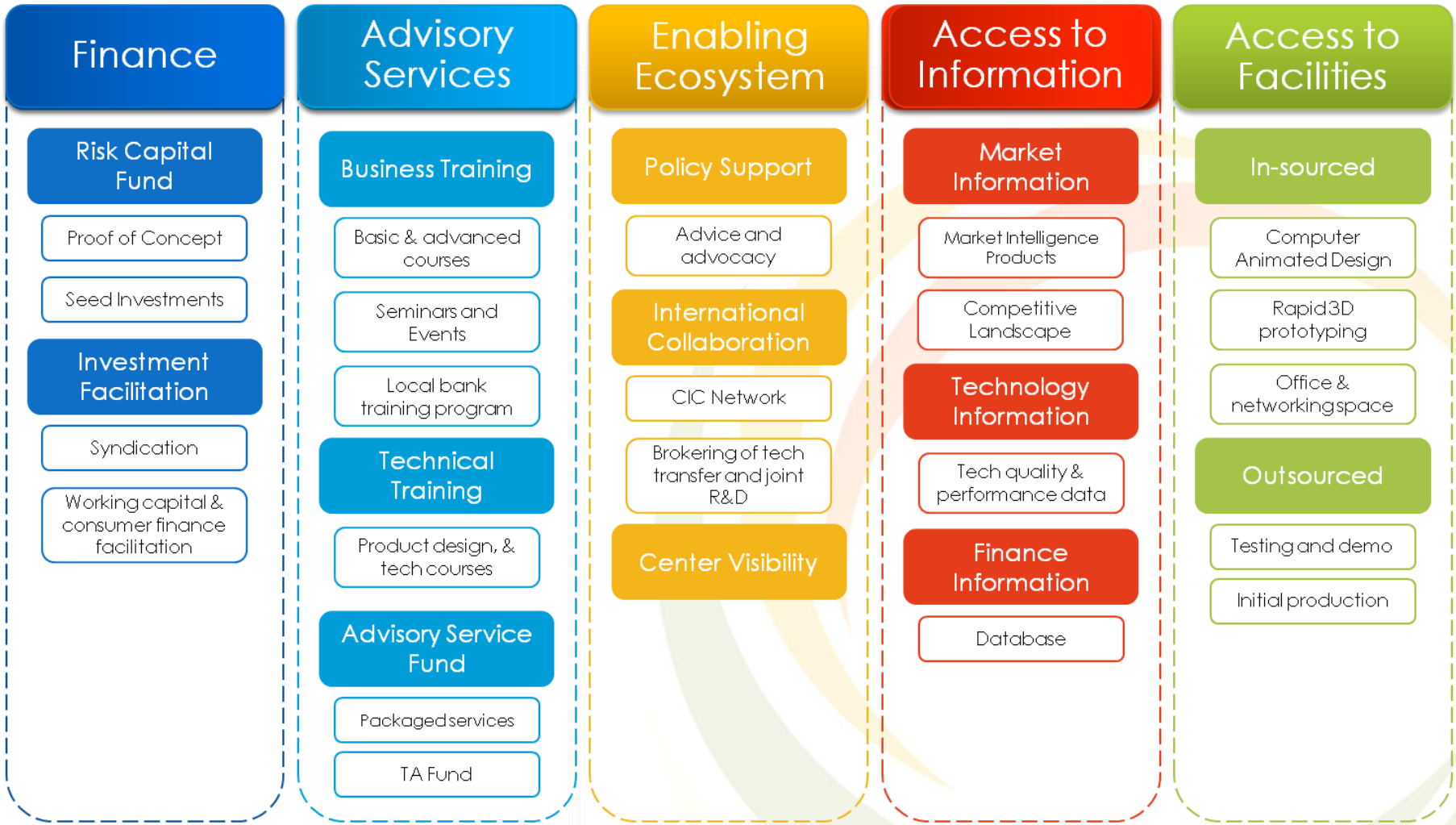
The Kenyan CIC model will, therefore, be designed with these five broad objectives specifically targeting the valley of death – where initiatives and activities from the government and private sector fail to overlap. The vision is to be holistic, ensuring that all gaps are filled, while also aggregating and leveraging existing players/resources in the sector. The five pillars of the Kenyan CIC's model (finance, advisory services, enabling ecosystem, access to information and access to facilities) each support a number of functions that are outlined in the diagram below.

However, there are a number of product and service offerings that the Kenyan CIC will not focus on. Further details are outlined in the annexes which draw on *info*Dev's experience in the CIC feasibility assessments and the CIC Global Good Practice Report.

See 'Why this not that' section in Annex 7 for more details on why specific program, services and activities were selected for Kenya based on a portfolio of different programmatic options that were considered.



CIC Model: Kenya



5.1 Vertical Pillars

The following section dives into each of the five pillars, outlining the specific activities and the needs, identified in section4, that are addressed. The scope of each activity is explained is greater detail in Annex 6.

Pillar 1: Finance

	Risk Capital Fund	Investment Facilitation
Activities:	▪ **Proof of Concept** (US$ 25K -100K) – Funding to allow entrepreneurs prove that a business idea/model is feasible e.g. through product development, prototyping and testing ▪ **Seed investments** ($100K -750K) – Financing for start-up companies to assist them move from the PoC stage to sustainability and/or able to attract other sources of funding	Facilitate funding sources by leveraging center's brand and relationships: ▪ **Syndicate** to leverage other grant, loan and equity investments including possible government funded grants for PoC investments ▪ **Facilitate working capital** financing from banks ▪ Facilitate **consumer finance** to ensure technology adoption in the market
Needs Addressed:	▪ Access to higher risk funding for early stage high risk investments in technology ▪ Dedicated and flexible resources to meet funding needs unique to cleantech entrepreneurs ▪ Long term patient capital suited for the longer timeframe that technology companies needs ▪ Higher risk appetite capital with longer time frame supports the needs of a start up tech capital through commercialization and scale up	▪ Identifying potential investors, raising their awareness in the sector and matchmaking ▪ Dedicated resources as well as engagement with potential co – investors in funding the scale up stage ▪ Coordinated engagement with the investment community providing quasi – debt and venture debt needed ▪ Consistent and coordinated engagement with the investment community
Finance Details:	Investment criteria: Will be developed by the investment team hired by CIC. The broad metrics upon which CIC will invest: ▪ Level of Innovation (and related portfolio mix strategy: balancing stars and question marks for risk management) ▪ Potential business viability ▪ Climate & social impact Funneling strategy: CIC will aim to have the PoC stage of investment feed into the Seed stage. Ideally, we project an annual ratio of: ▪ 12 PoC → 6 Seed	

