

PROPOSAL FOR FINAL CONSIDERATION

Project Fact Sheet

NDF C118/C119 RWANDA - Kigali Flood Control and Integrated Urban Catchment Management	
Partner Agency	World Bank (WB)
Executing Agency	Rwanda Environment Management Authority (REMA)
Sector	Flood Prevention/Control. CRS code: 41050
Country	Rwanda
Budget¹ - NDF - Partner Agency - Other Funders	TOTAL: approximately EUR 14.1 million NDF: EUR 2.1 million grant + EUR 4.0 million loan WB/Global Environment Facility (GEF): approx. 8.0 million EUR grant The private sector is expected to finance part of the investment costs.
Project Period	2019 - 2024
Mode of Finance	Parallel co-financing
Previous Support to Country	Credits: EUR 12.5 million Grants: EUR 13.1 million
Rio Markers	Adaptation: 2. Mitigation: 0
Gender Marker	1=significant objective
Climate Screening	Satisfied for adaptation
Sustainable Development Goals	1. No poverty; 5. Gender equality; 8. Decent work and economic growth; 11. Sustainable cities and communities; 13. Climate action; 15. Life on land; and 17. Partnerships for the goals
Environmental and Social Policy	Compliance: Yes; Risk Category: will be assessed when investments are identified and selected; Qualifications: TBC; Monitoring: TBC
Processing Schedule	Pipeline - March 2019 Final - April 2019 Signature - June 2019 Effective - September 2019

¹ Exchange rate on 7 March 2019: 1 EUR = 1.12867

PROJECT SUMMARY

NDF grant EUR 2.1 million

NDF loan EUR 4.0 million

Project Period: 2019 – 2024

Partner Agency: World Bank

Implementing Agency: Rwanda Environment Management Authority

Objective

The objective of the proposed NDF project is to support the city of Kigali and its inhabitants to improve climate resilience through better management and flood control of urban sub-catchments.

The following **activities** have been proposed to be financed by NDF:

- 1) Technical Assistance (TA) services to identify, assess, plan, design and support catchment management and investments relating to urban flood control (EUR 1.8 million grant)
- 2) Upgrading of systems relating to the urban hydrometric network, flood forecasting and early warnings, and flood preparedness planning (EUR 0.2 million grant)
- 3) New public and private investments in urban sub-catchment areas (EUR 4.0 million loan)
- 4) Technical support, monitoring, and evaluation (EUR 0.1 million grant)

The following **outcomes** are expected:

- Improved flood control and management in Kigali;
- Better access to advance warning of major flood events;
- Increased number of men, women and children within the project area benefiting from improved livelihoods;
- Reduction in social and economic losses due to floods;
- Increased understanding of the cost-effectiveness of different flood prevention interventions;
- A prioritised plan leading to resource mobilisation for implementation of investments that will be adopted under the Kigali City Master Plan;
- Improved knowledge about best practices for flood prevention and disaster management;
- Improved early warning system, forecasting services, emergency planning and appropriate public response in disaster situations
- Priority public and private investments in flood reduction effective and work opportunities created.

Financing

The total project cost estimate is EUR 14.0 million. NDF is providing EUR 2.1 million in grant and EUR 4.0 million in loan while GEF will be requested to provide approximately EUR 8.0 million.

