

Concept Note

Project/Programme Title: Green City Pilot

Country(ies): Rwanda

National Designated Authority(ies) (NDA): REMA

Accredited Entity(ies) (AE): Ministry of Environment

Date of first submission/
version number: [2016-08-31] [V.1]

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version number: [2018-07-16] [V.4]



**GREEN
CLIMATE
FUND**

Notes

- The maximum number of pages should **not exceed 12 pages**, excluding annexes. Proposals exceeding the prescribed length will not be assessed within the indicative service standard time of 30 days.
- As per the Information Disclosure Policy, the concept note, and additional documents provided to the Secretariat can be disclosed unless marked by the Accredited Entity(ies) (or NDAs) as confidential.
- The relevant National Designated Authority(ies) will be informed by the Secretariat of the concept note upon receipt.
- NDA can also submit the concept note directly with or without an identified accredited entity at this stage. In this case, they can leave blank the section related to the accredited entity. The Secretariat will inform the accredited entity(ies) nominated by the NDA, if any.
- Accredited Entities and/or NDAs are encouraged to submit a Concept Note before making a request for project preparation support from the Project Preparation Facility (PPF).
- Further information on GCF concept note preparation can be found on GCF website [Funding Projects Fine Print](#).

A. Project/Programme Summary (max. 1 page)			
A.1. Project or programme	<input type="checkbox"/> Project <input checked="" type="checkbox"/> Programme	A.2. Public or private sector	<input checked="" type="checkbox"/> Public sector <input type="checkbox"/> Private sector
A.3. Is the CN submitted in response to an RFP?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, specify the RFP: _____	A.4. Confidentiality¹	<input type="checkbox"/> Confidential <input checked="" type="checkbox"/> Not confidential
A.5. Indicate the result areas for the project/programme	<p>Mitigation: Reduced emissions from:</p> <input type="checkbox"/> Energy access and power generation <input type="checkbox"/> Low emission transport <input checked="" type="checkbox"/> Buildings, cities and industries and appliances <input type="checkbox"/> Forestry and land use <p>Adaptation: Increased resilience of:</p> <input type="checkbox"/> Most vulnerable people and communities <input type="checkbox"/> Health and well-being, and food and water security <input checked="" type="checkbox"/> Infrastructure and built environment <input type="checkbox"/> Ecosystem and ecosystem services		
A.6. Estimated mitigation impact (tCO₂eq over lifespan)	Not known	A.7. Estimated adaptation impact (number of direct beneficiaries and % of population)	Not known
A.8. Indicative total project cost (GCF + co-finance)	Amount:	A.9. Indicative GCF funding requested	Amount:
A.10. Mark the type of financial instrument requested for the GCF funding	<input checked="" type="checkbox"/> Grant <input type="checkbox"/> Reimbursable grant <input type="checkbox"/> Guarantees <input type="checkbox"/> Equity <input type="checkbox"/> Subordinated loan <input type="checkbox"/> Senior Loan <input type="checkbox"/> Other: specify _____		
A.11. Estimated duration of project/ programme:	a) 5 years: b) repayment period, if applicable:	A.12. Estimated project/ Programme lifespan	5 years.
A.13. Is funding from the Project Preparation Facility requested?²	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Other support received <input type="checkbox"/> If so, by who:	A.14. ESS category³	<input type="checkbox"/> A or I-1 <input checked="" type="checkbox"/> B or I-2 <input type="checkbox"/> C or I-3
A.15. Is the CN aligned with your accreditation standard?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.16. Has the CN been shared with the NDA?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.17. AMA signed (if submitted by AE)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If no, specify the status of AMA negotiations and expected date of signing:	A.18. Is the CN included in the Entity Work Programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.19. Project/Programme rationale, objectives and approach of programme/project (max 100 words)	This CN is submitted for a project/programme as part of an integrated Green City Pilot (GCP) in Kigali, Rwanda. The GCP will deliver on high-level national policies and strategies to promote accelerated growth and development, based on the principles of low carbon, climate resilient (LCCR) growth. The pilot will demonstrate the viability of Green Cities in Rwanda, and their replicability for the proposed development of Green Secondary Cities at the national level. The initial GCF project/programme and the wider GCP pilot development will make a significant contribution to achieving national climate compatible development priorities and has strong country ownership.		