Why this not that? Finance

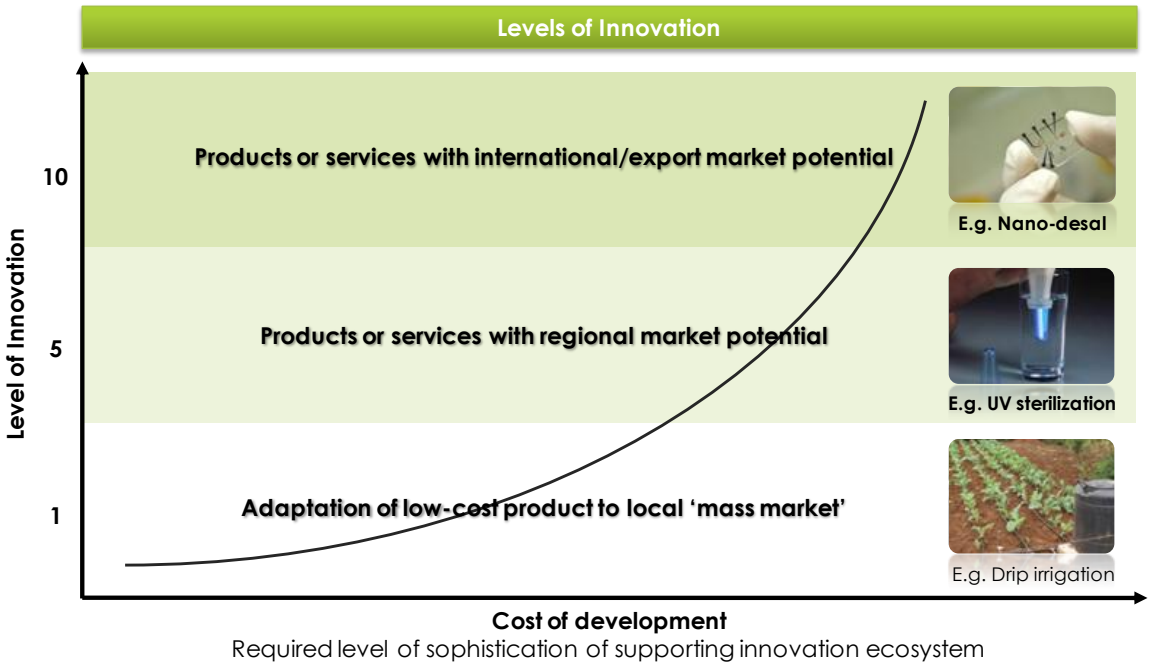
See Annex 7 for details on stakeholder rationale for deciding on the types of financing instruments the Kenya CIC would provide

Risk Capital Fund details:

PoC Investments	▪ Investment size: $25K - $100K ▪ 0% co-investment required, entrepreneur skin-in-the-game (cash and/or in-kind) required
Seed Investments	▪ Investment size: $100K - $750K ▪ Structure: Highly flexible and can involve equity, debt and/or convertible debt based on the companies needs over time ▪ Target for 30% portfolio to receive 1:1 co-investment ▪ Co-investment & entrepreneur skin-in-the-game in cash or in kind required.

Level of Innovation

The CIC proposes to invest in technologies with a broad range of sophistication, from technology that is adapted for the low cost mass market (often simplified and deconstructed) to technology that has the potential for significant export market revenues. While highly sophisticated technology companies can play a significant role in climate mitigation on an international level, more basic innovations have the power to be more locally transformative. It is important that the CIC works across the full spectrum of innovation. In the financial modelling of the center, the pipelines of technology companies have been differentiated based on an innovation scale of 1-10 (1 - Adaption of low-cost product or service for local conditions versus 10 - products and services with international markets and global scalability). Assumptions concerning the expected deal flow take this methodology into consideration See Annex 11.



Pillar 2: Advisory Services

	Business Training	Technical Training	Advisory Service Fund
Activities:	▪ **Courses** of strategic value to entrepreneurs ▪ **Toolkits** such as the IFC SME toolkit ▪ **Seminars** and other events organized monthly ▪ Training program for general client – potential revenue source	**Design, technical courses, equipment use, manufacturing** ▪ Training for entrepreneurs on the use of equipment at the facility ▪ Scheduled technical training targeted to various technical areas that the entrepreneurs are focusing on ▪ General manufacturing best practices training to help entrepreneurs professionalize their production work	Fund for **technical assistance** provided to CIC companies: ▪ **Revolving TA Fund** availed to partner service providers with entrepreneurs to provide to support venture creation, TA and business development ▪ **Packaged services** provided on a case-by-case basis ▪ **Accredited service provider**s who have required expertise ▪ **Partnerships with TA** organizations
Needs Addressed:	▪ Business management training for entrepreneurs including marketing and accounting skills ▪ Build entrepreneurial & talent capacity with entrepreneurship training, counseling and career advice	▪ Access to facilities and equipment that entrepreneurs can use to develop prototypes ▪ Capacity needs for using high efficiency equipment ▪ Need to ensure the equipment is used as intended to avoid accidents or damage	▪ Recruitment and training skills for management ▪ Legal guidance on IP registration and protection as well as valuation

Why this not that? Advisory Services

See Annex 7 for details on stakeholder rationale for deciding on the types advisory service programs the CIC should offer including how the center will address IPR issues.

Pillar 3: Enabling Ecosystem

	Policy Support	International Collaboration	CIC Visibility
Activities:	**Policy Advice and Advocacy:** ▪ Work closely with the government and interested parties to develop policies that support the development and adoption of clean technologies in Kenya ▪ Identification and strengthening of linkages with the Kenya Climate Change Response Strategy	▪ **International CIC network**: Work to expand linkages with other innovation centers, R&D institutes and incubators internationally ▪ **Brokering technology transfer and joint R & D:** (i) Act as a 'focal point' for international arrangements of technology transfer and joint collaborative arrangement on R&D through local institutions (ii) Broker role between local and international institutions, and help arrange standardized contracts and commercial terms	▪ Increase knowledge of the CIC ▪ Build the CIC brand to provide visibility and credibility to innovations emerging from the CIC
Needs Addressed:	▪ Active engagement with policy makers on the right policies needed to support the growth and adoption of cleantech solutions ▪ Collaborative development of standards with KEBS and NEMA for the sector ▪ Enforcement support for NEMA and KEBS ▪ "Industry association" role that can play the part of engaging and informing the government ▪ Well thought out incentive structures that encourage local entrepreneurs to develop clean technologies and that incentivize consumers to choose them	▪ Capacity building for local entrepreneurs on global innovations in climate technologies ▪ Ease of collaboration both with local institutions such as universities as well as international institutions on clean technologies	▪ Focused market sensitization on cleantech options, advantages and availability ▪ Consistent and coordinated engagement with the investment community

Why this not that? Enabling Ecosystem

See Annex 7 for details on stakeholder rationale for deciding on the types of activities the CIC would provide to help develop an enabling ecosystem

Pillar 4: Access to Information

	Market Information	Technology Information	Finance Information
Activities:	▪ Market intelligence products including: - Market size for various clean tech technologies - Current market penetration for those technologies - Information on ideal price points for large scale consumer adoption ▪ Provide information on **competing solutions** in the market	**Technology quality and performance data** including: ▪ Access to technical information on products they wish to develop, where to import parts, quality of various substitutes ▪ Information on materials ▪ Information materials sourcing, tax regimes, local availability	**Database** of financial support from various sources available in Kenya which aims to provide: ▪ Entrepreneurs with information on potential funding sources for scale up ▪ Funding sources with information on pipeline ▪ Consumer finance institutions with information on technologies emerging from the CIC ▪ Consumers with information finance institutions funding clean technologies
Needs Addressed:	▪ Access to consistently updated market opportunity data for the various technologies ▪ Periodic analysis of competitive technologies that offers consumers with apples to apples comparison	▪ Market research that generates data on a regular basis to enable technology development in line with market needs ▪ A comprehensive database providing entrepreneurs with information on cleantech parts sourcing as well as providing consumers with clean technology options to meet their needs	▪ Information on access to finance options for entrepreneurs and their customers ▪ Identifying potential investors, raising their awareness in the sector and matchmaking