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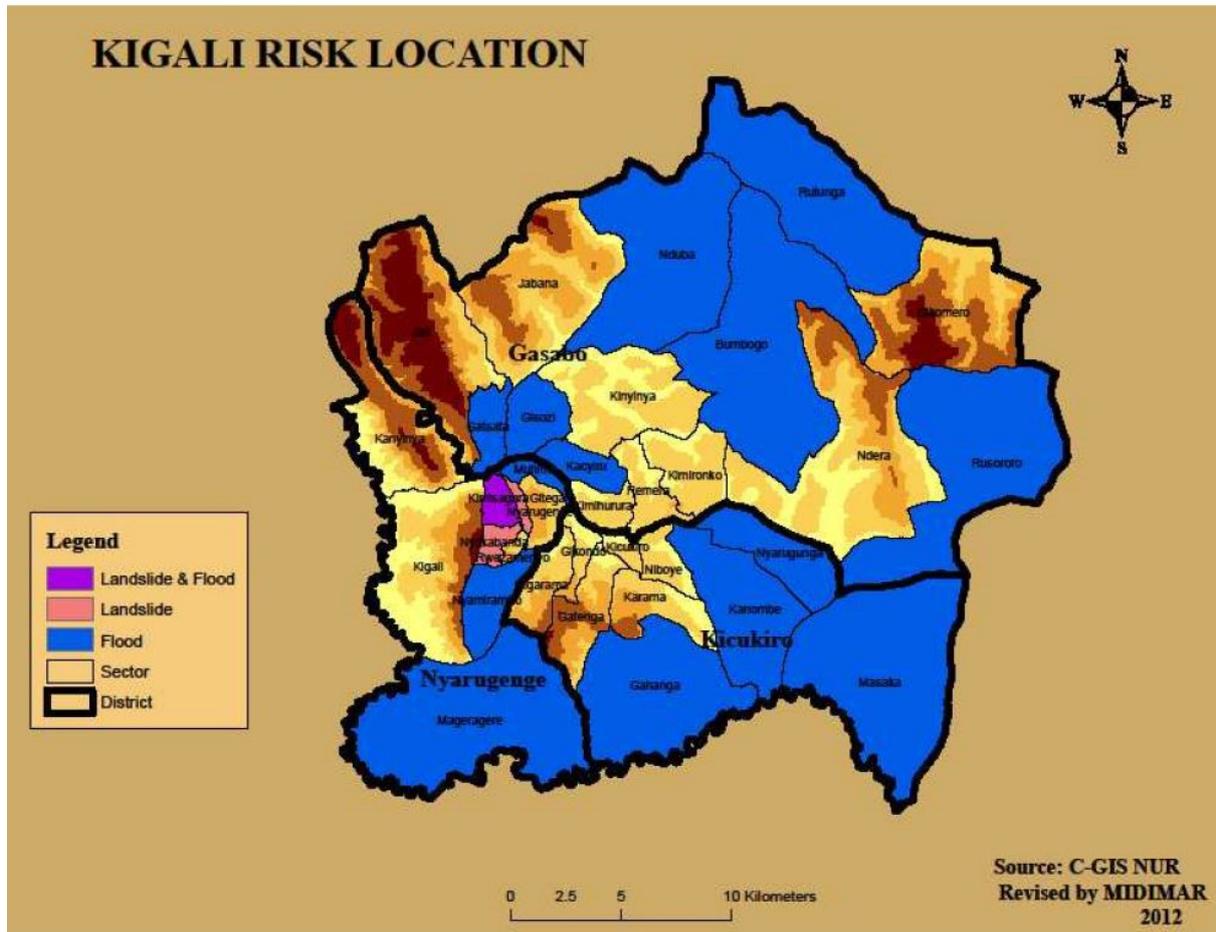
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ABBREVIATIONS

DFID	Department for International Development (UK)
FONERWA	Rwanda's Green Fund
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GGGI	Global Green Growth Institute
GoR	Government of Rwanda
KfW	Kreditanstalt für Wiederaufbau (Germany)
MoU	Memorandum of Understanding
NCF	Nordic Climate Facility
NDC	Nationally Determined Contributions
NDF	Nordic Development Fund
NST	National Strategy for Transformation
PSF	Private Sector Federation
RDB	Rwanda Development Bank
REMA	Rwanda Environment Management Authority
RWFA	Rwanda Water and Forestry Authority
SIDA	Swedish International Development Cooperation Agency
SPCR	Strategic Programme for Climate Change
TA	Technical Assistance
TBC	To be confirmed
UNDP	United Nations Development Programme
WACA	West African Coastal Adaptation Programme
WB	World Bank

Map of Kigali risk zones

(Source: Jean Baptiste NSENGIYUMVA; Disaster High Risk Zones on Floods and Landslides. Ministry of Disaster Management and Refugee Affairs. Kigali 2012)



1. INTRODUCTION AND PROJECT BACKGROUND

This proposal stems from an invitation to NDF by the World Bank (WB) to co-finance a climate component on catchment management and flood control under the planned Kigali resilience project, financed under the new GEF-7 Sustainable Cities Programme. NDF is an active partner in the design and preparation of the project and NDF financed a consultant in November and December to work together with the Government of Rwanda and WB on the design of a component to integrate climate resilience through flood control and urban sub-catchment management. The component will form part of the WB project's intervention on developing urban climate resilience in Kigali.

Rwanda is a small land-locked developing country of almost 12 million people, located in the African Great Lakes region. The topography is mountainous with an extensive network of wetlands covering more than ten per cent of the country's surface area. Many poor households depend on wetlands for food items, firewood and construction materials. The capital city Kigali is undergoing a rapid urbanisation, and many households and businesses are located in fragile ecosystems, such as on steep slopes and wetlands. The present urban development pattern has led to loss and degradation of Kigali's wetlands and associated sub-catchments. The depletion of vegetation cover, exposure of soils, and construction of impervious surfaces negatively affects the water retention capacity and thus the runoff, erosion and sediment transport patterns. The uncontrolled runoffs also accelerate soil erosion and destabilisation of slopes and hilly areas. Flooding incidents have escalated rapidly over the last few years and projections suggest that heavy rainfalls are likely to continue increasing in intensity and frequency. The projected climate changes for Rwanda entail increased temperatures and intensified rainfall resulting in flooding and landslides.

To address this situation, sound management of the urban sub-catchment is a logical element in the protection and management of the larger urban wetlands in Kigali. The World Bank-financed project will support the restoration of the key downstream urban wetlands and the implementation of sustainable urban planning and other selected mitigation measures. NDF is proposing to finance catchment management and flood control in the urban sub-catchments of Kigali. Both interventions will be complementary elements of a proposed GEF-7 Sustainable Cities project. The project is aligned with other WB urban initiatives on urban development and housing finance.