¹ Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy ([Decision B.12/35](#)) and the Review of the Initial Proposal Approval Process ([Decision B.17/18](#)).

² See [here](#) for access to project preparation support request template and guidelines

³ Refer to the Fund's environmental and social safeguards ([Decision B.07/02](#))

B. Project/Programme Information (max. 8 pages)

B.1. Context and baseline (max. 2 pages)

Describe the climate vulnerabilities and impacts, GHG emissions profile, and mitigation and adaptation needs that the prospective intervention is envisaged to address.

Rwanda experiences high levels of climatic variability and natural hazards due to the current climate and the influence of El Niño – Southern Oscillation (ENSO) events. It is particularly affected by heavy rainfall, and combined with the hilly terrain, this leads to frequent floods and landslides. Furthermore, the climate of Rwanda is already changing and impacts are increasing. Meteorological observations show that the temperature of Rwanda has increased strongly over recent decades, with around 1.4°C of warming and there is increasing rainfall intensity, which is increasing flood and landslide risk. Analysis of the global climate modelsⁱ project that there will be further increases in temperatures and increases in the number of hot days in the future, as well as increases in the intensity of heavy rainfall. All of these changes are likely to exacerbate the impacts of current climate variability in Rwanda in urban areas, as well as lead to new risks. Rwanda has high sensitivity to climate change and low adaptive capacity.

At the same time, Rwanda is undergoing rapid urbanization and is formulating new long-term urban plans today, that will lock-in development patterns for decades. It is critical that these new land-use plans and developments are built to include climate resilience within their design.

While current levels of greenhouse gas emissions in Rwanda are lowⁱⁱ, rapid urban development in Rwanda will lead to a major increase in future years. The choices of spatial planning, building material use and design, as well as energy and transport systems, will therefore affect the future emission pathways for all of the major cities.

This project will address these issues and has the potential to deliver a transformational change by altering the green urban development of the country at a key transition point, and by doing so, deliver increase resilience and significant GHG emission reductions relative to a BAU scenario.

Please indicate how the project fits in with the country's national priorities and its full ownership of the concept. Is the project/programme directly contributing to the country's INDC/NDC or national climate strategies or other plans such as NAMAs, NAPs or equivalent? If so, please describe which priorities identified in these documents the proposed project is aiming to address and/or improve.

The Government of Rwanda launched its Green Growth and Climate Resilient Strategy (GGCRS) in 2011. This set out the target of becoming a developed climate-resilient, low-carbon economy by 2050, and included a focus on low carbon and climate resilient urban development. This was advanced in the National Economic Development and Poverty Reduction strategy (EDPRS 2) which included a priority on green urbanization.

This has been reflected in national and sector development strategies, policies and plans. The National Urbanisation Policy (2015) advocated for integrated urban planning and the efficient use of land and strategic investment phasing based on green economic development principles. The strategy also promotes a "green economy" approach to economic transformation which favours the development of sustainable cities and villages. Key innovations include piloting a green city (as in this proposal). The new (2018) National Strategy for Transformation - the new medium term economic development plan - also stresses the need for urbanization to be climate resilient and low carbon.

Most recently, Rwanda's NDCⁱⁱⁱ includes Adaptation Programme 6: Integrated approach to Sustainable Land Use Planning and Management (Action A6.1: Employ an integrated approach to planning and sustainable land use management) and it has a series of Mitigation Programmes of relevance to the Green City Pilot, including Programme 3: Energy efficiency and demand side management, Programme 4: Efficient resilient transport system and Programme 5: Green industry and private sector development.

Describe the main root causes and barriers (social, gender, fiscal, regulatory, technological, financial, ecological, institutional, etc.) that need to be addressed.

Urban growth in Rwanda is currently 9% per year, most of it in the capital, Kigali. However, the landscape of Rwanda is predominantly hilly and the high levels of climate variability and increasing climate change lead to a continual problem of floods and landslides, with high damage costs, especially as house building materials, design and planning are of low quality. It is critical that new land-use and urban plans are therefore built with the future climate in mind, ensuring they are resilient. This involves decisions on siting and site design, planned interventions to remove flood and landslide risk, and building design to address rising temperatures and other risks.