Why this not that? Access to Information

See annex 7 for details on stakeholder rationale for deciding on the types of activities the CIC would provide to enable access to information

Pillar 5: Access to Facilities

Workshop Facility

Activities:

In-sourced:

- **CAD Lab**: The CIC will provide a computer lab with computer animated design software and training to assist in the development of virtual prototypes
- **3D modeling machine**: The lab also will house a 3D modeling machine (CNC Machine – Computer Numerical Control) to rapidly produce prototype models from CAD files.
- **Office and networking space**: The center ideally would be housed in an existing incubator facility to provide space for start-up companies and networking/meeting space



Out-sourced:

- **Testing and demonstration**: The center will partner with existing facility providers and industry in Nairobi and use TA and investment funds where needed to provide access to equipment needed to create working prototypes and for beta-testing.
- **Initial production and manufacturing**: The CIC will partner with MNCs and local industry/manufacturing firms to negotiate lower rates for first-run production and manufacturing of the CIC associated enterprises.

Needs Addressed:

- Access to facilities and equipment that entrepreneurs can use to develop prototypes
- An incubator space providing support services to entrepreneurs as well as access to computer and administrative tools

Why this not that? Access to Facilties

See Annex 7 for details on stakeholder rationale for deciding on the types of facilties and equipment the CIC would provide

Facilities & Equipment

The stakeholder engagement process identified a range of facilities and equipment to be utilized by local entrepreneurs. Annex 5 provides a full list of requested equipment that can be categorized as follows;

- Workshop/ Machining equipment – lathes, grinders, drills etc
- Computer lab facilities and software – with prototype modeling functional eg CAD.
- Electronic lab – Oscilloscope, Multimeter etc

The equipment "wish list" provided from stakeholders is consistent with equipment provided at similar centers elsewhere. However, it is important that the center does not replicate equipment that is already available within the local market. Given the diversity of the clean tech space and the entrepreneurs to be serviced it is important to invest only in facilities that are "core" to a broad range of activities. It is envisaged that specialist equipment would be utilized on a "pay for use" basis.

With these parameters in mind, two scenarios for center facilities include;

Option 1 – Basic equipment in each category – Estimated cost $300,000.

The center would provide basic equipment in each category to offer a physical space for machining, electronics, computing and laboratory work. Advantages of this approach include: facilities will attract customers; the equipment is located on site for ease of use and the learning opportunities/ ability to provide training courses on equipment use. Disadvantages include: maintenance/ servicing, the need to have specialized staff to demonstrate and guide the use of equipment and the risk associated with purchasing inappropriate equipment or duplicating facilities already available.

Option 2 - Virtual prototyping with outsourcing of physical production – Estimated cost $90,000

The center provides a computer lab with prototyping software to model concepts that are then produced by outsourcing to local artisans and manufacturers. This ensures that the center avoids purchasing unnecessary equipment and offers greater flexibility. However, this approach limits training opportunities to software programs and could prove inadequate if local capacity is not available. However, a benefit of the CIC network is that production could be sourced through service providers to centers in other locations.

The financial model presented in this business plan is based on option 2. However, it is important to monitor the availability of local services as the center becomes operational and "physical" equipment may be needed to be housed at the center if local availability is lacking. We have conducted an assessment of locally available equipment and possible partnerships to ensure that CIC members have access to the relevant equipment. See Annex 6.

*Hagerstown Community Colleague (MD, USA) has recently launched a renewable energy focused center for training and business incubation which houses equipment similar to that requested as well as more specialized equipment. Tech Shop (CA, USA) also offers access to similar equipment for startup entrepreneurs www.techshop.ws

6.0 Implementation Plan

6.1 Implementation plan

The diagram below shows the staged roll-out plan for the Kenyan CIC based on *info*Dev's experiences implementing similar programs and centers. Year 1 will be a critical time of securing requisite funding, establishing the infrastructure and making key hires. The majority of the CIC programs will be launched and developed between years 2 and 5. Finally, the program will be scaled up after Year 6.

