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Adaptation Fund Board
Project and Programme Review Committee
Thirty-fourth Meeting
Bonn, Germany, 8-9 October 2024

PROPOSAL FOR RWANDA

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY:

Country/Region:
Project Title: Enhancing Adaptation Through Catchments Restoration in 6 Sub-Catchment of Mukungwa Catchment in Rwanda
Thematic Focal Area:
Implementing Entity: Ministry of Environment
Executing Entities: Rwanda Water Resources Board
AF Project ID: AF00000389
IE Project ID: **Requested Financing from Adaptation Fund (US Dollars):** USD11,465,960
Reviewer and contact person: Micol Ullmann Auger **Co-reviewer(s):** Dirk Lamberts
IE Contact Person:

Technical Summary	The project "Enhancing Adaptation Through Catchments Restoration in 6 Sub-Catchment of Mukungwa Catchment in Rwanda" aims to enhance climate adaptation resilience in the Mukungwa catchment, and specifically in 6 sub-catchments of Rubagabaga, Nyamutera, Mwora, Minoga, Burera-Gisovu, and Kagere, through targeted landscape restoration initiatives for prioritized sub catchments. This will be done through the five components below: Component 1: Rehabilitation of degraded areas through terracing, afforestation, reforestation, agro-forestry, and hedgerows practices (USD 6,182,229) Component 2: Gully Rehabilitation (USD 441,612) Component 3: Landscape Restoration Supporting Measures (USD 1,760,200) Component 4: Community Capacity Building (USD 150,000) Component 5: Monitoring, Evaluation, and Learning (USD 1,465,960) Requested financing overview: Project/Programme Execution Cost: USD 850,000

	Total Project/Programme Cost: USD 10,000,000 Implementing Fee: USD 615,960 Financing Requested: USD 11,465,960 The initial technical review raises several issues, such as the need to include information about direct and indirect beneficiaries, including vulnerable and indigenous groups, a gender assessment and action plan, a gender-responsive consultations process and report, a grievance redress mechanism, information about other relevant projects in the area, more details regarding gender-responsive implementation, environmental and social risk management, and cost effectiveness, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Request (CARs) raised in the review.
Date:	May 21, 2024

Review Criteria	**Questions**	**Comments**
Country Eligibility	1. Is the country party to the Kyoto Protocol or the Paris Agreement?	**Yes.**
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** Rwanda's vulnerability to climate change is compounded by its reliance on rain-fed agriculture, leaving farmers susceptible to erratic weather patterns and droughts. Additionally, the country's densely populated and hilly terrain exacerbates the risks of soil erosion, flooding, and landslides, further threatening agricultural productivity and human settlements.
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes**. As per the Endorsement letter dated March 4, 2024.
	2. Does the length of the proposal amount to no more than One hundred (100) pages for the fully-developed project document, and one hundred (100) pages for its annexes?	**Yes.** The proposal is 66 pages. There are no annexes.
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse	**Unclear.** The proposed project is part of the larger Volcanoes Community Resilience Project (VCRP), that also includes

	effects of climate change and build in climate resilience?	a project submitted earlier as a proposal by the NIE "*Enhancing adaptation through sustainable green settlements and climate-resilient livelihoods in the Volcano Region of Rwanda*". Overall, the information provided on the adaptation needs of the communities involved in this project is not specific to the project area. The proposal has been derived from a description of the VCRP project (Vanguard Economics 2024), which has resulted in information presented that is not relevant to the current proposal or that is generic, such as most of the information on the climate change risks for the project area. Reference is made to "a recent flood risks assessment" (page 8) as source of justification for the project but no detailed or specific information is provided. **CR1:** Please provide information specific for the proposed project, elaborate on important elements, and remove elements that are not relevant. The proposal includes several references to 'degraded areas' as target of the proposed project. It is unclear what this refers to or how it is defined, what the causes of the degradation are and how the proposed remedies are justified. **CR2:** Please clarify what the degraded areas are and how the project will remedy these, including tackling the causes of degradation. The description of the project benefits is that of the benefits of the VCRP project for all 66 catchments involved, rather than those specific to the 6 catchments targeted by the proposed project.

		CR3: Please clarify the proposed project benefits for the 6 catchments involved. On page 19, the proposal states that in the selected catchments for this proposal, 284 hectares of afforestation and reforestation are planned. It is unclear what this selection is based on. It may involve all land with slopes over 60% but it is unclear what the current land use is or where this land is located. In its current presentation, the activity is to be considered an unidentified sub-project (USP). **CR4:** Please provide further information on the land to be re/afforested, including a map of precise locations and current land use. Similarly, the information on the agroforestry that is intended for "the rest of the land" (page 19) lacks basic information and the activity should be considered a USP. **CR5 :** Please provide the required information on the USP activities, in compliance with the guidance available at https://www.adaptation-fund.org/wp-content/uploads/2022/10/PPRC.30.54-Updated-guidance-on-USPs-with-Annex.pdf The proposal includes the provision of 1,300 cows to households. It is unclear if the enabling environment (veterinary services, extension service, feeds, pasture) is present or what the husbandry methods will be. Free roaming or tethered cattle may contribute to erosion. **CR6:** Please clarify the enabling environment in relation to the provision of cows and the husbandry method that will be utilized.

		The proposal includes for almost USD 1.5 million component 5 of “monitoring and learning”. **CR7:** Please clarify how this component will generate concrete adaptation outcomes. Please also see **CAR6** and the comments under the execution costs justification.
	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Unclear.** Overall, the description of the project benefits is generic and lacks substantiation for several of the benefits claimed including in a lack of data on project beneficiaries. The proposal mentions that landscape restoration supporting measures under component 3 will benefit 1300 households in the catchment area, but that is the only specific information provided regarding the communities/beneficiaries in the project area. The proposal mentions safeguarding the rights of vulnerable groups, youth, and people with disabilities, but no data on these groups is provided. *Economic:* The proposal states that the project will generate SLM jobs for local communities, prioritizing local vulnerable and marginalized groups, but no data is provided on these beneficiaries. Other potential economic benefits include income diversification by introducing non-timber forest products, increased agricultural productivity and crop yields thus strengthening food security, and reduced reliance on expensive chemical fertilizers. However, no baseline data is provided with which to

		measure improvement. The description of the economic benefits is limited to project implementation jobs. Trees are to provide social benefits by significantly improving air quality. *Social*: Improved health through better nutrition and food security, community engagement and empowerment, and educational opportunities related to SLM. However, more information is needed on beneficiaries and the consultations process to ensure that these community members are indeed participating in project design and implementation. *Environmental:* landscape restoration will lead to enhanced biodiversity, soil erosion control, improved water conservation, carbon sequestration and microclimate stabilization from increased tree cover and SLM practices, with terracing planned for 6,400 hectares, 284 hectares planned for reforestation and afforestation, and the rest dedicated to agroforestry systems. **CAR1:** Please provide a gender assessment to determine the different needs, capabilities, roles and knowledge resources of women and men, and/or identify how changing gender dynamics might drive lasting change. Please note that a gender assessment is a requirement at full proposal stage, as per the Fund's Gender Policy. **CAR2:** Please provide a detailed and substantiated description of the anticipated project benefits, including how the project will benefit the landless and the female land owners. **CR8:** Please provide gender-disaggregated data on the direct and indirect project beneficiaries, including vulnerable and marginalized groups, women, youth, and

		people with disabilities. **CR9**: Please provide baseline data wherever possible to enable evaluation of project activities. **CAR3:** Please provide a detailed consultation report and process, ensuring the participation of key stakeholders, including vulnerable and marginalized groups.
	5. Is the project / programme cost effective?	**Unclear.** Cost effectiveness is as outlined on page 29 with a logical explanation of selected scope and approach, analyzed through the lens of the larger VCRP program. No alternatives to the project or its activities are discussed. More information is needed for the specific 6 catchments under this project, including on the current agricultural practices to assess cost effectiveness, including intense cultivation. **CR10**: Please provide more details on existing agricultural practices and alternative approaches that could have taken place. **CR11:** Please clarify how the proposed project is cost effective.
	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	**Yes**, as outlined on page 31.
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	**Yes**, as outlined on pages 33-35.

	8. Is there duplication of project / programme with other funding sources?	**Unclear**. The proposed project represents the second phase of the larger VCRP program and is therefore dedicated to a specific component (Landscape restoration and catchment management) in 6 specific catchments, so there is no duplication with the larger programme. However, it is not clear if there are or have been any other relevant projects in the area or country. **CR12:** Please list all relevant potentially overlapping projects / programmes are identified, and lack of overlap / complementarity stated in a logical manner.
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**No.** Section II.G of the proposal is too generic, despite the dedicated component 5 with a budget of nearly USP 1.5 million. Component 4 is dedicated to capacity building and awareness raising activities for communities in the project area. Knowledge management and feedback lessons are contemplated under the Participatory Monitoring and Evaluation System mentioned on page 38, but this is not mentioned under the component. Additionally, more information is needed on how this information will be disseminated and how the project will ensure that all can access it. **CAR4:** Please ensure that activities related to knowledge management (KM) and dissemination of lessons learned are included in either a single component or part of a larger component and that they are easily accessed for feedback of lessons. **CAR5:** Please describe the lessons and knowledge the project expects to generate, and how that will be managed.

	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**No.** More information is needed. The larger program design relied on extensive community stakeholder engagement, including community engagement platforms mentioned on page 37, but this information is missing. The proposal underscores the importance of community consultations and participatory design, yet only one community of farmers was consulted in the Ngororeo district, which represents just one of the 6 catchments covered by the project and no further information on this consultation is provided. Table 11 on page 41: local community consultation includes feedback the aforementioned consultation, but it's unclear whether these inputs are reflected in project design because the proposal does not specify which activities will be carried out in which district or specific sub-catchment. Presumably the 6 sub-catchments face similar challenges and were selected accordingly, but this background information is missing. **CAR6**: Please ensure that a comprehensive, gender-responsive consultative process has taken place, and involved all direct and indirect stakeholders of the project/programme, including vulnerable groups and taking into account gender considerations. Please ensure that the stakeholders involved in the consultation process are identified in the project/programme proposal with attention to minority groups, marginalized and vulnerable groups, and indigenous people in the project/programme target areas, where relevant.