Furthermore, as a remote and landlocked country, Rwanda is heavily reliant on high cost, high carbon imports of construction materials (with very high levels of embodied carbon). There is therefore a major opportunity to develop

home grown construction materials, which use green design and low carbon materials - as well as reduced embodied carbon from lower transport – to provide the material for this construction expansion and enhance local green jobs. Similarly, with increasing urbanization, and power connection targets, there will be a sharp increase in electricity demand and emissions. There are a set of renewables that can be used – on-grid and off-grid in urban areas– to provide clean electricity. Finally, with increased urbanisation, there is a need to develop a green public transport system, at housing site, and connecting to the surrounding amenity and employment hubs.

While there are major benefits from green urban development, there is currently low awareness on climate risks as well as resilient and low carbon design, which means development is following a business as usual pathway. As well as information failures, there are also risk perceptions around the introduction of new climate resilient designs and low carbon development, which are a major barrier, compounded by the lack of demonstration sites. Furthermore, public agencies require additional funding, technical support and capacity development in order to take advantage of positive Government position on green growth and create the incentives for low carbon and climate resilient development.

This project will address these barriers and will promote best available design and technologies, which have the potential for cost effective replication and scale up. Indeed, there is a direct scale-up planned through extension to green secondary city programme across Rwanda.

Where relevant, and particularly for private sector project/programme, please describe the key characteristics and dynamics of the sector or market in which the project/programme will operate.

In line with the Accreditation status of the MoE, the project is focused on the public sector, and its role in creating the enabling environment for public and private low carbon and climate resilient urban development.

B.2. Project/Programme description (max. 3 pages)

Describe the expected set of components/outputs and subcomponents/activities to address the above barriers identified that will lead to the expected outcomes.

The Government of Rwanda (GOR), through its accredited entity the Ministry of Environment, is submitting this revised concept note to the Green Climate Fund (GCF) to finance an initial project/programme as part of an integrated Green City Pilot (GCP) in the Kinyinya Hill, Gasabo District, Kigali. The GCP will deliver on high-level national policies and strategies and will promote accelerated growth and development based on the principles of low carbon, climate resilient (LCCR) growth. It will demonstrate the viability of Green Cities in Rwanda, and their replicability for the proposed development of Green Secondary Cities at the national level, helping to deliver the objectives for green growth in the new national development plan (National Strategy for Transformation, 2018 – 2024).

The design and feasibility of the overall GCP development will commence in the near future with an urban masterplan (submitted as part of a PPF request). The masterplan is critical to the green city development as it will identify investment opportunities for climate resilient and low carbon elements that will subsequently support a specific GCF funding proposal that focuses on climate resilience (adaptation) and the incremental costs of low carbon and green infrastructure, that respond to Rwanda and GCF investment criteria. The GCF proposal is likely to be centred on the development of climate resilient and low carbon infrastructure for the site, and/or demonstration and enabling activities, that provide the foundation for subsequent phases of the GCP development. The funding of this initial project will kick-start the overall green city programme (the GCP and the green secondary cities) and will deliver the paradigm shift towards urban green growth in Rwanda.

The overall GCP aims to develop a green city development within the framework of the Green City Concept of the Kinyinya Hill and will capture all of the key 'Pillars of Green and climate resilient Urbanism' as defined by the National Roadmap for Green City Development policy. It is a viable plan for a replicable pilot, that can be implemented across the country starting with the 6 secondary cities that are already identified to build on the green city pilot outputs, in the typical 'hillcrest to wetland' landscape of Rwanda. It contains all of the key concepts that are fundamental to the creation of an effective green urban centre; 'a city' with green, low carbon and climate resilient housing, infrastructure, land use, mixed use, amenities, workplaces and industry. The pilot will be used to draw lessons and scale up with a paradigm shift towards low-emission and climate-resilient development, e.g. with resilient planning approaches and green building standards. GCF's involvement in this project will catalyze the intervention of subsequent private sector investors as well as public sector partners, unlocking green growth and kick-starting the scale up of the Green Cities Strategies to the rest of the country through the green secondary cities programme: as such it represents a major window of opportunity to move Rwanda to a new green and climate resilient development pathway.