6.2 Management plan

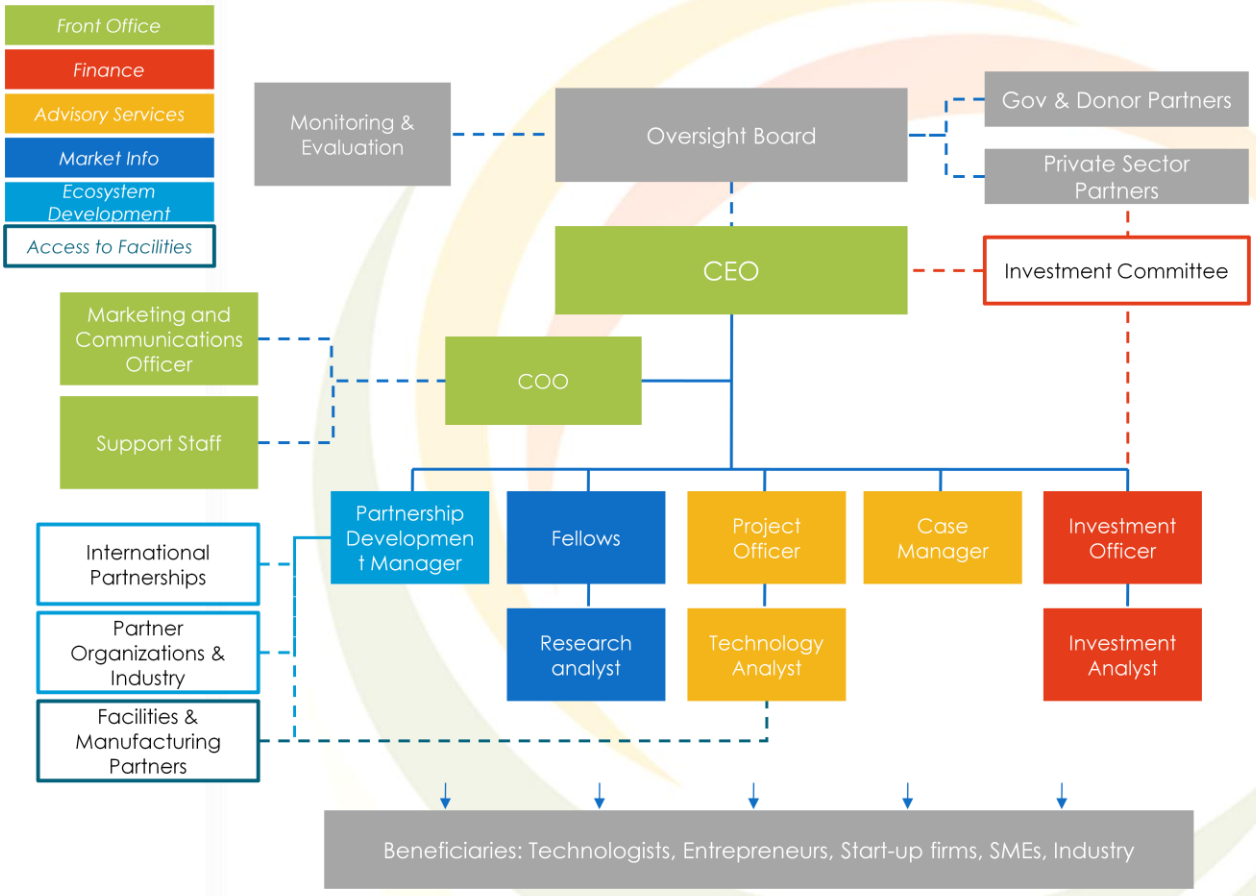
Governance

Board of Directors: Based on International good practice, the board of directors will include 9-10 members to be composed of the CEO, the initial funding partners, KEPSA Chairperson, and nominated independent directors representing the various stakeholder sectors. The independent directors ideally would be leaders relevant to the climate tech sector in Kenya, with the board ideally having a majority of participation from the private sector. Directors would rotate every 2-3 years. There may be a restricted number of board seats for private sector/industry participants that sponsor the CIC center through charitable donations. The Board, once established, will setup an advisory body that over time may be split into specialties based on technology verticals. For example, the CIC may have an advisory board on 'Bio-energy'.

Investment Committee: The CIC will establish an Investment Committee of private sector investment experts to screen and approve all CIC investments. This will ideally be a committee of 4-5 individuals with principal investment experience in Kenya and backgrounds in the commercialization of technologies and associated business models.

Incorporation & Ownership: The CIC will be a non-profit entity, incorporated in Kenya, and is likely to be incorporated either as a Trust or a Private Company. Seed finance which will make up the majority of the center's budget will be provided in the form of equity or debt (or a combination of both) that will be repaid. Therefore, there should be a well-defined legal, long-term ownership of entitlement to financial flows returning to the Center. Foreign inward remittance of funds must also be possible for the center. Additionally, charitable, scientific and institutional tax registration is possible for the center, which gives the organization and donors tax benefits. Upon finalizing the investor base, the CIC will determine the specific legal structure for the center. The regulation regarding company incorporation in Kenya is quite complex. It would therefore be inappropriate to finalize an incorporation structure without involving the investors.

Organizational Structure



In accordance with the organizational design, program budgets will be managed by the appropriate supervisors. The Investment Officer will manage the budget for most funding activities (including seed investments, investment syndication, working capital facilitation and the investment database) with direct oversight from the CEO who will take a hands-on role in investment activities. Scouting, sourcing and due-diligence of potential deal-flow will be conducted with strong support from partnership development staff and center affiliates. In this way, the center's partners help reduce the operational and staffing costs of the CIC while also benefiting from access to financing.

The Case Manager will manage the budgets for the PoC investments, TA Fund and packaged services given all of these activities are closely related. The Project Officer will manage the budgets for the various training programs and the in-sourced facilities, while the Partnership Development Manager will be responsible for the brokering and collaboration activities budgets. The Fellows will manage the policy advocacy and access to market information. The CEO will provide strategic guidance for the center, report to the board and be directly engaged in fund-raising activities for years 5+. The COO will provide oversight for spending activity, as well as manage the budgets for human resources and operational overheads.

Over and above the operational oversights, the CIC's ownership will be managed by its Board of Directors which will represent the interests of its key stakeholders through board level representation. Rules for Board level representation will be constructed in co-ordination with major donors and key partners, such as the GoK, but as discussed, will balance expertise and ownership. In addition, the CIC can consider the establishment of a Trust for housing any money donated for the CIC operations. The Trust can help protect the interests of donors by allowing them to appoint trustees who release funds to the Board on annual basis and on the achieving of pre-determined milestones.

Staffing requirements

The illustration below outlines the staff requirement in Year 0-1 and in Years 1-5. See Annex 9 for more details.

Role	Description	Year 0-1	Per Year (1-5)
Case Manager	Oversees proof of concept phase and supports technologists, entrepreneurs and enterprises in accessing advisory service funds and providers	(0.50)	(1.00)
Investment Officer	Oversees financial products of center, vets and conducts due diligence on investments	(0.25)	(1.00)

Investment Analyst	Support functions of financial products of center	(0.75)	(1.00)
Project Officer	Supports various activities relating to capacity building services including training and events	(0.50)	(1.00)
Partnership Dev't Manager	Makes links between strategic national and international partners, builds network of accredited service providers including facilities	(0.50)	(1.00)
Research Analyst	Tasked with conducting research for center's market information programs	(0.50)	(1.00)
Technology Analyst	Supports functions relating to a required technical, engineering or design expertise	(1.00)	(1.00)
Fellows	Experts and thought leaders affiliated or on assignment with center tasked with preparing reports, articles and policy advocacy	(0.50)	(1.00)
Chief Executive Officer	Manager of center who reports to a board and oversee investments, enterprise development, budgets and fundraising for center	(1.00)	(1.00)
Chief Operating Officer	Oversees operational aspects of center including projects related to capacity building, analytical products and partnership development	(0.00)	(1.00)
Marketing / Comm. Officer	Coordinate branding, marketing, communications and outreach for center	(1.00)	(1.00)
Support Staff	Includes administrative staff, HR, IT	(1.00)	(1.00)
	TOTAL:	(7.50)	(12.00)

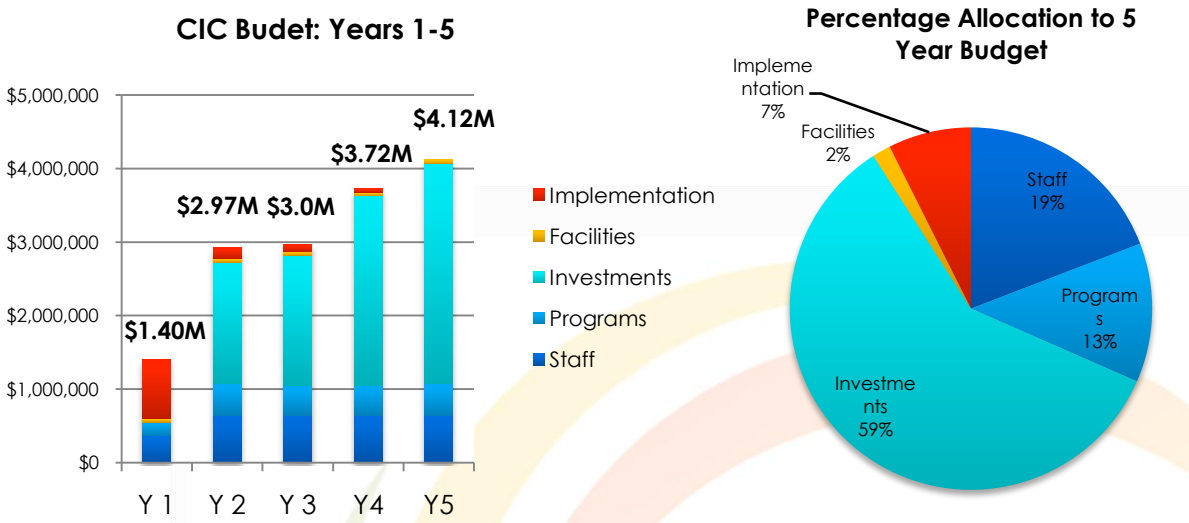
6.3 Implementation oversight and governance

Based on *info*Dev's track record and experience in implementing such projects in over 50 developing countries, the implementation of the CIC would be managed by the trustee of the funds. This oversight is critically important to ensure that fiduciary responsibilities are maintained, timelines and project plans are followed, management and oversight are established and that the required expertise and global best practice are available at all times. Implementation assistance would ideally be conducted via a RFP process and include at least one local partner. Other issues to consider throughout the implementation phase include reassessing the center's focus (programmatic offerings), investments, objectives/impacts and governance structure as appropriate.