		CAR7: Please include a report documenting the consultative process, including: a) the list of stakeholders already consulted (principles of choice, role ascription, date of consultation), b) a description of the consultation techniques (tailored specifically per target group), c) the key consultation findings (in particular suggestions and concerns raised).
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**No.** The project will receive (unspecified amounts of) co-financing, including from the GoR for the costs of executing the project (p. 61). **CAR8:** Please include a justification for the requested financing based on the full cost of adaptation reasoning.
	12. Is the project / program aligned with AF's results framework?	**Yes**, as outlined on page 54.
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes**, as outlined on page 43 but more details are needed. **CR13**: Please provide more details on the PES scheme mentioned on page 43 and how this will continue beyond the project. **CR14:** Kindly provide details to ensure that all aspects of sustainability are addressed, including but not limited to economic, social, environmental, institutional, and financial.
	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**No.** The project contains USPs. Table 12 presents risk findings for the 15 principles of the ESP. No justification is provided for any of the findings. The risks for several of the principles have not been adequately

		identified (e.g. greenhouse gas emissions from the cattle provided, or risks to indigenous peoples, or risks of resettlement). Table 13 then reflects that situation after implementation of management and mitigation measures for each of the principles, resulting in no residual negative impacts. **CAR9:** Please identify the risks and impacts of the project activities, in compliance with the AF ESP and GP. The larger VCRP project, of which the proposed project is part, includes elements that would not comply with AF Operational Policies and Guidelines, including the ESP and GP, and thereby present risks of reputational damage to the AF by their association. **CR15:** Please clarify how environmental and social risks associated with the VCRP project will not present risks of reputational damage to the AF. How will the IE ensure that project implementation is in compliance with the AF ESP and GP when the project is such a minor component in a much larger project? The project is listed as Category C. An “inclusion assessment” is mentioned but no information is provided on when it will occur. There is also mention of “worker grievance redress committees” but no further details are included. The risks table cites the possible risk of “HIV/STDs and prostitution among workers”, but no data is provided on the number, presence, etc. of these groups. Likewise, the proposal states there are no identified risks to indigenous groups, but no details have been included on whether indigenous groups are present or whether they

		have been consulted. Table 14 on page 47 “Identified Project Risks and Mitigation Strategy” also cites potential risks to persons with disabilities but no data has been provided on PWD or whether they have been consulted. Despite the aforementioned identified risks, the risks checklist states that no further assessment is required for any of the AF ESP. **CR16:** Please provide more details on how the project will ensure gender considerations throughout implementation. Please see **CAR1** and **CR8.**
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	***Yes.*** However, Rwanda has a balance of US$10,030,381 under the country cap. Along with this current proposal presented as 10M but in fact is $11,465,960. The components sum to $10M before EE and IE fees. Once these are factored in the total goes up to $11,465,960. **CAR10:** Please amend the proposal budget to address the budget overage. There is another submitted “Enhancing adaptation through sustainable green settlements and climate-resilient livelihoods in the Volcano Region of Rwanda” proposal valued at $10,622,560.00. **CR17:** Please indicate which if these two proposals will be prioritized for approval by the Government of Rwanda.
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**Yes.**

	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**Yes.**
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes**, the Ministry of Environment is Board accredited IE.
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	Implementation arrangements are included on page 50, however more details are needed on how implementation arrangements will incorporate gender-responsive elements as appropriate. For example, the project budgets a social and environmental specialist, but not a gender specialist. Who will conduct the regular anti-GBV training mentioned on page 50, or ensure that gender considerations are mainstreamed throughout project activities? **CR18**: Please provide more information regarding how the project will incorporate gender-responsive elements.
	2. Are there measures for financial and project/programme risk management?	**Yes**, as outlined on page 47. However, since the MoE is co-financing a portion of the project execution costs, more information is needed on what the MoE will specifically cover. **CR19:** Please provide a clear breakdown of which portion of the project execution costs will be co-financed by MoE from the notes on breakdown of project execution costs.
	3. Are there measures in place for the management of for environmental and social risks, in line with	**No.** The risks identification does not meet the requirements of the AF ESP and GP. There is no information of impact

	the Environmental and Social Policy and Gender Policy of the Fund?	assessments that would have generated an ESMP. The project includes USPs. Table 14 and 15 on page 47-48 include a list of identified risks and mitigation strategies, but more information is needed, including clearly allocated roles and responsibilities for its implementation of risk management. There is no dedicated grievance mechanism and more information is needed on opportunities for consultation and adaptive management. No gender specialist is contemplated in the budget. **CAR11:** Please comply with the AF ESP and GP. **CAR12:** Please include a dedicated and accessible stakeholder grievance mechanism. Please see **CAR1, CR8 and CR18.**
	4. Is a budget on the Implementing Entity Management Fee use included?	**No.** There is some information on M&E under the IE, and associated costs on page 47, but it is not a full breakdown. **CAR13**: Please provide a breakdown of the Implementing Entity Management Fee. Please see **CR19.**
	5. Is an explanation and a breakdown of the execution costs included?	The execution cost includes an unspecified “Contribution to VCRP program operations at RWB” of USD 1,050,000. **CR20:** Please clarify this element of the execution fee.

		The cost for the purchase of three vehicles is very high (USD 315,000). Component 5 (6 in the budget) includes provisions for a final evaluation, which should be included in the EE fee.
	6. Is a detailed budget including budget notes included?	**No.** The table presented lacks activities. It has no meaningful budget notes. Additionally, more details are needed regarding how the project will budget gender responsive implementation. **CAR14:** Please include a detailed budget and budget notes. Please see **CR18**.
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	M&E arrangements and budget are provided on page 60, but more information is needed, particularly with regard to gender-responsive implementation. Sex-disaggregated data are not mentioned. Please see **CAR1, CR8** and **CR18.**
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	**Yes**, on page 51.
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	**Yes**, on page 57.

	10. Is a disbursement schedule with time-bound milestones included?	**Yes**, as per information included on page 64.

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: **Enhancing adaptation through catchments restoration 6 sub-catchment of Mukungwa catchment in Rwanda**

Country: Rwanda

Thematic Focal Area:

Type of Implementing Entity: National Implementing Entity

Implementing Entity: Ministry of Environment

Executing Entities: Rwanda Water Resources Board

Amount of Financing Requested: USD 10,000,000.

Letter of Endorsement (LOE) signed: Yes ☐ ☐ No ☐ ☐

NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☐☐ This proposal has been submitted before including at a different stage (concept, fully-developed proposal)

☐☐ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

Contents

Project/Programme Background and Context:

National Context and Project Rationale

With a population of 13.2 million and a land size of 26,338 km^2, Rwanda has one of highest population densities in the world, at about 503 people/km^2. Despite land scarcity, rain-fed subsistence agriculture was only recently eclipsed by the services sector as the predominant sector of the economy, contributing about 23% of gross domestic product (GDP). GDP reached USD 1,004 per capita in 2022[1] – but certainly lower in the Volcanoes region and the adjacent Vunga corridor which has a large rural population. The average annually incomes for the districts that make up the region are – Burera (USD 362.8), Musanze (USD 500.4), Nyabihu (USD 320.7), Ngororero (USD 299.9) and Rubavu (USD 477.0). [2]

Climate change in Rwanda is associated with flooding and landslides in the rugged and steep topography that covers the western and northern region of the country. It negatively affects water resources, agricultural production, biodiversity, human health, fish and forestry and other vulnerable ecosystems, with further impacts on the economy. The country's temperate tropical highland climate (with two rainy seasons and two dry seasons) in the recent years is associated with flooding and landslides that result in loss of life, damage to property and infrastructure, livelihood assets, soil erosion and water pollution – see figure 1.

Figure 1: Floods and Landslides in Rwanda, Source: WMO & ResearchGate

Key Issues, Challenges, and Trends

Climate (current and future)

Climate change appears to be taking effect in Rwanda and is one of the defining challenges which will impact policy and strategy, increasing the need for sustainability and resilience. Extreme floods and droughts are estimated to reduce the East African region's long-term growth by approximately 2.4% of GDP per annum (Global Water Partnership, 2016). The 2022 Rwanda Country Climate Development Report (CCDR) estimated that if these risks materialise, Rwanda's GDP levels can drop by between five and seven per cent below baseline in multiple years by

[1] National Institute of Statistics of Rwanda, retrieved online at https://www.statistics.gov.rw on 9-7-2023.
[2] National Institute of Statistics of Rwanda, LFS 2022

2050, with negative impact on private consumption, exports, and government revenues[3].

Potential impacts include increased temperature. Rising temperatures may result in an increase in evaporation rates and harsher weather conditions. Water quantity will be affected as a result, as well as water quality due to higher temperatures, land use changes, impacts on rivers and lakes, changes to physio-chemical parameters, micro-pollutants and biological parameters. Rising temperatures result in environments conducive for malaria vectors to thrive, thereby implicating public health issues. An increase in the intensity of extreme events may result in the event of a combination, or all, of the following hazards:

- Increased intensity of rainfall
- Increased frequency of floods
- Prolonged droughts
- Increased frequency of droughts

Climate change is also expected to bring about unpredictable weather patterns that will have significant impacts for Rwanda. Given that most farmlands are rain-fed, inconsistent and uneven rainfall will make farming difficult. The unpredictability also makes long-term planning challenging and creates uncertainty in prioritisation of short-term adaptation strategies. Increased severity of droughts will increase the issue of water scarcity, food insecurity, and inflation. It will also lead to increased malnutrition and a likely increase in the number of children dropping out of school due to families migrating to better lands or needing more labour to maintain yield. (East African Community, 2011; Tramberend, et al., 2019). Although changing climate will affect all groups, the impacts on women and girls will be greater, as they are likely to spend more time collecting water from distant sources in periods of drought. They are also disproportionately affected by the risk to waterborne diseases during floods because of lack of access to safe water (UNESCO; UN-Water, 2020)

Resource issues (variability, quality, protection)

Flooding events in Rwanda, which are often accompanied by landslides, occur regularly in the northern, southern, and western parts of the country because of heavy rainfall. Floods not only are a dangerous hazard, but they also affect the water quality (Bizuhoraho, Icyimpaye, & Nadia, 2018). The deterioration in water quality also has grave economic impacts because it increases the cost of doing business, as many enterprises are forced to treat water before being able to use it in their industrial processes, and has an increased cost to municipalities and cities to treat water to drinking water standards (Rwanda Ministry of the Environment, 2018). The eastern parts of the country are more prone to droughts, which have adverse effects on the agriculture sector and increase the pressure on groundwater resources. Land management is critical to social and economic national development, but land degradation can erode that development and lead to poverty for those that are closely linked to natural resource use.

Climate change risk and impacts in the Volcanoes Region and the adjacent Vunga corridor.

The projected climate change in the Volcanoes Region and the adjacent Vunga corridor, particularly the increase in precipitation, is expected to significantly increase the climate risk in the region. The climate hazard will increase due to increased runoff from the volcanoes and the highlands that surround the Vunga corridor, increasing the risk of flooding and watershed degradation.

Most of the Volcanoes' region and a significant area of Vunga Corridor are in the Mukungwa Level

[3] World Bank Group. 2022. Rwanda Country Climate and Development Report. CCDR Series;. © World Bank, Washington, DC.