The GCP development will therefore demonstrate innovative strategies to develop a low carbon and climate resilient neighbourhood, initiate a large scale 'home grown' building material production industry, and ensure capacity building and job creation for Rwandans in a new green economy.

In terms of rationale, please describe the theory of change and provide information on how it serves to shift the development pathway toward a more low-emissions and/or climate resilient direction, in line with the Fund's goals and objectives.

Climate smart urban development is a necessity for Rwanda. Given the hilly terrain and high climate variability, Rwanda already experiences major climate related impacts (notably from floods and landslides), which are exacerbated in urban areas due to the high population density. Climate change is already leading to rising temperatures and increasing the intensity of heavy rainfall, and these risks will continue to rise sharply in future years. At the same time, Rwanda is formulating new long-term urban plans today, that will lock-in development patterns for decades (if not longer). It is critical that new land-use plans are therefore built with the future climate in mind. This involves decisions on site design and selection, building design to address rising temperatures and other risks and planned interventions to remove flood and landslide risk. Similarly, urban development in Rwanda will lead to a major increase in greenhouse gas emissions. The choices of spatial planning, building material use and design, transport systems, etc. made now will affect the future emission pathways for all major cities. There is therefore an opportunity to shift these plans towards a low carbon trajectory at this critical point in urban policy formulation and city development planning.

To demonstrate the concept of low carbon and climate resilient urban development, the Government of Rwanda is promoting the Green City Pilot Concept for the Kinyinya Hill in Kigali. This will address the barriers discussed above, addressing information barriers and overcoming risk perceptions, providing a clear demonstration effect, as well as providing the technical assistance and capacity building to enable the public sector to catalyze green urban development.

Describe how activities in the proposal are consistent with national regulatory and legal framework, if applicable.

The overall alignment with national strategy was set out above. At the detailed level, the City of Kigali (CoK) will provide the Construction Permit for all types of buildings in the development. There is an advanced on-line Building Permit system, with a guaranteed fast response time (30 days). In a desire to simplify the building permitting process in to a 'One Stop' application, the City combined 'Planning permission' (which examines urban, town planning, demographic and amenity issues according to the CoK 2013 Masterplan) with 'Building Regulations' (which deals with building construction and performance standards). The CoK 2013 masterplan provides a zoning system available online with a table of guidelines for each zone. The Rwanda Standards Board (RSB) (www.rsb.gov.rw) provides permits for low carbon construction materials. This will allow the use of the materials in Rwanda and for export to East Africa.

Describe in what way the Accredited Entity(ies) is well placed to undertake the planned activities and what will be the implementation arrangements with the executing entity(ies) and implementing partners.

The Ministry of Environment – the accredited entity - will lead in the overall management, reporting and supervision of the project with GCF. In Rwanda, FONERWA (the national fund for Environment and Climate Change) is the primary vehicle through which environment and climate change finance is channelled, programmed, disbursed and monitored in Rwanda and therefore FONERWA will execute the project.

FONERWA will establish a Programme Management Unit (PMU) that will be housed within the Fund Management Team of FONERWA. Activities will be implemented using the Ministry of Environment existing management and financial systems. FONERWA will coordinate delivery of the programme outputs.

The GCF activities will be overseen by a Steering Committee chaired by the Ministry of Environment. The Steering Committee will serve as the project coordination and decision-making body and will ensure it delivers its outputs and achieves its outcomes. The Committee will periodically review progress and evaluations, facilitate implementation (ensuring the necessary resources and support are provided in a timely manner) and provide guidance to the PMU. The Steering Committee will reflect the multi-sectoral nature of the project, and will include senior-level representatives from GoR and partner organisations, as well as civil society. The Steering Committee will meet every 6 months to review progress and approve work plans, budgets and any major changes in implementation.

The activities and funding will be programmed through the PMU and will be executed through relevant Government partner organisations, in line with relevant mandates. This will include MININFRA, Rwanda Housing Authority (RHA) and REG as well as Ministry of Trade and Industry (MINICOM).

To increase uptake and scale up of the pilot interventions the PMU will ensure that results are communicated through Sector Working Groups (SWGs). The SWGs provide a forum for dialogue that includes development partners who provide support in the sector as determined by the GoR division of labour. These groups build synergies in policy formulation and implementation. The PMU will regularly report results to the SWGs and provide inputs as a measure for continuous improvement of delivery.