7.0 Financial Plan

7.1 Budget Year 1-5

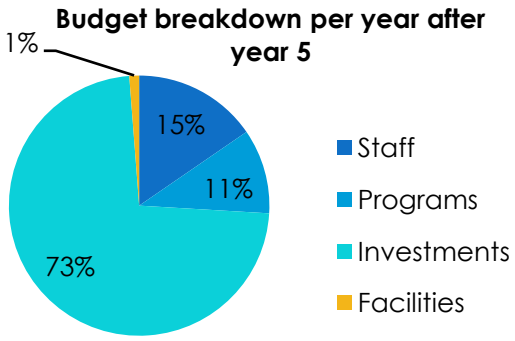
The included graphics illustrate the budget allocation for the CIC's first five years of operations totaling USD 15.2 million which includes the implementation, launch and scale-up of the CIC over the first five years. The first year will primarily be dedicated to implementation and establishing the CIC infrastructure and will therefore require a budget of USD 1.4 million. The subsequent years will require a budget of USD 3.0-4.1 million in Years 2-5 to support the CIC's investment, capacity building and access to facilities programs. For more details on the financial plan, see Annex 10.



7.2 Second round funding: Years 6+

The Kenyan CIC's second round of funding will depend on two critical factors: (i) institutional performance and impact in Years 1-5 and (ii) whether the CIC is eligible for future climate change financing under the UNFCCC climate change accord. Assuming that the CIC meets or exceeds performance expectations, *info*Dev is projecting two scenarios for capital requirement. In a business-as-usual scenario, CIC Kenya will require USD 21million in Years 6-10. In a scenario in which international climate financing scales up significantly, the Kenyan CIC could assume an annual budget of approximately USD 21 per year. While these projections are based on valid cost assumptions, it is assumed that as a center for innovation, the CIC will need to be quite flexible to evolve with the needs of the market and the climate. Realistically, the CIC will go through a rigorous reassessment in Years 4-5 to refine the strategy and understand the funding requirement.

Projected budget years 6+: Business as usual



The project budget after the 5th year assumes that the CIC will successfully achieve all objectives and outcomes over the five year period (phase 1). The CIC will then adopt an annual operating budget of the last year of the first phase (Year 5: $4.12M). This will be offset through revenue derived from loan principle and interest repayments, as well as investment exits and other revenue flows as decided by the management team. Net operating costs for the center are calculated below. The revenue model assumes returns based on likelihood of success, company growth rates and years to exit. More details can be found in Annex 11.

Projected cash flow:

Years 6-10	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Operating costs	$4.12M	$4.12M	$4.12M	$4.12M	$4.12M	**$20.59M**
Investment returns	($0.44M)	($1.67M)	($1.72M)	($2.73M)	($2.88M)	**($9.59M)**
Net operating costs	$3.64M	$2.31M	$2.30M	$1.36M	$1.24M	**$11M**
Cost recovery	11%	40%	42%	66%	70%	-

Based on projected revenues, the CIC management team will be required to raise additional funds in year five totaling approximately USD 11 million for the entire operations for year 6 to 10. This will produce the following indicative impact over the full ten-year period:

Impact by year10	Enterprises created	Jobs generated	Cost per job	Center Sustainability
Impact	150	25,000	USD 850	70%

Projected budget years 6+: Eligibility for international climate finance

It is envisioned that CICs could become eligible for international climate finance under the technology mechanism of the UNFCCC climate change accord. If eligible, such funding would contribute to the significant scale-up of the CIC's operations after the fifth year, including increasing staffing, program budgets, investments and applied R&D funding. At this scale, the CIC would cost approximately $21m per year and generate revenues of $10-15m per year (at an expected cost recovery in the range of 50-75%) from years 6 to 10.

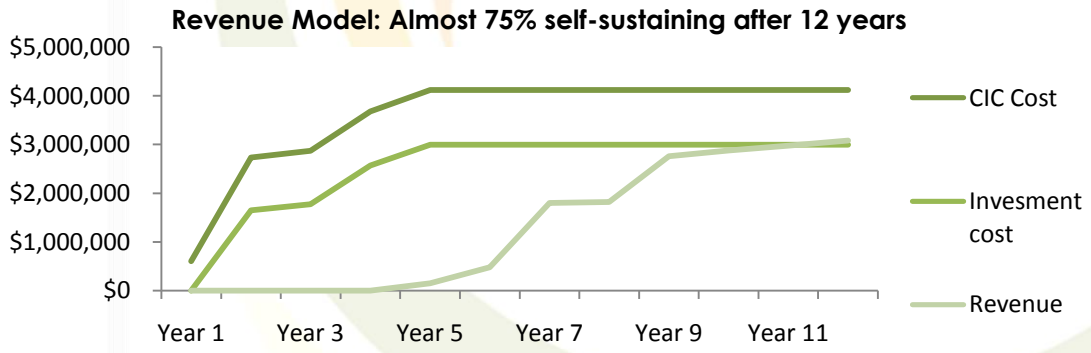
Pending such funding, the center would increase in both scale (size of current programs) and scope (additional programs). Additional programs to be considered include:

- Strategic Applied R&D Funding: The CIC could make grants available up to USD 2m for international collaborative research projects to solve highly specific technical barriers to technologies that have a wide-reaching impact on Kenyans.
- Demonstration Project Funding: The CIC may provide larger-scale financing than currently offered to assist in the financing of demonstration projects and field tests. Such activities would involve highly innovative technologies that require large capital injections to prove a concept at a large scale and are often highly risky.
- Workforce Capacity Building: The center could look to expand its current capacity building courses to sponsor and fund larger workforce development activities within Kenyan universities.
- Physical Facilities: The CIC could look to build its own facilities and open the use of such facilities to the wider community based on a 'pay-per-use' model. Such a facility would house a range of prototyping and manufacturing equipment, including office and networking space.

7.3 Sustainability

The CIC will work for partial self sustainability, largely through its investment activities, which are anticipated to be able to cover 70% of operating costs in year 10 (75% from year 12 onwards), and by introducing other revenue streams, once a strong value proposition has been achieved in the early years. The detailed assumptions driving this revenue are shared in Annex 11.

It takes time to realize investments in early stage companies and it will take from 2 to 8 years to achieve exits and, therefore, revenues. Growing from USD 0.15million in year 5, the anticipated investment returns will reach a steady state of USD 3.08 million in years 12 and onwards.



The revenue model strategy has two distinct benefits for the CIC and companies it assists.