1 Catchment of Rwanda. The Mukungwa catchment encompasses Musanze District, most of the Burera District, the southern part of the Nyabihu District, a small area in the Ngororero District, and a tiny fraction of Gicumbi District. The project area concerned in this proposal is made up of 6 Level 3 catchments of the Mukungwa catchments that are in the Districts of Burera, Nyabihu, and Ngororero. These catchments are particularly vulnerable to negative climate impacts.

The VCRP project area is home to over 2.3 million people, and the population in the project area in this proposal is a little over 633 thousand. The communities that live in this region are highly vulnerable to the adverse effects of floods, landslides, and soil erosion, which are projected to exacerbate from increased rainfall due to climate change[4]. A recent flood risk assessment shows that the expected annual damage in the 6 sub-catchments in this proposal amounts to US$1.5 million per year and may increase national food security risks.

Soil erosion and flood risk are the most serious environmental problem in many catchment areas in Rwanda. About 6 million tons of crops, valued at US$76 million (RWF 76 billion), are lost each year due to erosion. In the 6 sub-catchments in this proposal area, an estimated 380 thousand tons of soil are eroded this year.

To identify areas at risk of soil erosion and develop prevention measures, in July 2018, A national erosion risk map based on a spatial model developed by the Government was created in 2018. This risk map informs catchment planning to optimize land use and risk reduction measures.

[4] Republic of Rwanda. (2019). Detailed designs of flood control measures in the Volcano Region, Rwanda: Final report. (link). These numbers exclude the impacts from the recent floods and landslides disaster in May 2023.

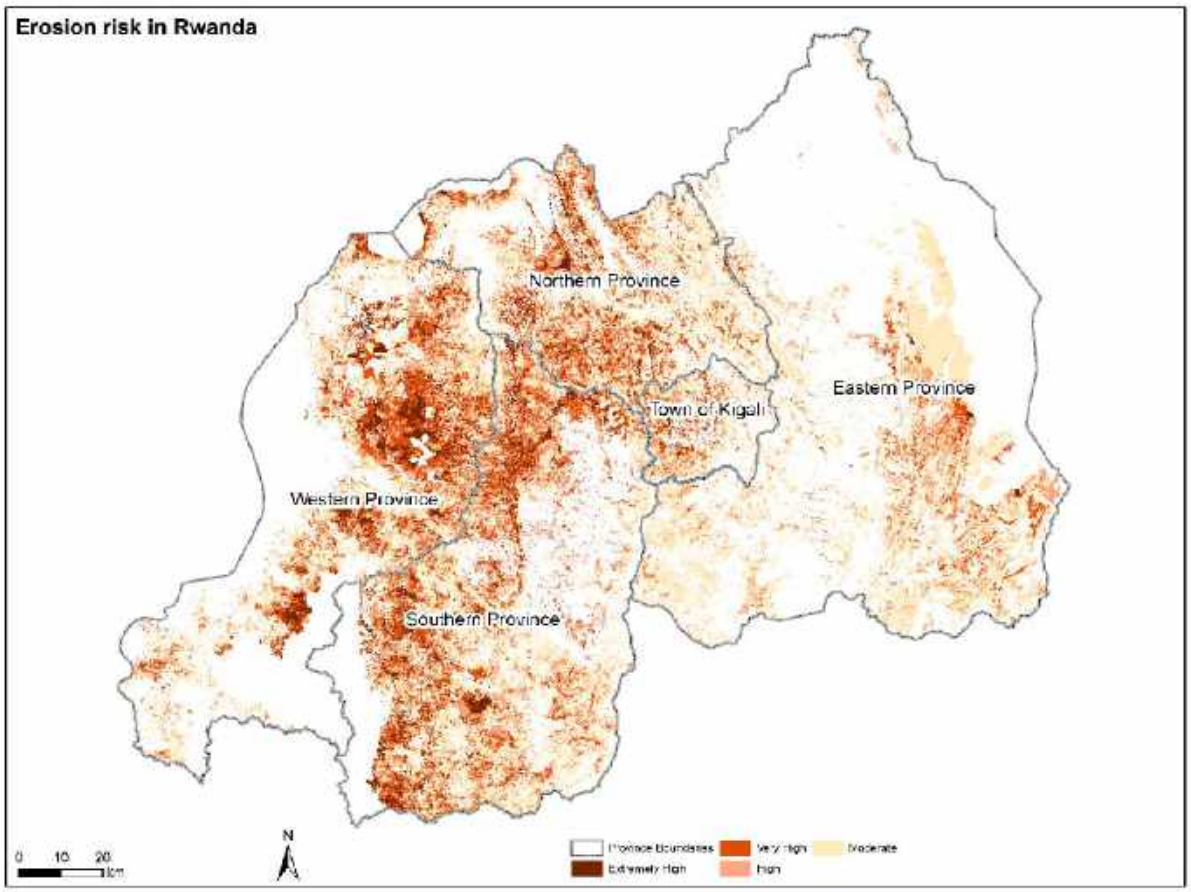


Figure 3: Erosion Risk in Rwanda, Source: Rwanda Water Resources Board

Summary of the analysis of the Climate vulnerability related to flood and erosion in the project site (6 level-3 catchments)

Vulnerability to flood and related climate hazards are the core problem addressed by the VCRP programme (volcano and vunga corridor). Flood modelling and erosion modelling considering as input climate variability (mainly rainfall) and sediment load assessment in rivers have been conducted as part of VCRP climate rationale on the technical feasibility for the project site (6 catchments, see the ESMF and Annex 3).

The annex of the baseline situation presents some of the findings for the erosion modelling. Erosivity factor of the Universal Soil loss equation is highly related Rainfall intensity as presented in various model with 4 stations covering the project area (Bagalwa, R. M., Caroline Chartin, Simon Baumgartner, Sophie Mercier, Muhindo Syauswa, V. C. Samba, M. T. Zabona et al. "Spatial and seasonal patterns of rainfall erosivity in the Lake Kivu region: Insights from a meteorological observatory network." *Progress in Physical Geography: Earth and Environment* 45, no. 6 (2021): 866-884.). The figure 5 is showing how the rainfall intensity varies (standard deviation change) in the project region.

Models have been turned and validated with empirical data and measurements conducted between 2014 to 2023 on farmers plots (plot level in upstream part of the catchment) and rivers and drainage chanels in the district of Burera, Nyabihu and Musanze (close to project site). Some observations have been made in the night of 2nd to 3rd May 2023 (one of the deadliest episodes of flood in the North – West of Rwanda).

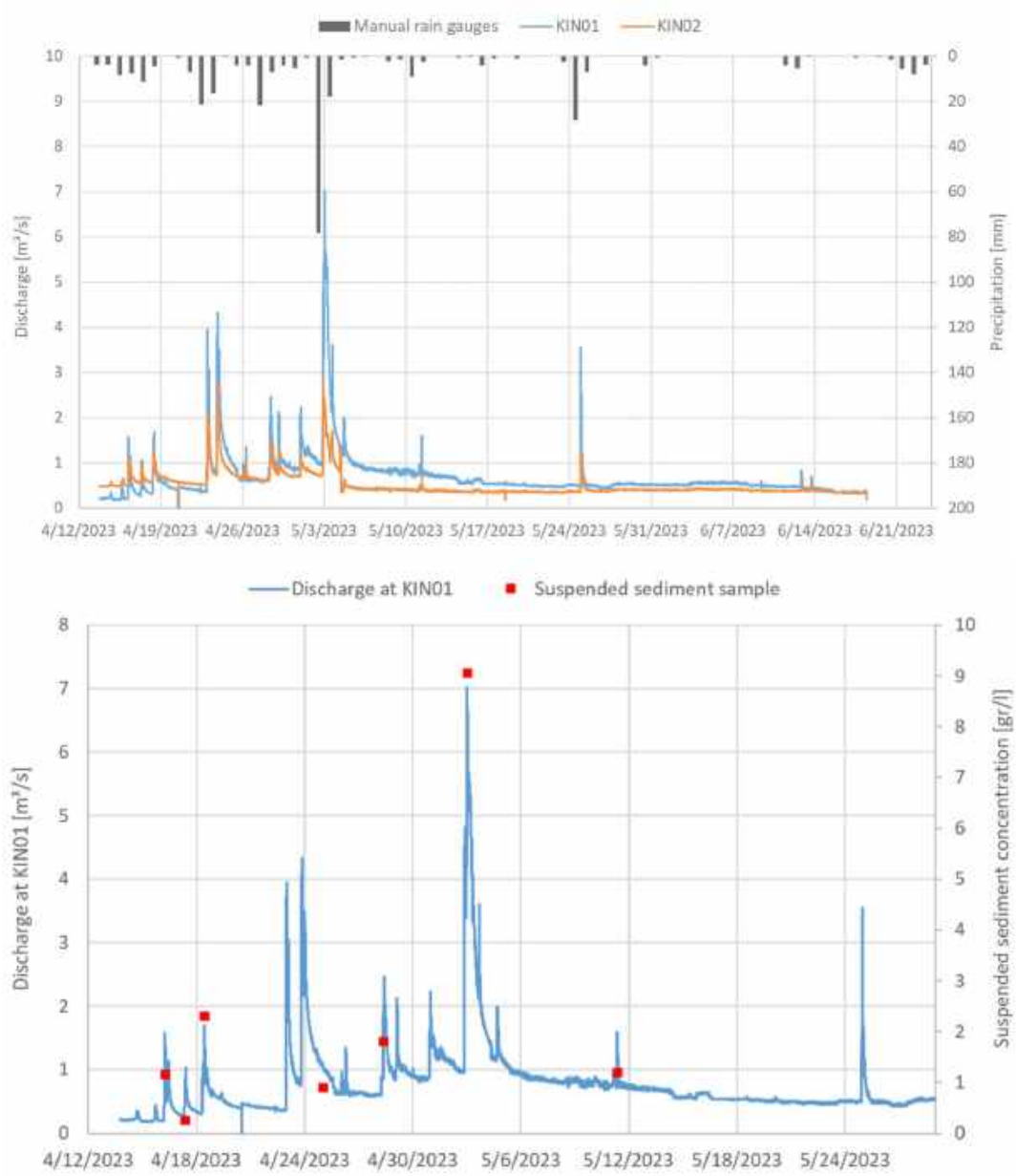


Figure 4: Streamflow modeling vs observation, and streamflow vs sediment load observed in Kinoni catchment (Sher Ingénieurs Conseils, 2024 for VCRP programme under European Union funds)

Erosion is among the aggravating factor of flood (APFM Technical Document No. 21, Flood Management Tools Series © World Meteorological Organization, 2012) and in Musanze district it has been recorded more than 528 tons per ha per year without crop cover (bare soil) due to the combine effect of rainfall, Topography and soil conditions (Rutebuka, 2019).