Please provide a brief overview of the key financial and operational risks and any mitigation measures identified at this stage.

The GoR has existing protocols and guidance for financial and operational risk and these will be applied in the project. The key environmental and social risks have been considered below. A full environmental and social impact assessment will be undertaken during the design phase.

Risk	Proposed Mitigation Measure
Environmental Risks	
Increased Storm water run-off	Increased use of soft drainage and flow attenuation, leading to increased percolation of groundwater
Aquifer depletion	
Soil Erosion	As above, plus use of trees and other plants to anchor soil in place. During construction, stored soil to be covered and kept moist to avoid wind erosion.
Aquifer pollution	Improved sanitation; Thin-film Aerobic digester Faecal Wastewater Treatment plant replaces pit latrines
Air pollution	Green urban design promotes decreased use of vehicles; therefore less emissions. Also, new housing units use electricity for cooking and lighting, not wood.
Loss of forest cover	Green urban design stresses the use of trees for natural shading, plus provision of public spaces. Overall, the master plan shows an increase in tree cover
Social Risks	
Loss of livelihood	Scheme creates 760 new jobs. Also, agriculture is concentrated in lower wetlands, where production can be intensified. Overall, more jobs are created
Loss of land	Land can be capitalised and used in part payment for housing units, or substituted for land in new agricultural zones.

B.3. Expected project results aligned with the GCF investment criteria (max. 3 pages)

The GCF is directed to make a significant and ambitious contribution to the global efforts towards attaining the goals set by the international community to combat climate change, and promoting the paradigm shift towards low-emission and climate-resilient development pathways by limiting or reducing greenhouse gas emissions and adapting to the impacts of climate change. Provide an estimate of the expected impacts aligned with the GCF investment criteria: impact potential, paradigm shift, sustainable development, needs of recipients, country ownership, and efficiency and effectiveness.

Impact potential

The GCP project will use easily developable land in close proximity to the main economic hubs of the capital city and is ideal as economically sustainable site that contains two mature 'eco-systems' (the Deutsche Welle and the wetland). There is a major opportunity to develop this site in a way which reduces GHG emissions, builds climate resilience, and protects and enhances ecosystems. For example, there is the potential for the introduction of resilient 'eco system' infrastructure (ecosystem-based adaptation) - from the hill to wetland - that will limit urban heat island effect, reduce erosion, minimize landslide risk and control storm water. This will be complemented with the use of resilient land-use plans (for individual buildings and the overall development), taking into account site topography and climate risks, to reduce risks of lock-in (under climate change) and the use of climate resilient building design and materials, for both households, public buildings and business buildings to minimize heat and extreme weather risks, linked to the development of green housing standards,

Similarly, there are opportunities to reduce the current carbon intensive building materials in use in Rwanda with low carbon alternatives and develop housing and spatial designs that reduce emissions. The choices of spatial planning, building material use and design, transport systems, will affect the future emission pathways for all major cities. The Green City Pilot will therefore demonstrate low carbon urban development. The mitigation impacts will be benefits achieved from conservation and enhancement of the forest carbon sinks at the site, reducing the carbon costs of construction through the use of local low carbon construction materials, reducing emissions by minimizing energy demand through passive design and energy saving infrastructure reducing emissions from use of renewables and minimizing water expenditure through water sensitive installations and rainwater collection and reducing road emissions achieved from reduced transportation due to walkability and proximity to amenities and use of a hybrid transport system.

Quantification of direct and indirect beneficiaries of the GCP will be further carried out during the masterplan analysis (linked to the PPF application), but include populations in the vicinity, as well as those vulnerable to flooding

downstream. It is highlighted that with 57,000 inhabitants, Kinyinya is the most populated sector of the most populated district of Rwanda. The GHG benefits of the pilot will also be quantified during the masterplan analysis, though early analysis has found that there are large emission reductions possible through the introduction of low carbon and local production of building materials.