2. RELEVANCE AND RATIONALE

2.1. Project Relevance

Rwanda's Strategic Programme for Climate Resilience (SPCR) takes an integrated programmatic approach that requires cross-ministerial collaboration and the integration of climate resilience into development imperatives. The National Strategy for Transformation (NST1) highlights that private sector-driven economic development has critical roles to play in the implementation of the city development plans. Adaptation concerns such as floods, landslides and soil erosion are central elements of Rwanda's National Determined Contributions (NDC). All policy documents outline challenges related to urban areas and emphasise the need to integrate climate resilience considerations into urban planning. The proposed NDF project directly responds to priority actions outlined in the SPCR, the NST1 and the NDC.

The NDF activities complement the WB/GEF activities as the NDF components focus on resilience whereas the WB/GEF components emphasise mitigation activities. The proposed NDF interventions will focus on catchment management and flood control in the urban sub-catchments of Kigali, whereas the GEF-7/WB study areas will focus on restoration of key urban wetlands with a focus on addressing the problems relating to solid waste. Both projects will be complementary elements of the Sustainable Cities project.

The project will contribute to several Sustainable Development Goals: No poverty, Sustainable cities and communities, Climate action, Life on land, Gender equality, and Global partnerships.

2.2. Relevance to NDF's Mandate and Strategy

The project follows NDF's **climate** mandate, strategy and business plan and will help Rwanda to adapt to climate change, in alignment with Rwanda's policies, strategies and NDC priorities. The project may also have a mitigation impact through potential forestry measures.

The NDF financing will **leverage** financing from GEF-7 and **crowd in private sector financing**. The project will **involve the private sector in adaptation** and raise awareness among companies about private sector opportunities relating to climate resilience.

The proposed project will support data collection, system improvements and knowledge exchange that will pave the way for **preparing projects** and follow-up investments by technical and financial partners from the public and private sector.

NDF financing will support capacity-building of local institutions interested in designing and testing **innovative** financial instruments and technical solutions. If successful, the concept of providing financing for adaptation can be scaled up. Other cities have similar challenges and replication opportunities are obvious.

The proposed project is multi-sectoral and supports collaboration across different entities, in order to achieve systemic change. This is an **emerging climate change issue**, as are the efforts to enhance private sector involvement in adaptation.

3. THE PROPOSED PROJECT

3.1. Objectives

The general objective of the overall project is to support environmental management and sustainable urban development in Kigali for green growth and climate resilience, protection of biodiversity and reduction of land and wetland degradation.

The objective of the proposed NDF project is to support the city of Kigali and its inhabitants to improve climate resilience through better management and flood control of urban sub-catchments.

3.2. Project Activities

In close consultation with Rwandan authorities, the WB team and other key stakeholders, the following activities have been proposed to be financed by NDF:

- 1) Technical Assistance (**TA**) **services** to identify, assess, plan, design and support **catchment management and investments relating to urban flood control** (EUR 1.8 million grant)
- 2) **Upgrading of systems** relating to the urban hydrometric network, flood forecasting and early warning, and flood preparedness planning (EUR 0.2 million grant)
- 3) New public and private **investments** in urban sub-catchment areas (EUR 4.0 million loan)
- 4) **Technical support, monitoring, and evaluation** carried out by NDF and/or NDF contracted consultants (EUR 0.1 million grant)