Plant cover and catchment restoration practices can maintain in situ more than 90% of soil that potentially can be transported. Gully control also is critical because the concentration of water and energy that can transform a huge amount of sediment (gully erosion). Therefore, gully treatment even when that are not covering a large are critical for building resilience to flood and related water hazards.

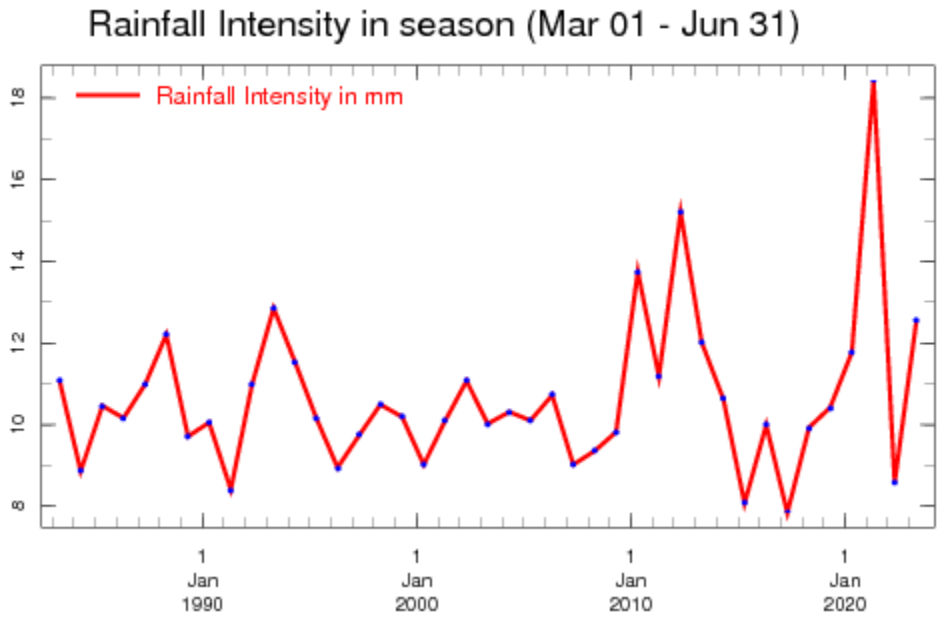


Figure 5: Trend of change in daily rainfall (Standard deviation of rainfall intensity) in the Northern part of the project area [29.56875E-29.60625E, 1.44375S-1.40625S] using the maproom of Meteo-Rwanda (link of the querry: https://shorturl.at/bwIk9)

If catchment restoration and gully treatment are not implemented in those catchments the cost of flood control can be doubled and exceed 50million USD only in the 6 level-3 catchments. Not mentioning the heavy maintenance that will be needed to keep community safe from flood. Sediment transport increases the operational cost of hydropower and water supply while the extreme floods expose the infrastructure of those plants themselves. Users of electricity and water supply plants downstream of the Mukungwa river are among the indirect beneficiaries of or the proposed project.
In the extreme events sediment and runoff observed were higher than the theoretical (model results) emphasizing the need to treat catchment holistically from upstream (catchment approach with catchment restoration coming before planning or constructing flood control downstream). The figure 4 presents the sediments data (observed and modelled) of the 2nd and 3rd May 2023.
The climate model shows that not only extreme events are increasing now but the annual totals are expected to increase in the future up to 2100 inferring even higher extremes in the future. Downscaled climate scenarios for the project site (6 level-3 catchments) are presented in the annex 1.

Rwanda's response to climate change

Climate change is poised to impact all sectors of Rwanda's economy, and to negate some of the country's remarkable development gains unless the country builds resilience and adaptivity to climate change[5]. Climate impacts of significance for agriculture and food security are likely to be temperature increases and more frequent droughts, with the nature and timing of impacts varying across regions. Climate impacts may alter the extent of areas suitable for agriculture and the length of growing seasons, affecting crop yields as well as hunger and nutrition. In addition, climate change may alter the occurrence and distribution of pests that may harm or ruin crops and livestock.

[5] As Rwanda moves up the development ladder, it needs an investment strategy that supports its economic growth and development aspirations – including those in Vision 2020, the Vision 2050 blueprint, and the National Strategy for Transformation (NST) while assuring the continuity and sustainability of such progress in the face of climate change.

Recognizing the urgent need for adaptive interventions, the National Strategy for Transformation (NST1) has prioritized the development of a project for an integrated climate adaptation and economic transformation initiatives under the Volcanoes Community Resilience Project.

The Volcanoes Community Resilience Project

This multi-faceted project's objective is to strengthen climate resilience, reduce the risks of flooding, and improve the management of natural resources and tourism assets in the Volcanoes Region of Rwanda. See the project map below.

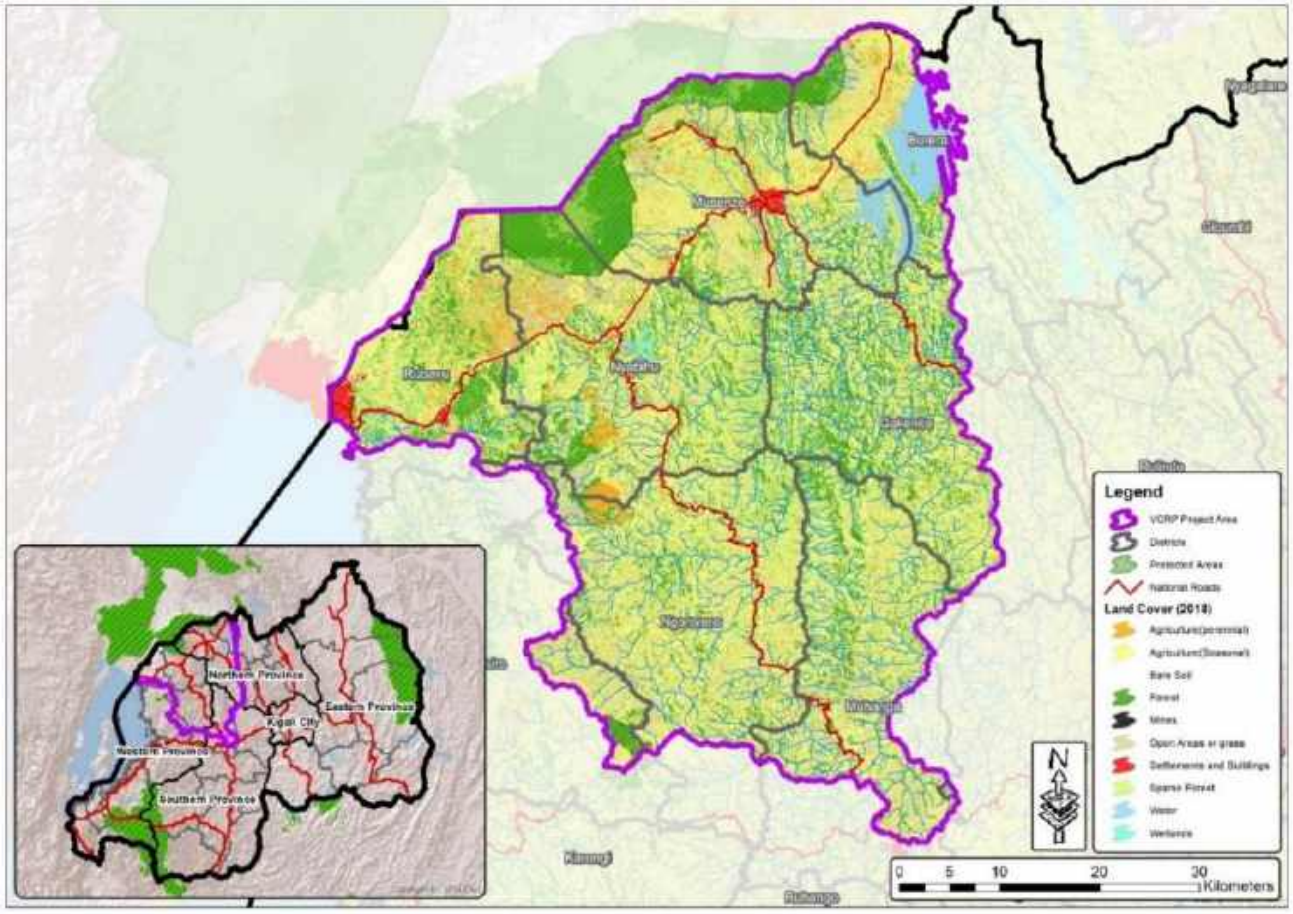


Figure 6: VCRP Programme Map, **Source:** VCRP Project Appraisal Document

The project contains four components, and its implementation has been estimated at USD 494 million. Figure 7 below shows the components and subcomponents of the project.

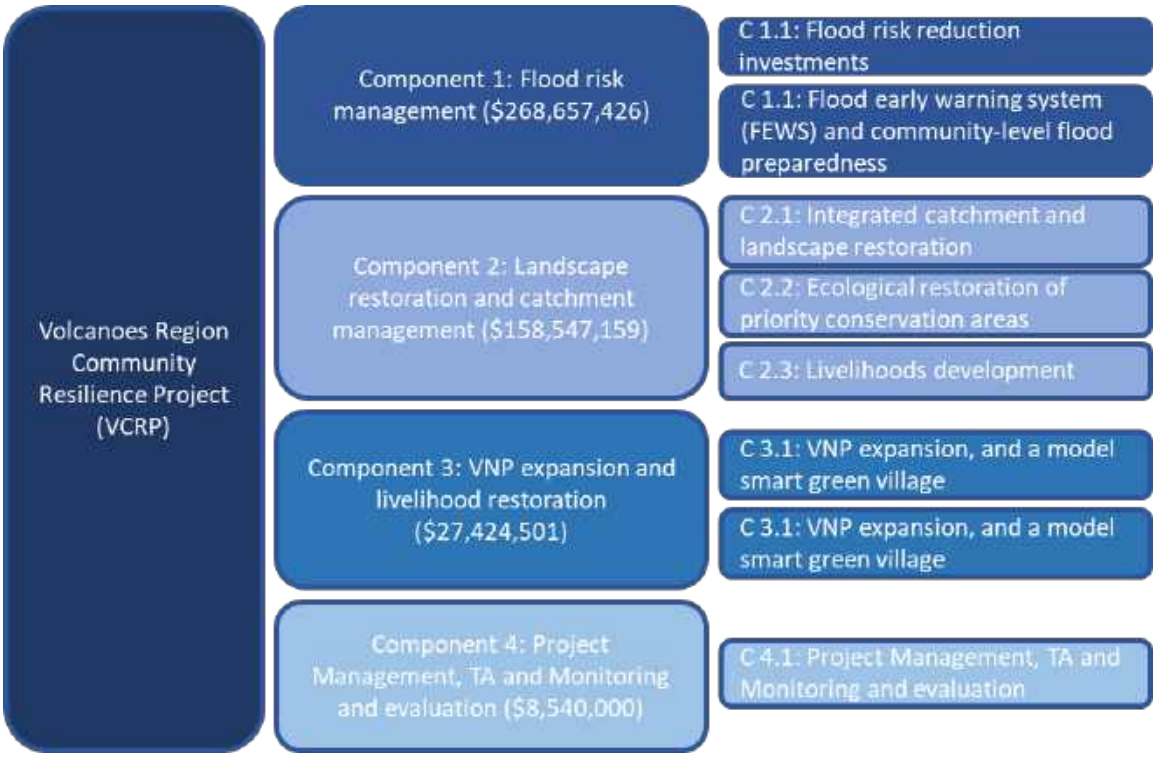


Figure 7 Components of the VCRP, **Source:** Vanguard Economics 2024

The project will be implemented in 3 phases as highlighted in the following table with their respective size of investment. The project is expected to be funded through a variety of sources including the World Bank, the Climate Investment Fund (CIF), the Global Environment Facility (GEF), Green Climate Fund (GCF), Adaptation fund, and Nordic Development Fund (NDF).