1. The ambitions of both are aligned, sharing the common objective of building a significant business. Actions that benefit the company also maximize the return to the CIC.
2. Importantly, the success-sharing model builds a sustainable future for the CIC, with a model that is scalable and replicable. Returns from company success can be used for incentives to management, service providers and incubators providing crucial support.

7.4 Co-investment and leverage

Co-investment for all investments will be sought from affiliated investors, some of whom will be members of the investment committees. At this stage only modest co-investment is anticipated in terms of 30% of the seed investment portfolio attracting 1-to-1 co-investment. As the value proposition of the CIC grows, this figure will increase over time. Currently, investors in Kenya do not have a high enough risk tolerance to invest in such an early stage fund. Again, leverage requirements should be revisited in years 4 and 5, when there may be more interest in co-investment based on the CIC's track record. It is estimated that in addition to leverage from direct investments, the center would seek to raise up to 50% or $7m of the cost of the center from other cash contributions (namely sponsorships) and in-kind donations and discounts such as office space, access to facilities, equipment and other services.

Other revenue potential:

*info*Dev has investigated other potential revenue sources, which may be developed over time. These revenue streams will be evaluated and developed in years 3 to 5, once a strong value proposition has been achieved. It is projected that via the below revenue mechanisms, the CIC can aim to cover a portion, if not all, of the remaining 25% of the budget at year 12, potentially making the center wholly self-sustainable. It is assumed that management would periodically revisit the business model of the center to identify sources of funding where appropriate. Such sources of revenue could include:

- Revolving TA fund: It is assumed that a significant portion of the technical assistance fund would be paid back by beneficiaries over time. This has not been calculated in the current revenue model for the center but it can be assumed that all monies repaid to the fund will be disbursed for additional TA grants, even within the first 5 years.

- Carbon Credits: The CIC and its beneficiaries will ideally apply for available carbon credits as a potential revenue source. The policy advisory and market information services of the center should aim to identify such sources of funding.

- Financial advisory services: By brokering finance as a service, the CIC can generate revenue as a percentage of the finance secured. This may be taken in cash or re-invested in the investee's business. The revenue potential for such a service should be explored in the future when demand for the CIC's financial services is projected to increase.

- Facilities leasing: The CIC will explore the adoption of a pay-per-use model for the center's facilities. In particular, the CIC will house a CAD Lab and a 3D modeling machine – entrepreneurs and other industry players would potentially access the use of these facilities for a fee, which in turn would generate revenue for the CIC.

- Sponsorship: The CIC will recruit corporate sponsors that will attract private sector participation. Industry and the private sector will benefit from this affiliation by gaining, among others, access to SME activity, technology innovation and market research.

- Tailored Training: In later years, the CIC may be able to monetize its market and technical knowledge. The capacity building team will develop training models that can be provided to industry at a fixed fee. Charging for training will be explored in years 3-5.

- Consulting work: The center may in time, leverage in-house talent and resources to provide consulting services to third parties for a fee. Lessons learnt, relationships built and expertise accumulated by the CIC's work would provide a wealth of information for private sector, government and development partners.

7.5 Funding/Fundraising plan

For the CIC's operations in Years 1-5, *info*Dev is raising a cumulative USD 15.2 million. *info*Dev intends to secure commitments for 100% of the required capital in advance of launching the CIC. Securing this funding is important to ensure that the CIC remains adequately resourced throughout its maturation period. *info*Dev is targeting investors with an aligned mission to the CIC. The ideal investor base would consist of 2-3 funders of both cash and in-kind contributions.

Investment in the Kenyan CIC presents a clear value proposition to prospective investors:

- Pipeline: CIC investors will be exposed to an on-going stream of climate technology ventures that are screened through the finance and advisory services activities of the CIC. While the CIC will use its own criteria to select beneficiaries, the CIC investors will have the opportunity to learn from and potentially collaborate with any enterprises that have contact with CIC.

- Knowledge: CIC investors gain considerable knowledge from their association with the Center. In addition to published research and market analysis, investors will have access to in-depth R&D and technical activity, as well as cutting-edge information Kenya's economy.

- Partners: CIC investors gain access to the complete network of CIC partners and stakeholders from R&D facilities and universities to industry and government. These relationships will be strategically valuable to any investor with programs related to, among others, climate change, clean technology, national resources and sustainable development.

- Measured outcomes and impact: CIC investors will benefit from transparency concerning the outcomes of the CIC activities. In addition to providing investors with regular performance reports, the CIC will provide synthesized data and evidence on economic and social returns to the investors' contribution.

- Development goals: In addition to directly measureable impact, CIC investors will be responsible for facilitating real transformation in Kenya's climate technology space. It is expected that these impacts will be in alignment with the investors' core mission.

Stakeholder "In-Kind" Support

Various government and private stakeholders have showed strong demand and support for the CIC. When established, stakeholders have offered their support for the center in various forms - either financially or in-kind.

International agencies, such as UK-DFID and DANIDA could be provide direct funding support as well as facilitating global interactions with potential international partners.

The *private sector* has been a great asset to the formation and functioning of CIC. KEPSA, in particular, will provide linkages to the private sector in Kenya, including finance institutions, manufacturers and specialized service providers.

Academic and research institutes such as KIRDI, have been equally enthusiastic and supportive of the CIC. These institutions are willing to provide technical support, as well as in-kind supports such as hosting the center, and use of its research labs and facilities.

Government agencies such as the ICT Board, MEMR and the Ministry of Industrialization are willing to provide in-kind support in the form of incubator space, which entrepreneurs can use as offices or workshop space.

7.6 Implementation oversight and governance

Based on *info*Dev's track record and experience in implementing such projects in over 50 developing countries, the implementation of the CIC would be managed by the trustee of the funds. This oversight is critically important to ensure that fiduciary responsibilities are maintained, timelines and project plans are followed, management and oversight are established and that the required expertise and global best practices are available at all times. Implementation partners would ideally be sort via a RFP process and include at least one local partner. It is recommended that the business plan for the CIC should be updated and modified by implementation partners and management as the center is rolled out and continuously reevaluated throughout the center's operations.

Hosting of CIC

*info*Dev does not advocate the hosting of the Kenyan CIC in one institution over another. However, based on *info*Dev's international experience in project implementation of PPP initiatives, it is recommended that the institution be governed at arm's length from the government and have a majority of board participation from the private sector (as discussed in the governance section of this report). Nevertheless, government will play a crucial role in the center's success, and throughout implementation all relevant ministries will be consulted and informed of progress.

Other implementation issues to consider

- Outstanding governance questions including board membership, management structures and ownership of the CIC which will be addressed in detail when founding members are identified.
- Investment governance and structuring including design of financial mechanisms, oversight, staffing and partnerships with existing financial institutions.
- Staffing review including reassessment of in-house versus outsourced staffing requirements for each business line.
- Technology priorities including understanding which sectors have the greatest demand for the CICs services and how the Center's technology specializations and expertise will evolve over the first four years of operations.
- Intellectual property rights including addressing ownership issues amongst the Center, affiliates, partners and investees.

- Performance metrics including the priority impacts and objectives the CIC will measure over the first 5 years.