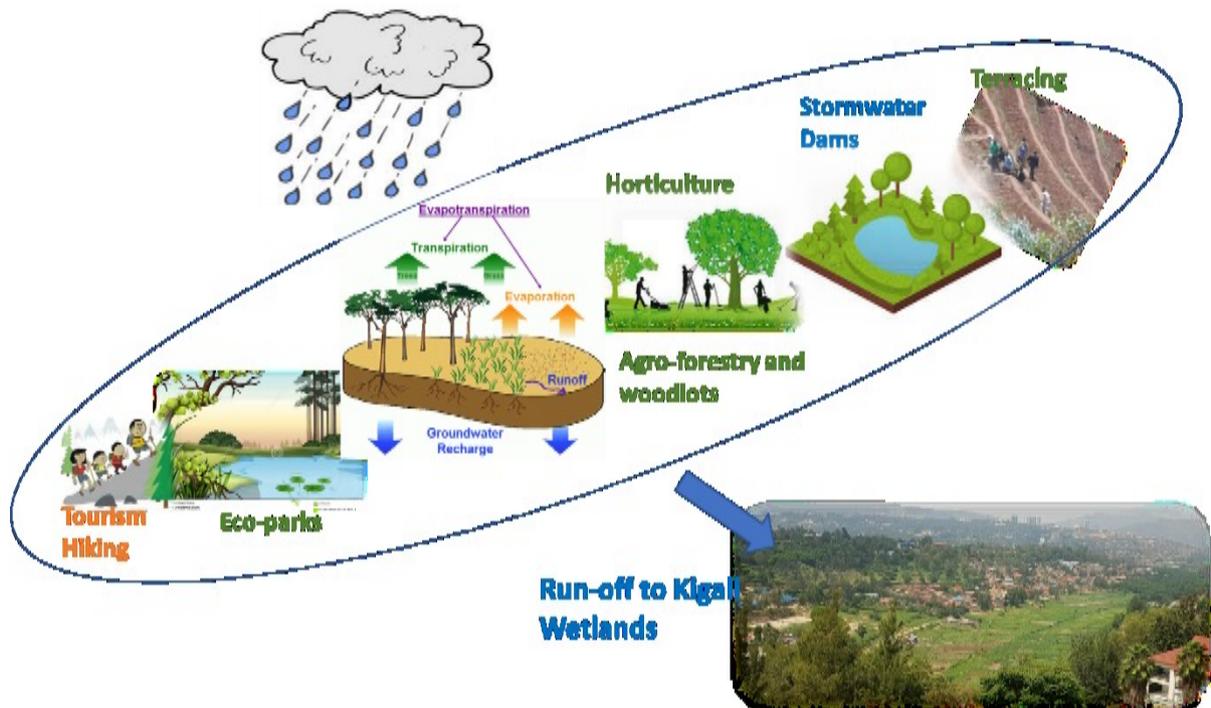
The **TA services** will include a diagnostic study including stocktaking and an assessment of the current status of urban flooding and catchment management in Kigali. The study will map past and ongoing work supported by technical and financial partners including the Rwanda Environment Management Authority (REMA), the Rwanda Water and Forestry Authority (RWFA), the Ministry in Charge of Emergency Management, the City of Kigali, and the World Bank to maximise synergies and avoid duplication. Alternative nature-based flood control measures including catchment restoration, flood and storm water retention, and soil erosion control will be identified, analysed and modelled. These measures will work along with the hydraulic systems planned for the ongoing extension of the city's Master Plan (2013). The investments identified by the TA services will be aligned with NDF's policies and guidelines as well as relevant safeguards and will include gender equality, poverty reduction and private sector involvement targets. The TA services will include monitoring and evaluation, dissemination of the results, knowledge sharing and exchange. The TA consultancy will be integral in mapping the needs, identifying the optimal public and private investments, and ensuring their viability and safeguarding.

The **upgrading of systems** such as urban flood and hydrological real-time monitoring, forecasting and data management systems will include a fully integrated early warning system and emergency alerts via media, mobile phones to people and businesses in flood-prone areas. The alert system will be linked to the upgraded flood emergency plan.

The TA consultancy financed under the NDF grant will identify priority **investments for erosion and flood control**. This TA will include assessment of effectiveness in controlling soil erosion and flash floods of different magnitudes and return periods as well as the potential for private sector involvement. The measures for catchment restoration, flood reduction, storm water retention, soil erosion control in concerned sub-catchments may include:

- Reforestation and afforestation for water retention, groundwater infiltration;
- Urban agriculture and horticulture;
- Hill terracing for water retention, soil protection, agriculture, and horticulture;
- Storm water management through small- or large-scale rainwater harvesting systems like multipurpose dams or artificial lakes combined with economic activities like irrigation, small hydropower (e.g. renewable energy), fish ponds and water supply;
- Eco-parks reducing run off in wetlands, possibly combined with educational aspects and tourism activities such as hiking, leisure facilities and resorts, fishponds, and water sports.

Some examples of potential interventions are illustrated in the figure below.



The private sector investments are planned to be financed by on-lending channelled through suitable partners, such as Rwanda’s Green Fund (FONERWA) and the Rwanda Development Bank (RDB), which may be interested in developing new innovative financing instruments.

The World Bank Group Flagship Report “Doing Business 2019” has compared Business Regulation for Domestic Firms in 190 Economies. The fact that Rwanda ranked 29 and the second-best country in sub-Saharan Africa is a promising framework condition for private sector involvement.

There are already some examples in Rwanda demonstrating significant potential for private sector investments in nature conservation and sustainable use. A recent private sector involvement is the reforestation efforts led by a lodge operator, which has resulted in 15,000 indigenous trees planted in the Volcanoes National Park. Several other lodges are being built in Rwanda and all have pledged to be environmentally friendly. Another example of private sector involvement is the plan to turn Nyandungu wetland in Kigali into an urban wetland recreation and eco-tourism park. It is a EUR 2.4 million green economy project, financed by FONERWA that will boost tourism and generate income. It is also a revenue source for the country and will create job opportunities for the youth, and business opportunities for people living around the proposed park.

The involvement of the private sector in urban forest development and soil conservation could be in the form of concessions with an economically viable forest industry. Individual farmers or cooperatives may establish private woodlots, and these entities could play an essential role in the tree planting if they are provided with technical skills, materials and equipment. Promotion of agro-forestry and planting of fruit trees also will allow income diversification and more integrated and intensified land use and work opportunities.