Table 1: VCRP project budget

Components	**Phase 1**	**Phase 2**	**Phase 3**	**Total budget**
Component 1: **Flood risk management**	117,948,924	86,584,638	64,123,864	**268,657,426**
Component 2: **Landscape restoration and catchment management**	92,313,333	40,755,780	25,478,046	**158,547,159**
Component 3: **VNP expansion and livelihood restoration**	27,424,501	-	-	**27,424,501**
Component 4: **Project Management, TA and Monitoring and evaluation**	4,500,000	2,393,105	1,646,895	**8,540,000**
Operations	11,081,991	8,415,872	1,790,955	**21,288,818**
Contingency fees 2%	5,065,375	2,762,988	1,860,795	**9,689,158**
Totals	**258,334,124**	**140,912,383**	**94,900,555**	**494,147,062**

Source: VCRP documents

Catchments in Rwanda

Rwanda distinguishes four catchment levels in its National Water Resources Master Plan:

- **2 Basins**: The Congo River basin (Congo Basin) in the west, and the River Nile basin (Nile Basin) in the east are the largest spatial planning scales.
- **9 Level 1 Catchments:** the Kivu and Rusizi Level 1 catchments (feeding into the Congo Basin); seven other Level 1 catchments (feeding into the Nile Basin), namely: Mukungwa, Akanyaru, Upper Akagera, Lower Akagera, Muvumba, Upper Nyabarongo, Lower Nyabarongo catchments.

20 Level 2 Sub-catchments are medium scale catchment boundary, roughly district size, in which, distinguished within these nine **Level 1** catchments, dozens of **Level 3**, and hundreds of **Level 4** micro-catchments.

Figure 8: Levels of hydrologic analysis for Rwanda, with Level 1 on the left, Level 2 in the middle and Level 3 on the right. Source: VCRP Documents

The VCRP project area is subdivided in 66 level 3 catchments (over 311,000 ha) and catchment/landscape restoration activities are planned in all of them. To accelerate the implementation of the project, the 3 implementation phases were further subdivided into 5 investment phases (1a, 1b, 2a, 2b, and 3). Fund mobilization for the first phase of investment (1a) which will cover 21 of the 66 catchments is almost complete, and the VCRP has entered into effectiveness with the World Bank, the first funder of the project.

This proposal to the Adaptation Fund seeks funding to support the catchment restoration activities for the second phase of the VCRP, specifically activities under investment phase 2a. The investment need for catchment restoration activities in phase 2a (see map below) of the VCRP match the funding ceiling of the Adaptation fund (USD 10 million) and the timeline matches the implementation phase of the project. Phase 2a includes 6 level 3 catchments located in the level 1 catchment of Mukungwa and in the following specific districts referring to the figure 6:

- Rubagabaga catchment in the districts of Ngororero (labeled as 1)
- Nyamutera catchment in the district of Nyabihu (labeled as 2)
- Mwora catchment in the districts of Musanze and Burera (labeled as 3)
- Minoga catchment in the district of Burera (labeled as 4)
- Burera-Gisovu catchment in the district of Burera (labeled as 5)
- Kagere catchment in the district of Burera (labeled as 6)

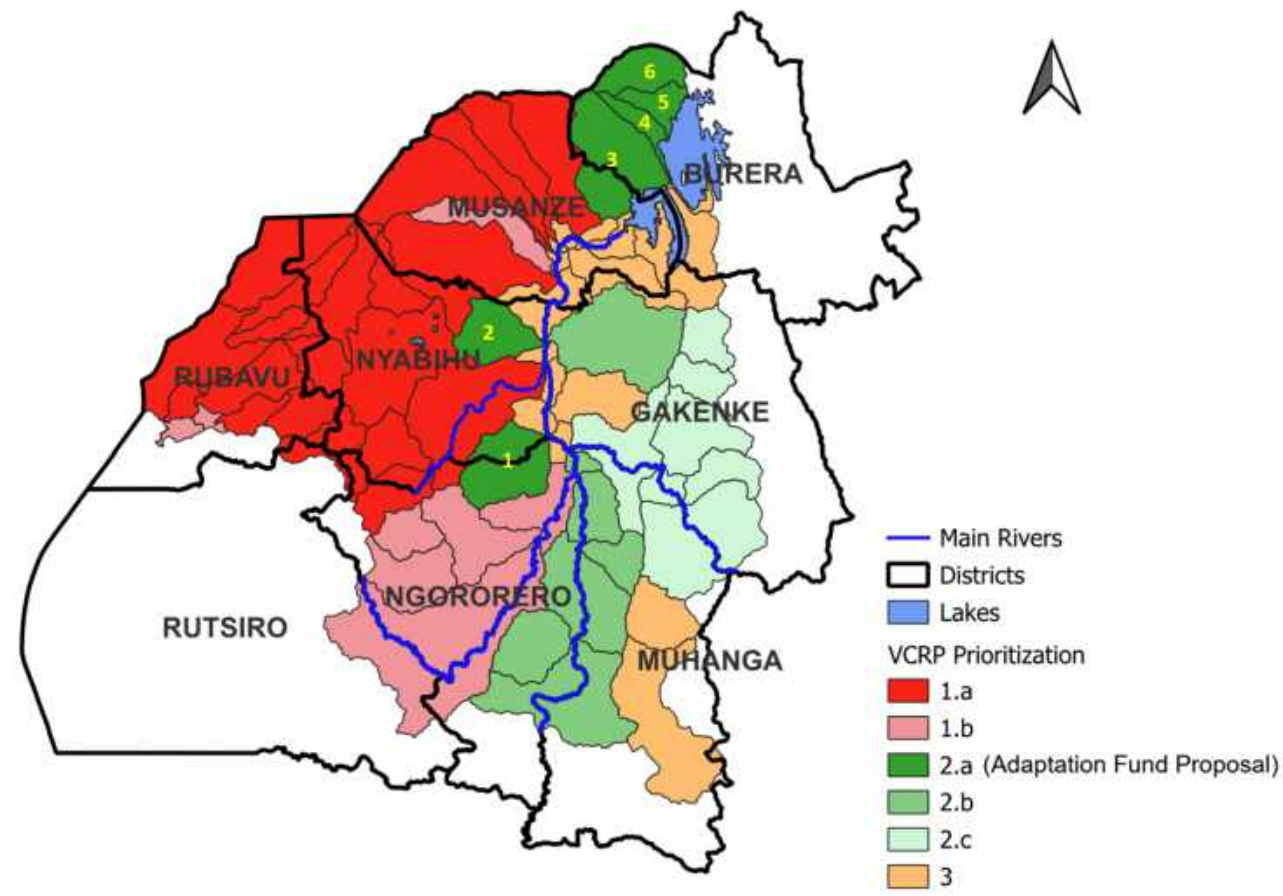


Figure 9: Priority catchment restoration by phases, Source: VCRP Phasing

This proposal has benefitted from recent extensive studies[6] **- See table below**. The interventions of the project are based on climate change forecasts. It has also benefited from a detailed hydrological study of the region, socio-economic condition of the communities in the Mukungwa catchment as well as literature reviews.

Table 2: Studies that informed this proposal

#	Studies
1	Mukungwa Catchment Management Plan (2023-2030)
2	Revision of Rwanda's Green Growth and Climate Resilience Strategy (2021) – Water Resources Concise Sector Working Paper
3	VCRP – Project Appraisal Document
4	VCRP - Environmental and Social Management Framework (ESMF) Report
5	VCRP - Stakeholder Engagement Plan
6	Building Climate Resilience by Implementing the Upper Nyabarongo Catchment Restoration Plan in the Mbirurume Sub-catchment of Rwanda – Environmental and Social Impact Assessment
7	Community Approach Guidelines Part I: Guidelines for a Community Participatory Approach to Landscape Restoration and Integrated Water Resources Management in Rwanda

Source: Vanguard Economics 2024

[6] in the region on geophysical and socio-economic conditions and trends, as well as from the availability of better quality and more detailed climate studies and climate change forecasts.

Catchment and Landscape Restoration in Mukungwa Catchment

Mukungwa Catchment, spanning 1,830km² and home to over 1,250,000 people, exhibits diverse terrain and significant geological features. According to the RWB database of 2018, which utilized data from Landsat-8 (30m resolution) and Sentinel-1 (20m resolution), the catchment's land use is predominantly agricultural land (44%) and forest cover (approximately 38%). A notable feature is the Rugezi marshland, covering 6400ha in the east, recognized as a protected area. Another key area is the Volcanoes National Park, encompassing 160 km² with its natural alpine forest, crucial for biodiversity and contributing to the national economy through tourism. The region's soils, mainly andosols in the North and Northeast and a variety of others in the South, central, and Eastern areas, have high infiltration rates, leading to a significant groundwater recharge of over 300 mm/year, about 25%. A large part of the catchment supports seasonal agricultural crop production, with approximately 72% of the population engaged in rain-fed subsistence agriculture.