Exit Strategy:

While donor money will be necessary to seed the CIC over the first phase, it is expected that the CEO and management team will seek contributions (both cash and in-kind) from local stakeholders for operations after year five. The aim for donor funding is to act as a catalyst to establish the CIC as a proof point, generate successes and demonstrate that it is a valuable program for both the Kenyan government and private sector to fund in the long term. This way, donors will exit as major funders of the CIC after the first five years, with the private sector and local public sector supporting operations thereafter.

8.0 Outcomes and Impact

8.1 Technology impacts

The CIC aims to accelerate the growth of innovative climate technologies in Kenya and, as a result, its main social, economic and environmental impacts will be affected by the technologies the center supports. The table below highlights the indicative impacts and outcomes of the potential products and services the center would look to support. A base case assumes a low level of innovation and signifies impact if technologies were rolled-out as of today's standards, prices and complexity. Higher levels of innovation and best case scenarios assume a more radical level of innovation and, as a consequence, higher impact levels. The center will aim to support innovations across this spectrum of risk and sophistication, depending on the market opportunity and deal flow.

Technology Impacts:

Outcomes after 10 years based on 5 years of CIC investment and operations[20]

Indicative Impact & Outcomes				
Level of Innovation (multiplier)	**1-3 (1X) worst case**	**4-6 (2X) base case**	**7-10 (3X) best case**	**Assumptions**
Access to energy				
Off-grid kWh produced	541,200,000	1,082,400,000	1,623,600,000	Based on $0.25 per kWh
MW installed capacity	29.4	58.8	88.8	Based on installed MW of off-grid solar systems
Off-grid access # of households	84,000	174,000	264,000	Based on 4 people per household
Off-grid access # people	348,000	702,000	1,056,000	Based on 6135 kWh household consumption
Access to water				
Increased access to clean water in KL	16,107,000	32,214,750	48,322,500	Based on $2.1 per KL
Access # households	36,750	73,500	110,250	Based on 4 people per household
Access # of people	147,000	294,000	441,000	Based on 30L consumption per person per day
Decreased # of deaths from diarrhea	284.25	568.5	855	Based on % increase access and 7,500 deaths from diarrhea per year
Access to food				
# households with access to cheaper/ better quality food	14,250	28,500	42,750	Based on % food expenditure of household income

[20] Technology impacts have been calculated by aggregating the 10 year projected revenues of CIC ventures that have received financing over the center's first five years of operations. These cumulative revenues have been divided into 3 sectors. This model assumes that 50% of the products/services sold by CIC ventures are energy related, 25% water and 25% agriculture. CO2 mitigated has been calculated based on energy access figures including an additional % attributed to mitigation benefits from clean water and food access. Levels of innovation have been used to multiply the impact of the technologies on the communities based on the three scenarios of the sophistication of the products/services produced by the CIC.

% Increased yield per hectare	17%	26%	53%	Benefit of new technology on agricultural processes
# farms with improved agricultural efficiency	7,500	15,000	22,500	Based on % of population with smalls-scale farms.
Mitigation potential				
CO2 mitigated (tons)	495,000	993,750	1,488,750	Based on coal CO2 emissions at 1.47 kg/kWh
Comparative carbon price (USD)	31	15	10	Compare to market rate of approx. USD 17 per ton

8.2 CIC performance Indicators:

The graphic below presents a snap shot of the performance outputs to be achieved by each program over the CICs first four years of operation.

Indicator (Direct)	Target	Spill-over effects	Verification
Output 1.1: Financing and Enterprise Development			
Create a value chain of risk investment instruments to bridge 'valley of death' funding gaps and syndicate existing sources of finance to create a pipeline of investible and scalable enterprises that deliver climate mitigating and adapting solutions both locally and internationally			
Proof of concept grants delivered	42	Increased innovative activity in universities and communities Better commercialization rates of domestic R&D	Data from CIC Annual Report
Seed investments made Total financing disbursed Survival rate of enterprises	35 $9000,000 75%	Increased jobs and economic output in surrounding communities including access to innovative products and services	Data from CIC Annual Report
Leverage amount achieved	up to 100% on 30% of portfolio up to $3M direct financing	Increased presence of early-stage investors in market	Data from CIC Annual Report
Other potential leverage sources	In-kind: Up to $3m Sponsorship: Up to $3m Private sector: $ 6m Total leverage: USD15m or 100%	Crowd in other sources of investment and ensure local ownership	Data from CIC Annual Report
Financial service provider partnerships made	25+	Creation of new investor networks - increased investment opportunities	Annual investor focus groups and interviews
Working capital and consumer finance loans facilitated	40+	Increased access to follow-on funding Increased access to funding for customer purchase order	Internal data
Output 1.2: Capacity building and human capital			
Enhance local capacity to innovate in the climate technology space through programs that provide access to critical know-how and expertise and build new workforce capacity and entrepreneurial culture where needed.			
Basic and advanced business courses delivered	54 courses 1,000 participants	Increased workforce capacity of business skills, knowledge and know-how	Course surveys
Seminars held	27 events 900 participants	Increased knowledge and networks built on climate technology in Kenya	Seminar surveys
Local bank training sessions	85 sessions 42 banks increase lending	Increased capacity of local banks to lend to consumers buying climate related products and services	Course surveys

National event attended by	100national and 25 international guests	Raised profile of climate activities in-country and promotion of local innovations to export markets	Event survey and data collection
Output 1.3: Access to advise, technical assistance and related networks			
Finance and enable access to a network of professional technical assistance, advisory services, IPR support and facilities.			
Ventures provided technical assistance	77	Increased success rates of companies and increased collaboration with service providers	Data from CIC Annual Report
Number of service providers accredited	50+	Increased number and quality of existing service providers in community	Focus groups and interviews of mentors
Facility provider MOUs signed	5	Increased access to infrastructure necessary for technology development	Internal data
Output 1.4 Ecosystem development including access to market information and policy reform			
Facilitate the development of an innovation ecosystem through forging relationships and partnerships between key ecosystem members and supporting the innovation process through supply side (technology) interventions and demand side (market and policy) initiatives.			
Technology database accessed by	500 users per months	Increase entrepreneurial opportunity and awareness of technologies in climate space	Database statistics
Number of technology and research partnerships facilitated	20	Decreased fragmentation of domestic and international R&D activity	Data from CIC Annual Report
Technology quality and performance data database users per month	500	Decreased product failure risks for innovator and investors Accelerated demonstration and deployment of higher quality products and services	Database statistics
Number of international CIC partnerships developed	5	Increased formation of R&D and B2B linkages globally, transfer of knowledge, know-how and experience	Data from CIC Annual Report
Number of analytical reports produced per year	4 Market summaries 2 Trend reports 1 Competitive landscape database and yearly report	More active market due to increased information including new products launched, companies created, industrial activity and trade sales	Customer satisfaction surveys
Investment database users per month	1,000	Increased knowledge of available financing, facilitating investments and match funding opportunities	Database statistics
International policy fellowships	9	Help design and reform new policies that support innovation, entrepreneurship and the acceleration of scale-up of new technologies	Government data
CIC Internet visitors per month	10,000	Increased awareness and knowledge of CICs products and services	Internet usage statistics
Output 1.5 Jobs and social dimensions			
To create and maintain the growth of high quality sustainable jobs, the increasing of disposable income and enhance the livelihood of BOP, especially marginalized demographics including women and youth.			
Center FTE (full time equivalent) Jobs created	12		
Direct jobs	928		
Indirect jobs	3712		
Total jobs	4652	Creation of higher paying sustainable jobs which increase economic output of surrounding communities	Data from CIC M&E
Total women employment (direct and indirect)	1396		
Short-term cost per job	$3,254		

8.3 Monitoring and Evaluation

The Climate Innovation Center will have both direct and indirect social/environmental impacts as described in the impacts and outcomes section of the report.