Paradigm shift

The Green City Pilot will make a significant contribution to Rwanda's Green Growth and Climate Resilient Strategy (2011), by demonstrating the viability of Green urban activities. The pilot will be used to draw lessons and scale up with a paradigm shift towards low-emission and climate-resilient development, e.g. with resilient planning approaches and green building standards. The project will also catalyze the intervention of subsequent private sector investors as well as public sector partners, unlocking green growth and kick-starting the scale up to the rest of the country through the green secondary cities programme: as such it represents a major window of opportunity to move Rwanda to a new green and climate resilient development pathway.

The GCP will provide a demonstration of effective resilient and green urban centres (with green housing, infrastructure, mixed use, amenity, workplaces and industry) and will be used to inform master-planning for the national planning process for the Green Secondary Cities in the run up to the third phase of Rwanda's Economic development strategy (NTS – 2018 to 2024).

To help ensure this, proposed project has components on knowledge and capacity building and will use the learning from the GCP to help inform the subsequent national scale up of green urbanization. The project includes measures to transfer and mainstream the knowledge generated and lessons learned and ensure that the necessary capacity is developed within local and national institutions. This will ensure benefits that go beyond the lifetime of the project and achieve transformative effects.

Sustainable development

The project is anticipated to have major economic, social and environmental benefits. These include the growth of competitive low carbon industries from the demonstration of affordable, low carbon housing sector, with skills, livelihood and income benefits from the development and the subsequent scale-up. The project a specific focus on gender and 43% of the jobs created on the project will be for women.

It will also lead to reduced fatalities, injuries losses and damage costs associated with the greater resilience to extreme weather events, and reduced floods and landslides. There are estimated benefits from stabilised slopes and reduced erosion, increased forest cover and biodiversity, improved soil quality, water retention capacity, reduced urban heat island effect, reduced likelihood of flooding and improved air quality through reduced traffic.

Needs of recipients

As one of the poorest countries in the world, Rwanda does not have the financial resources to adopt the programmes of action needed to deliver national priorities for green growth and climate resilience set out in the EDPRS II, the GGCRS and the NDC. There is high potential to shift Rwanda to LCCR development pathway but this will require investment of resources. The upfront investment costs needed to shift Rwanda toward more climate resilient green growth are a significant barrier for pursuing these development pathways: a GCF contribution is therefore crucial to build on the progress Rwanda has made so far on green growth and take this forward, and to catalyze private sector investment to deliver financially sustainable solutions. Whilst National Budget contributions currently facilitate a step by step delivery of LCCR development, GCF funding will enable the immediate coordinated and integrated piloting of proposed interventions, thereby i) enabling rapid delivery of green growth impacts, ii) demonstrating practical and integrated low carbon development in a key location and iii) providing immediate information with which to inform the wider national development agenda, with a particular ability to influence the planning, design and development of the next six year development strategy (the NTS).

It is also highlighted that the specific location of the GCP, in Gasabo district, has high poverty levels compared to the two other district sin Kigali, with 26% and 13% of the population living below the poverty line or in extreme poverty respectively, compared to approximately 9% and 3% for the rest of Kigali (EICV3).

Country ownership

It is stressed that there is extremely high country ownership for the GCP. Indeed, the need for this project was directly identified in the GGCRS (2011) including supporting integrated approaches to sustainable land use planning and management as well as integrated water resource management and planning; diversifying energy sources with

promoting green technology; green industry and private sector development; developing low carbon peri-urban systems; sustainable forestry; and disaster management.

The planned interventions in the GCP project will contribute to a number of priority areas in the national development plan including supporting and promoting: the establishment of financing and supply options for affordable housing; green urbanisation and the promotion of green innovation in industrial and private sectors; integrated approach to land use and human settlements; critical skills and attitudes for service and industrial sectors.

The focus on Integrated and Sustainable Land Use Planning, Energy efficiency, Efficient resilient transport systems and Green industry and private sector development are also all priority programmes in Rwanda's NDC.

Efficiency and effectiveness

The exact cost-effectiveness (\$/tCO₂) of the project will be assessed during the masterplan phase (and full GCF proposal preparation). Nonetheless, the available literature indicators that the low carbon pathways proposed, including the use of high quality bricks and renewable energy would be cost effective.