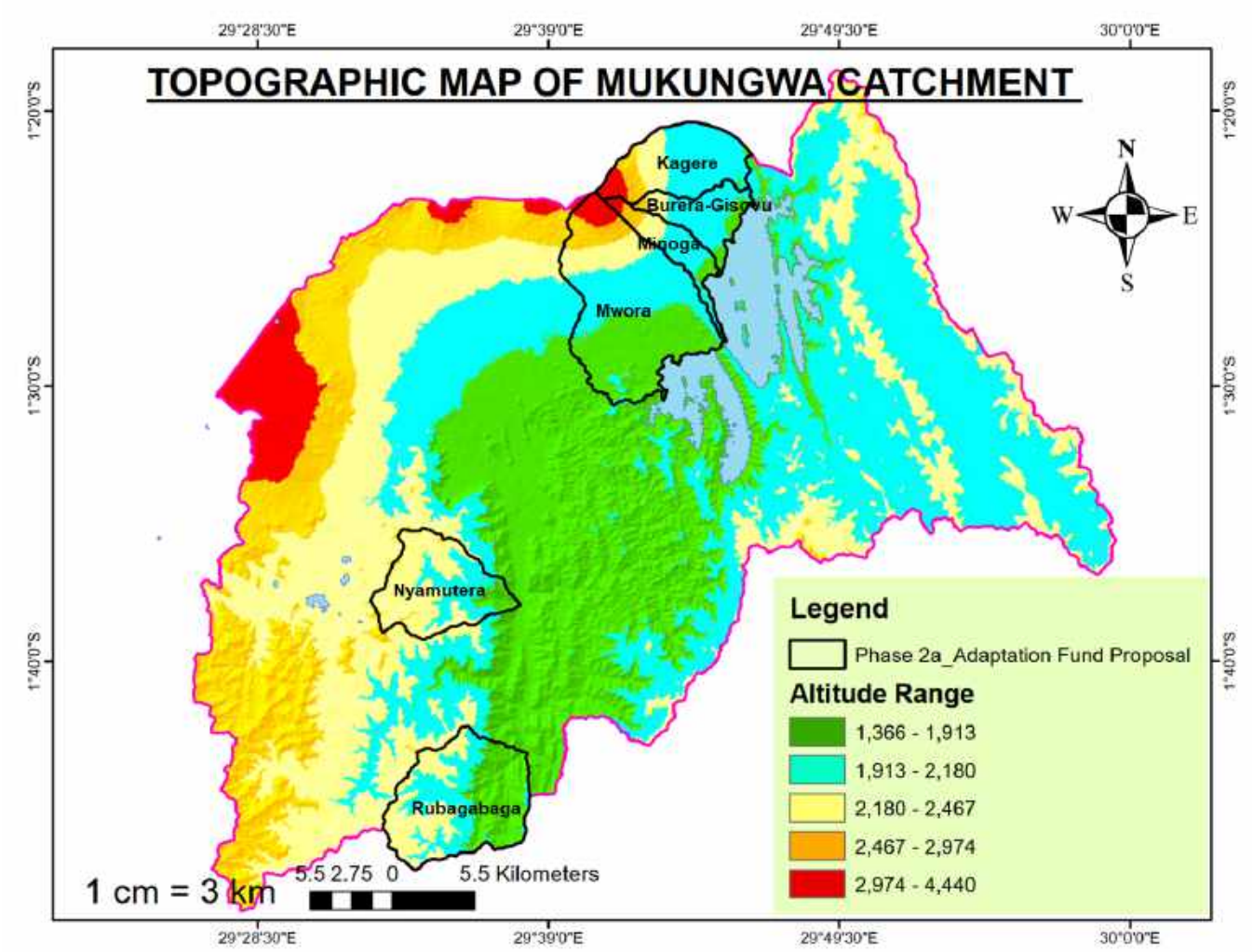


Figure 10: Topographic map of Mukungwa catchment Source: Mukungwa Catchment Management Plan 2023-2Issues and opportunities identified Mukungwa catchment.

Climate related impacts

Due to the geophysical make-up of the catchment, with steep slopes and friable soils in combination with intense seasonal rainfall, land use in the region is inherently susceptible to environmental disasters. The high population density and extreme poverty in the region imply that the land is intensively cultivated but without due regard for the geophysical risk of disasters, which are predominantly expressed through landslides and flooding. Geophysical disasters lead to economic losses at different levels: damage in infrastructure, crops and livestock; disruption of the economic system in communities where people were displaced; fiscal transfer to disaster response and crowding out of other functions as manpower is concentrated on disaster response rather than productive activities following a disaster.

Soil erosion

Soil erosion is the most serious problem in reference to sustainable management of land and water resources. The main factors affecting sediment yield include land use and vegetation cover, topography, soil and climate. In order to describe the areas with high soil erosion risks and to develop adequate erosion prevention measures for Rwanda, the national erosion risk map was generated in July 2018 based on the methodology “Catchment Restoration Opportunity Mapping (CROM)”, which is a spatial model developed by ESRI Rwanda in coordination with and the Ministry of Environment through Rwanda Water Resources Board (RWB) and the IWRM Program (Water for Growth Rwanda-W4GR). The CROM model identified six erosion risk classes including (1) No risk, (2) Low risk, (3) Moderate risk, (4) High risk, (5) Very high risk, and (6) Extremely high-risk zones of erosion.

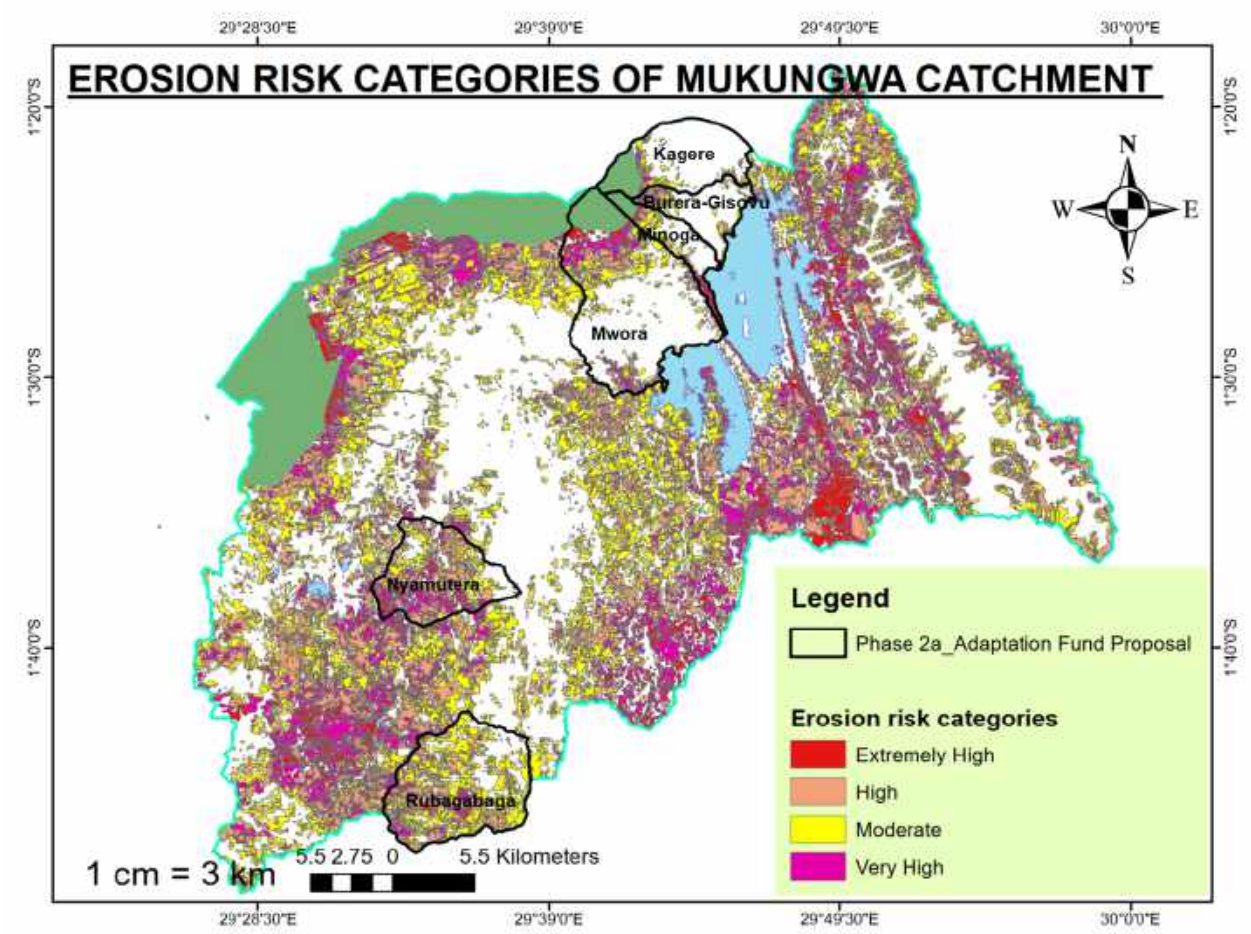


Figure 11: Erosion Risk Map for Mukungwa catchment Source: Mukungwa Catchment Management Plan 2023-2030.

Livelihood impacts

The catchment is characterized by high population density and a relatively higher dependency on rain fed subsistence agriculture. The sector is heavily impacted by climate related disasters that are frequent in the catchment especially floodings that swipes away crops and soil erosion that significantly reduced the land productivity. The ultimate impact of these events is that the population remains trapped in a multidimensional poverty cycle. For example, Nyamutera catchment fall in Nyabihu district which has been assessed to have 46.8%[7] poverty level. Rubagabaga catchment fall in Ngororero district which has 47.7%[8] poverty level. Kagere, Burera-Gisovu, Minoga, and part of Mwora catchmets fall in Burera district which has 49.8% poverty level[9].

[7] Rwanda Population and Housing Census 2022
[8] ibid
[9] ibid

Project/Programme Objectives:

The overall objective of this project is to enhance climate adaptation resilience in the Mukungwa catchment, and specifically in 6 sub-catchments of Rubagabaga, Nyamutera, Mwora, Minoga, Burera-Gisovu, and Kagere. This will be done by implementing landscape restoration measures to reduce water runoff, soil erosion, and rehabilitate degraded areas and hence increase soil productivity. One of the major challenges identified in the catchment is soil erosion, which significantly impacts ecosystem service supply, land productivity and water resources (quality and quantity, and timing). The foundation of sustained ecosystem service supply is catchments that are in good health. The objective targets to improve the status of the catchment through targeted landscape restoration initiatives. For prioritized sub catchments, this objective aims to implement actions that include:

1. Rehabilitation of degraded areas through terracing, afforestation, reforestation, agro-forestry, and hedgerows practices.
2. Gully rehabilitation.
3. Landscape restoration supporting measures.
4. Community capacity building and knowledge management
5. Monitoring, Evaluation, and Learning

Landscape/catchment restoration activities will be implemented using the community-approach. Details on this approach and implementation arrangements are provided in the Implementation Manual attached to this proposal.