The CIC will have an annual budget for rigorous monitoring and evaluation of the both direct and spill-over effects that the center's programs and services are having on beneficiaries and surrounding communities. M&E will be achieved through:

- Internal databases and data collection
- Yearly annual report
- Focus groups and stakeholder follow-up
- Surveys and other quantitative measurements where possible.

Please see Annex 13 for additional data-points the CIC will actively track.

9.0 Risks

Along with expected successes, it is clear that a broad range of risks are associated with a new and innovative approach such as a CIC, both in terms of the center's implementation and the external operating environment. These risks offer differing degrees of complexity and require various mitigation strategies. The stakeholder outreach conducted provides an indication of the major risks that will be encountered and potential management strategies. However, a key role of the Center's board and management team will be to examine, evaluate and manage risks over time. Included below is an overview of the key risks identified:

Center Implementation Risks

Risk	Description	Potential Mitigation
Finance	▪ Securing initial finance for center implementation. ▪ Securing post year 5 finance. ▪ Accepting/ dispersing finance in an efficient and transparent manner. ▪ Budget outlined in business plan is insufficient to execute current model. ▪ Investment assumptions optimistic	▪ Ongoing discussions with numerous donors, government & investors. ▪ Financial sustainability as an explicit aim of the Center post year 5 with a clear focus on revenue generation. ▪ Clear governance structure and strong implementation partners. ▪ Close monitoring by trustee of financing decisions including flexibility in reallocating program budgets and assistance in further fundraising. ▪ Continue to evaluate investment risks vs potential growth and adjust model as necessary (sensitivity analysis).
Stakeholder support	▪ Continued support and buy in from government, industry and partner institutions.	▪ Partnership managers to maintain and develop relationships, board seats for key stakeholders.
Management team and staff	▪ Identification and recruitment of appropriately skilled board members, management professionals and staff.	▪ High profile initiative with remuneration in line with market.
Market Demand	▪ Demand for center services. ▪ Reputation/Brand of center.	▪ Center continually adapts to market gaps and reallocates budgets as necessary ▪ Emphasis on customer feedback, quality control and M&E.

Market Risks

Risk	Description	Potential Mitigation
Finance	▪ Ability to leverage market investors.	▪ Include investors on board and investment committees. ▪ Continue to engage financial stakeholders.
Market Supply	▪ Ecosystem of investable companies.	▪ Services respond to market gaps and affiliates should aid the identification of potential investments. Ability to offer financing in a market where it is lacking should be a major draw to the Center.
Market Demand	▪ Demand for services provided by companies in center.	▪ Investment decisions will be based on clear demonstration of market demand and adapt as necessary.
Improving regulatory/ policy environment	▪ Business environment. ▪ Climate policy/ regulation focus.	▪ The center aims to play an active role in providing evidence and advocating the development of climate technology conducive regulations and policies.
Competition from other innovation centers/initiatives	▪ Overlap with other initiatives ▪ Change of focus of donor/ government spending. ▪ Additional innovation centers.	▪ Close coordination with existing initiatives and focus on center visibility. ▪ Demonstrable support from stakeholders and local government.

10.0 Conclusion

Kenya represents an extensive market, increasingly progressive policies on sustainability and a pipeline of innovative companies. However, there are clear gaps in institutional support and financing for scaling up the potential for a robust climate innovation ecosystem.

The establishment of the Climate Innovation Center model in Kenya will serve to plug these critical gaps and accelerate the development, deployment and transfer of climate innovation. The service and programmatic offerings of the center include: finance, advisory services, enabling ecosystem development, access to information and access to facilities. Coordination among existing local and global market players is a key success factor and will be one of the main objectives of the CIC.

The projected cost to implement, launch and operate a CIC as designed by Kenyan stakeholders is USD 15.2 million over a five year period, of which approximately two-thirds are investment products and the rest are programmatic and staffing. Initially, public funds are required for the center; however, the CIC aims to be between 70-100% financially sustainable after 10 years.

The stakeholder engagement process has already built a strong coalition of partners and identified a pipeline of potential investees that will allow the CIC to hit the ground running and produce tangible impacts over the first five years. *Pending the success and outcomes of the CIC's programs, the direction, scope and scale of the center (and business plan) will evolve over time with guidance from a strong management team and board.*

The timing is right to capture the momentum that stakeholders have expressed towards establishing the CIC in Kenya. Such a holistic program can catalyze real transformation in Kenya's climate technology space and help develop new industries, create jobs and produce products and services that equip the country and its people to respond to the challenges of climate change.

Abbreviations

ABC-K	Association of Biogas Contractors - Kenya
ACTS	African Centre for Technology Studies
AFD	Agence Française de Développement (French Development Agency)
AFREPREN	African Energy Policy Research Network
AGRA	Alliance for a Green Revolution in Africa
AICAD	African Institute for Capacity Development
CAWT	Conservation Agriculture with Trees initiative
CIC	Climate Innovation Center
CITT	Canadian International Trade Tribunal
CPV	Concentrator Photo Voltaic
CREEC	Centre for Research in Energy and Energy Conservation
CSIR	Council for Scientific and Industrial Research
DANIDA	Danish International Development Agency
DFID	Department for International Development (UK)
EACP	East Africa Capital Partners
EE	Energy Efficiency
ERC	Energy Regulatory Commission (Kenya)
GE	General Electric
GDP	Gross Domestic Product
GoK	Government of Kenya
GM	Genetically Modified
GTZ	German Technical Co-operation
GVEP	Global Village Energy Partnership
ICT	Information and Communication Technology
IDRC	International Development Research Centre (a Canadian Crown Corporation)
IES	Integrated Energy Solutions
IFC	International Finance Corporation
IFC SSC	International Finance Corporation SME Solutions Center
IP	Intellectual Property
IPR	Intellectual Property Rights
IT	Information Technology
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KEBS	Kenya Bureau of Standards
KENGEN	Kenya Electricity Generating Company Limited
KEPSA	Kenya Private Sector Alliance
KIRDI	Kenya Industrial Research and Development Institute
KPLC	Kenya Power and Lighting Company
MEMR	Ministry for Environment and Mineral Resources (Government of Kenya)
NEMA	National Environment Management Authority
MSME	Micro, Small and Medium Enterprises
NCST	National Council for Science and Technology
PE	Private Equity
PISCES	Policy Innovation Systems for Clean Energy Security
PoC	Proof of Concept
PPP	Public Private Partnership
PV	Photo Voltaic
R&D	Research & Development
RE	Renewable Energy
ROI	Return on Investment
SME	Small and Medium Enterprise
SNV	Netherlands Development Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
VAT	Value Added Tax
WB	World Bank