The economic present value and financial rate of return will be assessed in detailed with the use of an extended economic appraisal and financial modelling analysis during the masterplan and GCF proposal preparation. However, it is expected that the project will have a high economic return. Existing urban development in Rwanda has high costs and this is leading to affordability issue. The replacement of these high cost pathways with more effective and efficient green development and locally produced materials has the advantage of reducing costs and creating environmental benefits, thus leading to a high financial rate of return and a high economic benefit. As an example, recent analysis in Rwanda has highlighted that the shift to new brick production with higher efficiency processes would lead to high IRR (14%), positive benefit to cost ratios (3:1) and good cost-effectiveness (\$1/tCO₂). Similarly the economic benefits of resilient housing developments, in reducing risk of damage (which are expected to increase under climate change) have been found to be highly positive (NPV).

B.4. Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)

Please describe how engagement among the NDA, AE and/or other relevant stakeholders in the country has taken place and what further engagement will be undertaken as the concept is developed into a funding proposal.

Consultations have been carried out at the policy level with the Minister of Environment in order to brief and obtain guidance about the Green City Pilot, who subsequently requested for consultation through presentation at the Senior Management meeting of the Ministry of Environment. A validation workshop was also carried out following studies, to which multiple stakeholders (including civil society) were invited. Other consultations were carried out with various stakeholders including regulators to define densification issues, the Integrated Water Resources department to address storm water issues. The masterplan (feasibility phase) and the GCF full proposal preparation will undertake extensive stakeholder consultation, with a wide and diverse group of Government, private sector and civil society stakeholders, and will include consideration of gender including a full Gender Action Plan.

C. Indicative Financing/Cost Information (max. 3 pages)

C.1. Financing by components (max ½ page)

Please provide an estimate of the total cost per component/output and disaggregate by source of financing.

The cost and financial details of the overall Green City Pilot will be developed as part of the masterplan and this will also develop the costs and financial details of the GCF funded project.

Component/Output	Indicative cost (USD)	GCF financing		Co-financing		
		Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions
Indicative total cost (USD)						

For private sector proposal, provide an overview (diagram) of the proposed financing structure. Not applicable

C.2. Justification of GCF funding request (max. 1 page)

Explain why the Project/ Programme requires GCF funding, i.e. explaining why this is not financed by the public and/ or private sector(s) of the country.

Rwanda is one of the most vulnerable countries in the world to climate change. High levels of poverty, a shortage of land and rapid population growth combined with Rwanda's hilly topography are creating huge pressures. The expected impacts on climate change in Rwanda are well documented in the national communications to UNFCCC and the recent climate vulnerability analysis. Climate change impacts will combine with anthropogenic factors to significantly damage Rwanda's growth and development with implications for peace and stability in the country as well as the region. Indeed, the future economic cost of climate change in Rwanda will be large – estimated at an additional impact of 1% of GDP each year even by 2030^{iv}. Urgent action is needed to deliver the national strategies that have been developed by the Government, such as the GCP.

Rwanda's commitment to tackling climate change is recognized worldwide and there is strong ownership of the development and green growth agenda. Rwanda has established a strong and effective policy framework to deal with climate change. All the necessary policies and legal frameworks are in place including a national climate fund that can absorb, disburse and monitor interventions to tackle climate change. There is high-level ownership and commitment to adapting to the effects of climate change and Rwandan institutions, and the MoE have excellent experience from implementing a number of projects that support adaptation. In terms of mitigation, the Government has enshrined low carbon growth in its policy framework across Government and has made significant efforts to build awareness at the local level.

With a small but fast-growing economy, there is a window of opportunity for Rwanda to adopt low carbon and climate resilient development pathways that would be challenging for more developed countries. There is a need to ensure the development of building design and urban layout take account of increasing climate risks, otherwise development pathways will lock in high damage related losses. Alongside this, there is a significant risk that, without the necessary support, growth of key sectors such as construction will follow the business as usual high carbon route to development. Early action is needed to incentivize the production and use of low carbon materials and technologies in construction to encourage a more sustainable route for the growth of this sector and the economy more widely. There is therefore a timely opportunity to support and stimulate low carbon and climate resilient development pathways in Rwanda's urban development.

Describe alternative funding options for the same activities being proposed in the Concept Note, including an analysis of the barriers for the potential beneficiaries to access to finance and the constraints of public and private sources of funding.