Project/Programme Components and Financing:

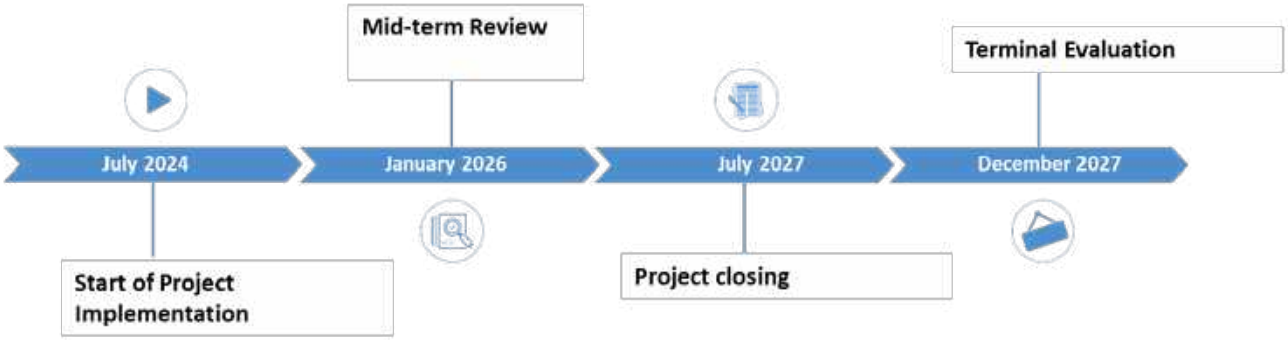
Table 3: Project components and financing

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Rehabilitation of degraded areas	Hectares terraced.	1. Climate resilient watershed	5,626,190
	Hectares afforested	2. Improved water security	110,147
	Hectares reforested		110,322
	Hectares of land under agroforestry	3. Resilience to climate risks	87,888
	Kilometers of hedgerows planted		247,683
2. Gully rehabilitation	Kilometers of gullies rehabilitated		441,610
3. Landscape restoration supporting measures	Water harvesting structures installed		850,200
	Cows distributed to households		910,000
4. Community capacity building and knowledge management	Capacity building events		150,000
5. MEL	Recommendations implemented		1,465,960
6. Project/Programme Execution cost			850,000
7. Total Project/Programme Cost			9,234,040
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			615,960
Amount of Financing Requested			**10,000,000**

Source: Vanguard Economics 2024 & Rwanda Water Resources Board

Projected Calendar:

Table 4: Project Calendar



Source: Rwanda Water Resources Board

PART II: PROJECT/PROGRAMME JUSTIFICATION

A. Project Components

Sustainable Land Management and Catchment Restoration measures
Subcomponent 2.1 will support **Sustainable Land Management (SLM)** and catchment restoration interventions. The focus will be on enhancing terraces, restoring gullies, promoting agroforestry, and undertaking afforestation efforts. These interventions will have a positive impact on approximately 71,000 of residents of 6 sub-catchments who adopt SLM and climate change adaptation practices.

Interventions are selected using **Catchment Restoration Opportunity Mapping Decision Support System (CROM-DSS)**, a tool that is widely applied by the RWB. The selected interventions are afforestation, reforestation, agroforestry, bench terrace, contour bank terrace, riverside protection (plantation), hedgerows, water harvesting. Interventions are recommended to address the existing land degradation and the associated problems and sometimes they are combined, and, in some cases, they are recommended for certain areas. The recommended interventions are proven technologies in Rwanda and elsewhere in Africa such as Ethiopia and Kenya. The most recommended intervention is terracing followed by hedgerows and water harvesting structures. The catchment management measures will also integrate climate-smart interventions whenever feasible for maximum impact. Additionally, beneficiaries will be supported to adopt appropriate agronomic practices and cropping systems through climate smart agriculture to enhance the adaptive capacity of the communities.

It is estimated that full treatment of the 6 Level-3 priority catchments will result in:

- over 0.3 million tons of topsoil per year will be conserved.
- Additionally, different land uses such as agricultural fields, road networks, rivers, lakes, dams, and wetlands located downstream will be protected from the sediment loads.
- The impact of soil erosion on crop production will be minimized. Adoption of sustainable land management practices such as contour bank terraces and strengthening the bunds with various multipurpose plants will retain surface water and protect the agricultural land from splash and accelerated erosion. Conservative estimates show that the impact of catchment restoration in the priority 2 areas will help in protecting from loss approximately 490,000 tons of crops per year.
- Soil erosion causes soil fertility depletion, which is the primary cause of low agricultural productivity in Rwanda. The practices also augment soil fertility and improve agriculture productivity.

Table 5: Project components and their contribution to climate resilience

Adaptation activity	Contribution to climate resilience
Component 1: Rehabilitation of degraded areas	
Terracing – The 6 proposed sub-catchments are subject to severe soil erosion challenges brought on by erosion-prone landforms -See figure 7 -Topography - and long-term human activities that alter the physical landscape, cause substantial soil erosion, and adversely affect surface waters. The project will implement terracing on 6,400 ha in the 6 sub-catchments.	This activity will contribute to the community's resilience in terms of soil erosion control by reducing the speed and flow of water downhill, and also retain the topsoil and nutrients needed for the growth of crops thereby minimizing soil erosion. This is crucial for maintaining soil fertility and agricultural productivity, which are vital in a region where more than 70% of the population relies on agriculture.), effective water management, more productive farming. Effective water management and productive farming are vital for food security in the region, especially as climate change impacts poses risks to agricultural yields. The process of building and maintaining terraces will also involve community efforts, which will strengthen local knowledge and practices around sustainable land use and climate adaptation strategies.
Afforestation and reforestation – The National Forest Policy recognizes the crucial role forests play for the livelihood of Rwandese people and governs a process of restoring degraded landscapes and protecting natural forests. In 2019, Rwanda reached its goal of increasing forest cover to 30% [14] of total land area one year ahead of plan despite continuing population and land pressures. It is now aiming to fulfil its Bonn Challenge commitment of bringing 2 million ha under restoration by 2030.	Rwanda benefits from afforestation both social-economically – food security, medicine, construction materials, recreational services, etc- and environmentally by increasing climate resilience. By law, slopes over 60% need to be forested against erosion and landslides [15]. In the Mukungwa catchment where the topography is challenging, afforestation is seen as a reliable solution to inherent watershed degradation related to climate related events. In the selected catchments for this proposal, 284 hectares of afforestation and reforestation are planned. The rest of the land, which is predominantly used for agriculture, will harness the agroforestry system. This activity will contribute to the community's resilience in terms of carbon sequestration, water cycle regulation, microclimate regulation, climate resilient livelihoods, flood control, and enhancing agricultural resilience.

[14] https://www.newtimes.co.rw/article/170943/News/rwanda-reaches-30-forest-cover-target
[15] Rwanda Water Portal

Agroforestry – Same as forestry, agroforestry is also a major component of the catchment rehabilitation plans in Rwanda to restore and protect the natural infrastructure.	Agroforestry supports the livelihoods of farmers through the provision of additional biological products such as fruit, as well as services - supporting (soil fertility and moisture), regulating microclimate and water and air quality. Agroforestry contributes to healthy catchments and healthy people. Agroforestry in combination with terraces is necessary to reduce erosion and increase infiltration. This intervention will also significantly increase the community's resilience in terms of reduced dependence on external inputs, resilience to extreme weather events as well as supporting pollinators and natural predators of crop pests. Additional benefits of agro-forestry includes food security, can be used as fodder for livestock, can be used as support for climbing beans etc.
Hedgerows - Planting hedgerows will play a significant role in combating soil erosion. Their roots help to bind the soil together, reducing its susceptibility to erosion. They also slow down water runoff as well as acting as barriers that capture soil particles and prevent them from being washed or blown away, thereby reducing the loss of topsoil. This mechanism works particularly on steep slopes which fit well the topology of the 6 sub-catchments.	Same as agroforestry's contribution to climate resilience, hedgerows will also contribute to carbon sequestration, biodiversity enhancement, and most importantly, soil conservation.
Component 2: Gully rehabilitation	
Gully Rehabilitation – Given the steep topography, the geology, and the rainfall intensity in the project area, gullies are easily formed. Gullies decrease the stability of hillsides and increase the soil erosion rate. Gullies can be rehabilitated before they become larger, longer, and deeper by implementing measures such as bamboo plantation along gullies, building check dams to decrease water flows/erosion rate, and adding gabion walls where needed.	This intervention will result in soil retention, hillside stabilization, better water quality downstream, and resilience to rainfall extremes. Controlling gully erosion (in gully erosion, the running water creates deep channels known as gullies) has higher energy since gullies are a great contributor to flash flood and other water related disasters - dense gully network facilitate the occurrence of extremely destructive floods. Unless steps are taken to stabilize the disturbance, gullies will continue to move by headward erosion or by slumping of the side walls. It is far easier and more economical to do repair work in the early stages of newly formed gullies; and reducing the associated sediment losses.

Component 3: Landscape restoration supporting measures	
Water harvesting – The 2022 State of soil erosion Control in Rwanda report by IUCN states that built-up area, although relatively small (in rural areas which is the case in the two selected catchments), accelerates water velocity, runoff, and flow accumulation which creates severe gullies downstream. In such areas, storm-water management facilities, as well as the rainwater harvesting infrastructure, should be established to collect storm water from houses. The project will provide rainwater harvesting systems to the 1,300 households in the proposed intervention catchments.	The objective of improving livelihoods and increase resilience to heavy rains through provision of supporting measures is to ensure the sustainability of the proposed catchment restoration activities which are reinforced by more rational use of natural resources (e.g. rainwater). Additionally, animal husbandry, preferably through cows should also play a greater role in maintaining soil fertility necessary for more intensive agriculture.
Cows distribution - The promotion of livestock development through animal distribution by programmes such as Girinka was identified as one of the solutions to contribute to improve soil fertility necessary for more productive agriculture. The project will provide cows to 1,300 households (equivalent to 5200 people at least 50% of women) in the proposed intervention catchments.	Cows will be distributed using the Girinka program's framework. The Girinka program was established in 2006, it provides specific guidelines for the selection of cows, selection of beneficiaries (which include having constructed a cow shed, having the ability to feed the cow, etc.), and the preparation and training of beneficiaries. RWB has distributed more than 1,000 cows as supporting measures for catchment restoration activities using the Girinka framework. Details on the Girinka program are provided in Annex 7.
Component 4: **Community capacity building and knowledge management**	

Training Workshops and Educational Programs – The capacity building and implementation of the catchment restoration activities through community approach is based on Village Land Use Plans. Village Land Use Action Planning combines planning, implementation, and learning (based on monitoring) to improve future planning and implementation. Community members go through cycles of planning-implementation-monitoring-observation-learning-planning. A group of people with a shared concern (e.g. soil erosion, soil fertility, livelihoods), plan, implement and learn from their actions. VLUAP is an overall approach, uses various methods and tools, e.g. mapping, GIS, stakeholder analysis, and is suitable when: - A problem is complex (e.g. integrated landscape challenges); - People (e.g. farmers) are not sure where to start (e.g. soil erosion and terracing); - Action involves people with differing perspectives (e.g. men and women); and - The situation may change (e.g. reducing fertility, increasing floods). Based on the VLUAPs capacity building of project beneficiaries may be required (e.g. agroforestry, organic farming, terrace layout, grass strips, etc.). Training will be provided by the appointed Service Providers in collaboration with RWB, the Districts (Hub and DPCC) and/or other IAs and programs	Education is an essential factor in the ever more urgent fight against climate change in Rwanda. As part of the first phase of investment of the VCRP, a service provider will be hired to conduct community mobilization and capacity building of the community linked to climate change adaptation. This capacity building will help communities understand and tackle the consequences of climate change while encouraging them to change their behaviour and help them to adapt in order to build resilience to climate shocks.