EUR 0.1 million will be held in reserve for **technical support, monitoring and evaluation** of the project to be carried out by NDF and/or NDF-contracted consultants.

3.3. Cost Estimates and Financing Plan

The tentative cost estimates of the NDF activities and the financing plan is outlined in the following table:

Activity	Description	Type of financing		Total (EUR)
		Grant	Loan	
1.1 Initial fact finding and overall system analysis	Engage with all relevant stakeholders, identify all relevant existing, ongoing and planned interventions, rapid assessment and identification of disaster risk hot-spots and priority catchment measures.	200 000		200 000
1.2 Hydrological, hydraulic and economic modelling of flood risk scenarios and interventions options	Modelling of economic losses due to urban flooding in Kigali and effects of different flood control measures.	250 000		250 000
1.3 Design and planning for storm water management and implementation plan for city of Kigali	Participatory preparation of flood risk reduction and catchment management and implementation plan, facilitate mobilisation of financial resources and partnership arrangements, involve the private sector, women, youth and other relevant groups.	550 000		550 000
1.4 Feasibility studies and detailed design for upgrading investments (urban hydrological real time monitoring system, hydro-meteorological early warning services) and for the new priority investments	Analyse alternative measures for upgrading of urban hydrometric network, prepare feasibility studies, environmental and social impact assessments and technical specifications for the required equipment, provide training, advice and support to for implementation as needed.	400 000		400 000
1.5 Knowledge management and best practice exchange	Develop monitoring program, knowledge exchange services, and facilitate knowledge exchange e.g. through study tours. Supply of interactive system for information and experience dissemination.	50 000		50 000
2. Upgrade urban hydrological real-time monitoring system, hydro-meteorological early warning services, and emergency planning	Supply of goods, works and related training for the upgrade of urban hydrological real-time monitoring systems, hydro-meteorological early warning services, and emergency planning.	200 000		200 000
3.1 Supervision and implementation of prioritised flood reduction public investments (GoR)	Supervision support to authorities for prioritised flood reduction public investments. Supply of equipment and goods for prioritised flood reduction public investments.	250 000	3 100 000	3 350 000
3.2 Supervision and implementation of private sector investments	Advisory and support services for private sector investments Private sector investments (via FONERWA-RDB etc.)	100 000	900 000	1 000 000
4. Technical support, monitoring and evaluation	To be carried out by NDF and/or NDF contracted consultants	100 000		100 000
TOTAL		2 100 000	4 000 000	6 100 000

The NDF financing to Rwanda will be parallel co-financing and the loan will be based on the IDA terms. EUR 100,000 of the grant will be held in reserve and controlled by NDF to be used for technical support, monitoring, and evaluation (Activity 4 in the table above). The

terms for the remaining NDF grant (EUR 2 million) and loan (EUR 4 million) financing will be specified in the financing agreement between NDF and the government of Rwanda.

The private sector is expected to finance part of the investment costs with a share that will be determined at the design phase of this component.

3.4. Nordic Interest

Nordic city solutions for sustainable, liveable and climate-smart cities are on the global radar screen and may inspire Kigali and other cities to seek similar solutions. NDF support to urban projects in Asia, Africa and Latin America include numerous flood and erosion activities that could be of interest to partners in the proposed project.

All five Nordic countries face flood, erosion and landslides that pose risk to lives and infrastructure. There is solid evidence base combined with in-depth knowledge, tools and practical measures on how to manage water risks and control erosion. Norway has a real-time, countrywide monitoring of flood and landslide risks (with the X-GEO tool). Denmark has mapped all areas susceptible to flooding and has decades of experience with erosion control measures. The Nordic countries are also investing in knowledge generation on water management and water governance issues. Global Water Partnership and World Water Week demonstrate the ability of Nordic institutions to put water on the global agenda. The Nordic Council of Ministers has recently published a study on ecosystem services in the Nordic countries. Sweden provides training courses in disaster management for stakeholders from developing countries. The courses entail specialised theoretical and practical hands-on training in both Sweden and Africa.

There is also significant Nordic expertise and interest in the identified field of intervention. Rwanda scores high on the World Bank Doing Business report, which in this respect makes the country like-minded with the Nordic countries.

3.5. NDF's Added Value and Comparative Advantage

NDF's most important added value is expected to come from NDF's involvement in enhancing private sector development in the area of climate change adaptation. Significant experience is foreseen to be shared from several projects financed under the Nordic Climate Facility (NCF) as well as large regional programs such as the West Africa coastal areas (WACA) program (NDF C107-109). The NDF activities will complement and add value to the WB/GEF activities as the NDF components focus on resilience whereas the WB/GEF components emphasises mitigation activities.

NDF will also contribute with its knowledge of developing innovative financing tools, including for NCF and WACA. There may be a potential exchange of experience between FONERWA and NCF relating to the management of calls for proposals for innovative climate projects. Financing tools of potential relevance and interest for Rwanda may exist also in other NDF projects such as the Climate Resilience and Adaptation Finance and Technology Transfer Facility (NDF C114) and the Cloud Forest Blue Energy Mechanism (NDF C113).