As highlighted above, as an LDC, Rwanda lacks the financial resources to adequately address climate threats and support low carbon growth. The cities receive relatively low levels of budget support and the limited availability of public and private funds highlights the need for additional external finance. At the same time, Rwanda has demonstrated success in terms of its institutional capacity to absorb and manage climate finance. Rwanda's good progress towards high fiduciary management standards, its commitment to service delivery and its strong track record of effective and efficient budget execution demonstrate it is at an advanced stage of climate finance readiness.

Justify the rationale and level of concessionality of the GCF financial instrument(s) as well as how this will be passed on to the end-users and beneficiaries. Justify why this is the minimum required to make the investment viable and most efficient considering the incremental cost or risk premium of the Project/ Programme (refer to Decisions B.12/17; B.10/03; and B.09/04 for more details). The justification for grants and reimbursable grants is mandatory.

All interventions in the proposal will be designed to maximise the use of GCF grant finance and comply with the principles set out in Annex III to decision B.05/07. In line with GCF guidance (B_10_06) grant elements will be tailored to i) the incremental cost or the risk premium required to make investments viable, i.e. to meet the additional costs of green investment, provide longer-term finance or to create incentives for behavioural change (so far as is required to make activities financially viable, or to overcome risk perceptions) ii) for demonstration effect, i.e. where there is clear demonstration effect in relation to new technology, approach or market, which if needed, is then further supported by TA to ensure scale-up iii) to cover technical assistance, or iv) to meet the additional costs of climate action that would otherwise not be available, particularly for resilience (adaptation) activities for vulnerable groups. In all cases, the interventions will be designed to address barriers and create the enabling environment for mitigation and adaptation, to leverage on existing public and private finance, and to ensure there is no distortion or displacement of existing public or private sector funds.

In the case of private sector proposal, concessional terms should be minimized and justified as per the Guiding principles applicable to the private sector operations (Decision B.05/07).

Not applicable

C.3. Sustainability and replicability of the project (exit strategy) (max. 1 page)

Please explain how the project/programme sustainability will be ensured in the long run and how this will be monitored, after the project/programme is implemented with support from the GCF and other sources.

GCF's involvement at the early stages of the Green City Pilot will create the incentive for the subsequent scale up of finance for the overall development. To further ensure the sustainability in the long run, the project has a number of additional activities. First, it builds capacity within the relevant implementation organisations to ensure country ownership and the sustainability of the project. Second, it has activities on addressing barriers and creating the enabling environment for change, thus it will alter the incentives for the sector and organisations (including market-based approaches and engagement of the private sector) to ensure activities scale up after the funding period. The intention is for GCF's input to help create a self-sustaining economic model using the principles of green development which, once it has gained its initial momentum, will be replicated across the country. In particular, this replicability and scalability will be delivered through the planned lessons and link to the master planning for the national planning process for the Green Secondary Cities programme.

For non-grant instruments, explain how the capital invested will be repaid and over what duration of time.

D. Supporting documents submitted (OPTIONAL)

- Map indicating the location of the project/programme
- Diagram of the theory of change
- Economic and financial model with key assumptions and potential stressed scenarios
- Pre-feasibility study
- Evaluation report of previous project
- Results of environmental and social risk screening

Self-awareness check boxes

Are you aware that the full Funding Proposal and Annexes will require these documents? Yes No

- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people if relevant
- Gender assessment and action plan
- Operations and maintenance plan if relevant
- Loan or grant operation manual as appropriate
- Co-financing commitment letters

Are you aware that a funding proposal from an accredited entity without a signed AMA will be reviewed but not sent to the Board for consideration? Yes No

ⁱ World Bank Climate change Knowledge Portal (2018).

http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisRegion=Africa&ThisCCode=RWA

ⁱⁱ Rwanda Sectoral Analysis: Assessment of Sectoral Opportunities for the Development of Nationally Appropriate Mitigation Actions (NAMAs) in Rwanda. June 2015

ⁱⁱⁱ REMA (2017). DETAILED IMPLEMENTATION PLAN FOR THE NATIONALLY DETERMINED CONTRIBUTIONS (NDCs) OF RWANDA. Republic of Rwanda, September, 2017.

^{iv} Stockholm Environment Institute (2009). Economics of climate change in Rwanda