Other ongoing relevant NDF projects include the Flood risk management project in Senegal (NDF C33), Coastal cities and climate change project in Mozambique (NDF C36), and the Project to transform hydro-meteorological service in Mozambique (NDF C44). Moreover, the Adapting Cities to Climate Change project (NDF C42) can add value to the proposed project:

it has produced a pertinent publication on nature-based solutions for building resilience in towns and cities including several case studies. NDF will share this and other relevant publications with partners in the proposed project.

The NDF C79 (Developing Capacity for Climate Resilient Road Transport Infrastructure in Rwanda) is currently under implementation and has a special focus on erosion landslide control measures. The project is developing “Build-back-better” guidelines for reconstruction efforts that are more resilient to climate change, accompanied by training and testing on the ground - events to which also stakeholders involved in the proposed project can be invited.

4. IMPLEMENTATION ARRANGEMENTS

4.1. Technical Aspects

The private sector sub-component provides NDF with an opportunity to support the strengthening of Rwanda’s national capacity to extend financing to climate change adaptation. As the private sector is also expected to contribute to a share of the total costs, the NDF financing is expected to leverage financing from the private sector. If successful, the concept of providing financing for adaptation can be scaled up.

The allocation of the NDF loan targeting private sector activities is proposed to be EUR 0.9 million. The financing is planned to be provided as a credit line functioning as a revolving fund facilitated by collaboration partners such as FONERWA and the Rwanda Development Bank (BRD), building on these institutions’ experience of offering similar products.

FONERWA opens financing opportunities through its private sector resource allocations (20% of total fund resources). At present, they are performance-based grants but FONERWA is interested in exploring an expansion of its financial instruments to introduce guarantee and concessional loans. FONERWA’s private sector window cannot yet provide loans directly but have been providing support to a credit line that is channelled through the BRD. The role of FONERWA is technical project selection, guiding funding decisions and implementation facilitation.

FONERWA has recently introduced a guarantee (in partnership with Business Development Fund (BDF) through a Memorandum of Understanding (MoU) and the Fund is in the process of operationalising an accelerator/incubator program. The FONERWA sub-project size has been around USD 100,000 - 1,000,000.

BRD has provided green financing for adaptation and mitigation projects in collaboration with FONERWA since 2013. It has experience of financing projects through partnership with Finnfund and has also collaborated with Swedfund, Norfund, KfW, WB and SIDA and has plans to do that also with GCF. The ceiling for direct lending is currently 50,000 USD. The interest rates and other lending costs have often been cheaper than the market rates (with an average of around 16%), which currently are at around 18%. Its management fees that it has been passing on to the borrowers has been around 0.5-1.5%, in some rare cases above 2%.

Potentially NDF could also look at other credit channels beyond BRD. There are other banks that may be stronger in terms of working with smaller borrowers like cooperatives, for example the Urwego Opportunity Bank (UOB). Nevertheless, both FONERWA and BRD are considered strong collaboration partner candidates as it is expected that NDF can obtain due

diligence as well as other assessments of the organisations and the work conducted by them from partner financiers such as the World Bank and the Embassy of Sweden. These documents that partners can share with NDF will help NDF to carry out its own due diligences and are expected to speed up NDF's processing of agreements, guidelines and other documents that will be needed to be developed for NDF's financing.

Marketing a credit line for adaptation investments to the private sector will require extra efforts, both in terms of outreach to potential private sector partners, and to develop and implement the selection process. Costs relating to this activity has to be factored in either in the TA consultancy contract or as FONERWA/RDB management fees, depending on the division of work. The TA consultancy is also to include support to the development of FONERWA, directed for example towards a credit provision/green banking facility, building on work of other financing partners such as the African Development Bank.

There are existing MoUs between these institutions which the proposed NDF project could use as models for similar arrangements detailing the division of work between the different institutions.

4.2. Institutional Aspects and Project Organisation

The Rwanda Environment Management Authority (REMA) under the Ministry of Environment will be in charge of implementation of the project. NDF has a positive impression of REMA as an implementer of NDF C95 Improving charcoal value chain project.

REMA will collaborate closely with key stakeholders such as the City of Kigali, the Rwanda Water and Forestry Authority (RWFA), the Water Resources Management Department, the Ministry in charge of Emergency Management, the Rwanda Meteorology Agency, Rwanda's Green Fund (FONERWA), the Development Bank of Rwanda and the Private Sector Federation (PSF). Memorandums of Understandings (MoUs) will be prepared outlining responsibilities, implementation and collaboration arrangements between key partners.

Among other things, REMA will ensure that RWFA and other technical team needs and inputs are taken into consideration and reflected in project preparation (preparing the ToR), during implementation and in the final outputs of the consultancy services.

The City of Kigali is presently reviewing the Kigali Master Plan review and it is essential to ensure that the proposed project is well aligned and adds value to the Master Plan. Therefore, the TA consultant for the NDF components will work closely with Kigali City to embed activities in the Master Plan to secure that the proposed project is fully in line with the City Development Strategies.

FONERWA demonstrates a good record in mobilising and managing environment and climate-related investments in an environment and climate change fund. FONERWA provides technical and financial support to the best public and private projects that align with Rwanda's commitment to a green economy. DFID is the main contributor to FONERWA, and others are KfW, SIDA, UNDP/GGGI (providing Technical Assistance) and the World Bank's Project Preparation Fund (PPF).

4.3. Procurement and Contract Structure

The project will have two consultancy contracts; the first focusing on studies needed to select and prepare the investments, and the second, for detailed design, and support for implementation and capacity-building.

The number of contracts for the equipment and works will be determined at a later stage, but most probably some items to be procured can be clustered into bigger contracts. There will be separate contracts for the grant-financed components and the loan-financed components.

Procurement of contracts financed by NDF generally follow the World Bank's guidelines. However, the selection process of contracts linking to the private sector investments will be defined separately with the assistance of the TA Consultant and most probably in collaboration with FONERWA/ Development Bank of Rwanda. The selection criteria and process as well as the contracts will be subject to NDF's No Objection.

4.4. Risk Analysis

Rwanda has a sound record of effective and accountable project implementation. The identified risks are presented below and rated as small (S), medium (M) or high (H):

Risk	Rating	Mitigation Measure
Limited capacity of Implementing Agency and key stakeholders	M	The TA consultant will provide support as needed.
Implementing Agency not committed to involve key stakeholders	S	Financing Agreement to contain collaboration as a requirement.
Key stakeholders not sufficiently committed	S	The TA consultant will apply a participatory approach.
Private sector not interested in investing in adaptation	M	The TA consultant will be required to engage the private sector, increase awareness and provide support.
Technical complications with implementing investments	M	The TA consultant will provide support as needed.
Negative impact of investments on social, environmental, health, and safety	H	The project design requires these risks to be assessed and mitigated for all identified investment following the World Bank's safeguard policies. Although the risks are not yet known, this risk is rated high here to ensure that enough attention is paid to follow up on the safeguard aspects that will be identified during the implementation phase of the project.
Delays in implementation	M	NDF and the World Bank will jointly monitor and collaborate in implementation supervision.
Cost overrun	M	The budget contains unallocated amounts. Detailed planning of investments will increase precision level and reduce risk of overrun.
Integrity risks	M	NDF will actively apply preventive measures e.g. when overseeing the procurement process.

4.5. Monitoring and Evaluation

The management of the project will involve coordination between project implementing partners, work planning, procurement and contract management, accounting and audit

costs, field supervision, maintaining an internal project monitoring and evaluation (M&E) system, and reporting. The internal M&E system will incorporate information on project outcomes generated through the field-based impact monitoring. The project coordination team based within the project implementation unit housed in REMA will be responsible for day-to-day implementation.

NDF will monitor progress with the help of quarterly progress reports provided by the Implementing Agency, the consultants' reports, and by regular supervision missions, ideally carried out jointly with the World Bank. A mid-term review will be carried out. NDF may also at some point considering carrying out an evaluation of several of its projects relating to urban flooding.

An amount of EUR 100,000 of the grant budget is reserved for technical support, monitoring and evaluation carried out by NDF or NDF-contracted consultants to ensure learning as well as documentation and dissemination of results. In addition, EUR 50,000 of the consultancy contract to be procured by REMA has been reserved for monitoring, knowledge exchange and dissemination of best practices.

5. ECONOMIC AND SOCIAL ASPECTS

5.1. Economic Justification

At this scoping stage, no detailed economic analyses have been carried out, but the periodic floods and droughts (extreme events) already cause major socio-economic impacts in the City of Kigali in terms of infrastructure damage, fatalities and injuries, landslides, loss and damage to agricultural crops, soil erosion and environmental degradation. The proposed project outline design includes a holistic approach involving hydrological data, early warning services, hydrology-economic modelling for justification of prioritised flood control investments and capacity-building.

It is expected that the overall project as well as the investments to be identified are economically justified. The City of Kigali is Rwanda's financial and economic hub and contributes 50% of the country's GDP. The Nyabugogo sub-catchment is a major sub-basin and the most densely populated and urbanised catchment in Rwanda, covering a major portion of the capital city of Kigali. The Nyabugogo wetland and other urban wetlands are prone to frequent flash flooding during strong rainfall events. These high run-off flows are resulting in floods that pose a threat to human life and property. A recent survey of small businesses and entrepreneurs in the area showed that the flooding costs them approximately 178 million Rwandan Francs annually, representing 23% of their yearly profit. This is just an example illustrating the losses caused by urban flash run-off and flooding.

5.2. Environmental and Social Aspects

The initial social and environmental impact assessment framework for the bigger project will be determined jointly by the World Bank and NDF. The project design requires these risks to be assessed and mitigated in more detail for all identified investment following the World Bank's safeguard policies.

The detailed safeguards will be specified at the time when the priority investments have been identified. The environmental and social risks are potentially rated high as the region is generally considered vulnerable. NDF's safeguard specialist will review the risks and the

safeguards at the time when the investment design documents are sent to NDF for No Objection.

Rwanda is well-advanced in gender equality promotion (70% of parliament representatives is women). The NDF project has a built-in focus on gender equality opportunities of identified priority investment projects and mechanisms for engaging and empowering women and youth in the projects. Training of youth and women in improved preparedness to meet flood events is one of the elements included in the emergency planning.

6. CONCLUSION

The NDF concessional loan for public and private investments will add considerable value to the overall project and will prepare the way for projects with similar goals of strengthening the climate change resilience of people and assets in urban areas at risk of floods and landslides. The NDF funding will contribute to the provision of affordable financing packages and provide a platform for continued replication and up-scaling efforts benefitting Rwanda and countries with similar challenges.

The NDF involvement will support preparation of new investment opportunities in climate-resilient projects by financing upstream upgrading of the knowledge base and long-term collection, storage, processing, and dissemination of crucial information. This will pave the way for fact-based investments in climate change adaptation projects involving mobilisation of governmental and private funding. The NDF support will also directly benefit vulnerable settlements through improved early warning systems and improve the knowledge base on flood and rainwater related threats. The project will also directly showcase business opportunities for men and women interested in investing in adaptation projects. Finally, the proposed project will contribute to the development of Rwanda's capacity to address climate challenges, including through its own financing institutions.

7. RECOMMENDATION

The Board approved grant financing of up to EUR 2.1 million and loan financing of up to EUR 4.0 million to the project RWANDA - KIGALI FLOOD CONTROL AND INTEGRATED URBAN CATCHMENT MANAGEMENT PROJECT.

Helsinki, 1 April 2019



Leena Klossner
Acting Managing Director



Martina Jägerhorn
Program Manager

Annex 1 - Project Results Matrix

Project Development Objective			Timeframe	Indicators		
To support the city of Kigali and its inhabitants to improve climate resilience through better management and flood control of urban sub-catchments			Year 0-5	Hectares of land area where better management and flood control has been adopted Number of households in the project area with access to improved advance warning of major flood events Number of men, women and children within the project area benefiting from improved livelihoods Private and public investments designed and implemented		
Activities	Outputs	Outcomes	Impact	Inputs	Timeframe	Indicators
1.1 Initial fact finding and overall system analysis	Diagnostic study Identified catchment measures	Framework for focus and implementation	Holistic situation awareness	Consultancy and stakeholder efforts	Year 0-1	Report approved
1.2 Hydrological, hydraulic and economic modelling of flood risk scenarios and interventions options	Modelling of economic losses caused by floods and costs and benefits of various alleviation measures	Knowledge about economic and social losses due to floods and sound understanding of effects and costs of interventions	Economically justified catchment investments	Consultancy and stakeholder efforts	Years 1-2	Report approved and recommendations adopted
1.3 Design and planning of Kigali City Flood Risk Management Plan and private sector involvement	Flood Reduction and Catchment Management Plan including plans for involving the private sector and a gender action plan including mechanisms for engaging and involving women	Prioritised plan leading to mobilisation for implementation that will be adopted under the Kigali City Master Plan.	Public and private sector alerted and prepared for action	Consultancy and stakeholder efforts incl. private sector	Year 1-3	Plan approved and endorsed by government and private sector and integrated in the Kigali Master Plan
1.4 Feasibility studies and detailed design for upgrading and new investment	Feasibility studies, environmental and social impact assessments	Technical documents that can be used for procurement and contracting	Optimal investment solutions selected and implemented	Consultancy and stakeholder efforts incl. private sector	Year 1-3	Best suppliers selected and contracted
1.5 Knowledge management and best practice exchange	Interactive knowledge exchange system developed and under implementation	Project knowledge shared e.g. through study tours, city-to-city partnership functioning	Flood control benefitting from improved knowledge and partnership arrangements	Consultancy and stakeholder efforts incl. private sector	Year 3-5	Knowledge exchange system in place and effective
2. Upgrade urban hydrological real time monitoring system, hydro-meteorological early warning services, and emergency planning	Equipment and training	Improved early warning, forecasting services, and emergency planning and appropriate public response in disaster situations	Better climate resilience and preparedness	Consultancy and stakeholder efforts. System investments	Year 1-2	Report approved and performance of services
3.1 Implementation of prioritised flood reduction public investments	Priority public investments in flood reduction measures implemented and operational	Priority public investments in flood reduction effective and work opportunities created	Improved climate resilience in Kigali including improved livelihood effects	Supervision consultancy. Construction and mitigation works	Year 4-5 and beyond	Prioritised urban catchment works implemented and effective
3.2 Implementation of private investments	Priority private investments implemented and operational	Priority private investments in flood reduction effective and work opportunities created	Improved climate resilience in Kigali including improved livelihood effects	Supervision consultancy. Construction and mitigation works	Year 4-5 and beyond	Prioritised urban catchment works implemented and effective