Knowledge and lessons generation -Guidelines for landscape restoration and catchment management will be developed in order to guide the successful implementation: The Guideline will aim at building on existing catchment development efforts in Rwanda and harmonize and consolidate planning procedures at the grass-roots level. A well-developed guideline provides extension agents and rural communities with a workable and adaptable planning tool. The Guideline will be used in all agro-ecological zones whether located in a low rainfall or high rainfall area. The Guideline will guide sustainable land management in a severely degraded and food-insecure area or in a food secure and not yet seriously affected by land degradation; in a cereal-plough farming system or on a perennial-hoe farming system. The guideline will provide practical guidance on the correct selection of technologies under different conditions and their sequential implementation. -Technical Assistance (Service Provider) will support an integrated catchment management approach in catchment management and landscape restoration actions including supporting the establishment and operations of the Community Coordination Committees (CCCs) at micro-catchment level to ensure local stakeholders are involved in the design and implementation of targeted restoration activities. Baseline characterization of catchments assessment will be a prerequisite for development of a robust and tailored catchment plan. The aim of this activity is to gather a comprehensive database on the key characteristics of the catchments for better understanding of their biophysical, socio-economic and institutional profile. Data collected should include land ownership systems, land use patterns, area production and yield of crops, seasonal variability effect on productivity and yield, crop utilization and commercialization, irrigation systems, etc. Environmental components such as rainfall, water quality, biodiversity, etc. are to be assessed to determine the effect of anthropogenic activities on the environment. Thus, enabling measurement of performance for implementation of the catchment plan The villages will agree on a Village Land Use and Action Plan (VLUAP) with SMART targets. Information will be for interventions mapping in line with the VLUAP and CROM DSS. As CROM-DSS offers a basket of solutions, the preference of villages are used to finetune the exact recommendations to be selected and included in the community procurement process (community approach).	The guidelines development for landscape restoration and catchment management will be used to improve the quality of implemented activities throughout the project area and beyond. Lessons learned will be compiled and shared across the project area to improve sustainable land management practices in the country. Using the community approach to restore landscapes and catchment is still a fairly new approach in Rwanda, so knowledge and lessons learned will be used to improve guidelines and operational frameworks for future landscape restoration projects.

Knowledge Management System (KMS) and Communication Strategy

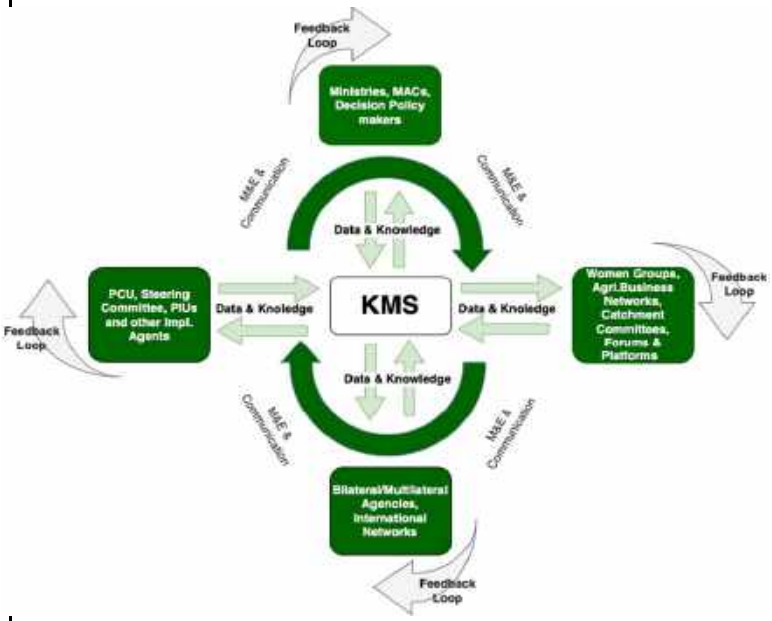
A well-designed Knowledge Management System (KMS) and Communication Strategy is required to enable the project's role players and stakeholders to make timely and informed decisions. The proactive documentation of processes, studies, best practices, and synthesis of lessons learned from project experience will be undertaken. These will be shared with stakeholders and political institutions, through communication avenues and strategies, to raise awareness and build support for project activities, project adaptation, policy dialogue and scaling up activities.

More emphasis will also be put on the documentation and dissemination of information among stakeholders on improved basic services in a resilient manner. This will be done through the development of training materials and tools; such as training modules, brochures, posters, banners; etc. The information will also be disseminated using broadcasting programs, documentary films and communication tools with much emphasis on social media such as Twitter, Facebook, YouTube and the Project Website. Knowledge generated from the project will also be documented and products will be disseminated to benefit communities across the country as well as to support the sustainability of project outcomes

This will ensure that the project results, the pool of knowledge, best practices and lessons learnt from the project are progressively captured and disseminated to the public using a combination of tools and approaches relevant to the target population. It will support activities meant to effectively communicate the project activities, achievements and lessons learnt as a way of creating awareness, ensure long term sustainability of the project and promote the replication of best practices at local and national level

This will also support activities related to (i) awareness building among the public, partners, and key stakeholders; (ii) increase the capacity of institutions and communities to effectively contribute to sustainable natural resources management, climate smart agriculture and climate resilience/adaptation, (iii) communicate project results, lessons learnt and best practices to ensure they can be adopted and replicated and (iv) Increase capacity of local institutions and communities to sustain investments in restoration and climate change resilience. Knowledge generated from the project will also be documented and

products will be disseminated to benefit communities across the country and internationally as well as to support the sustainability of project outcomes. Project resources will be specifically allocated to allow urban policy experts to participate in global activities and forums. The project will work with the lead agency in supporting knowledge exchange between partner Districts. The Project will also seek to disseminate knowledge generated from District to District in Rwanda. The produced knowledge materials will cover areas ranging from the management and use of project outputs with associated social and economic benefits. Moreover, knowledge accumulated from best practices learned in the project implementation will be used to inform future project design and implementation.



Project Knowledge and Information Flows

Component 5: **Monitoring, Evaluation, and Learning**

Mid-term project evaluation– will focus on the process of programme implementation. The evaluation will use data and information from the program's monitoring system to (a) assess progress in implementation; (b) assess progress towards achievement of objectives or yearly benchmarks; (c) assess if interventions are sufficient to reach desired outcomes, (d) identify barriers to achievement of objectives, and (e) to provide recommended actions to guide the remaining duration of the implementation timeframe	A strong monitoring and evaluation team and system are put in place to ensure the quality of interventions being implemented by communities and that all guidelines and safeguards are respected. As part of the larger VCRP investment, a baseline study is currently underway as well as a LiDAR survey (which includes the capture of high-resolution images of the whole project area). This data will be used to inform the project team's mid-term and end-term evaluations. Furthermore, a Government of Rwanda team is currently working on machine learning codes that will automate the identification of implemented catchment restoration and the evaluation of their status (e.g.: height of trees planted, shape of terraces constructed, etc.) based on collected high resolution images and satellite images. This work will contribute to the monitoring and maintenance of implemented adaptation measures beyond the project's lifetime. It will also improve the CROM-DSS tool which is used to guide all catchment restoration activities in Rwanda.
End-term project evaluation – will focus on (a) assessing if the programme met the stated goals and objectives; (b) the effectiveness of the technical approach; (c) development of the overarching lessons learned from the project, and (d) a strategy for use or communication of these lessons both within the organization and to partners.	
Learning and knowledge sharing strategy – Will be developed to ensure that throughout the implementation of interventions, lessons will be learned and shared at household leveL, community level, and national level in order to inform both policy and practice in the moit effective and efficient approach to catchment restoration interventions	

B. Economic, Social and Environmental Benefits.

Implementation of the above discussed sustainable environmental practices will not only benefit the environment but also significantly improve the livelihoods of the most vulnerable communities in the two catchments. In the table below, we will discuss the economic, social and environmental benefits of the project to the community with a particular focus on vulnerable groups, including gender considerations.

Table 6: Economic, Social, and Environmental Benefits

Type of benefit	The benefit with Reference to vulnerable groups	Mitigation and Compliance with ESP	Mitigation and Compliance with GP
Economic benefit	**Job Creation -** The project will generate employment in the sustainable land management practices including forestry management, tree planting, and terracing. These activities will employ local community and prioritize hiring from local vulnerable groups, including women, youth, and marginalized communities. Special training programs will be conducted to equip them with the necessary skills, ensuring these opportunities are accessible to all, regardless of their educational or professional background.	**Mitigation**: ● The project will focus on job creation opportunities in sectors that do not further degrade the environment**.** ● Project implementation will ensure that it does not exacerbate existing social inequalities. **Compliance:** ● The project planning complies with the fund's risk principles like 1) Marginalized & vulnerable groups, 2) Core labour rights, and 3) Protection of natural habitats	**Mitigation:** ● The project will provide equal employment opportunities to all. ● Working sites will also cater for special needs for women. **Compliance:** ● The project planning complies with the fund's principles like 1) Access & equity, 2) Marginalized & vulnerable groups, and 3) Human rights
	Diversification of Income – By forestation and agroforestry, the project will introduce income avenues through non-timber forest products such as fruits, nuts, fodder, and medicinal plants. This initiative is especially beneficial to marginalized groups that often find it challenging to engage in mainstream economic activities.	**Mitigation:** ● The project will ensure equitable access to project resources for all community members including marginalized groups. **Compliance:** ● The project planning complies with the fund's principles like 1) Access & equity and 2) Marginalized & vulnerable groups.	**Mitigation:** ● The project will give particular attention to empowering women. **Compliance:** ● The project planning complies with the fund's principles like 1) Access & equity and 2) Marginalized & vulnerable groups.
	Increased Agricultural Productivity - By introducing agroforestry and progressive terracing, the project aims to increase crop yields, thus enhancing food security and	**Mitigation:** ● The project will use sustainable farming practices to avoid land degradation and	**Mitigation** ● Project will actively seek to empower women and girls in order for them to

	household income. This approach is particularly advantageous for smallholder farmers, who are often vulnerable to economic and environmental challenges. The project will provide these farmers with the tools and knowledge to improve their land's productivity sustainably.	biodiversity loss and provide training to avoid overuse of natural resources**.** **Compliance:** ● The project planning complies with the fund's principles like 1) Pollution Prevention & Resource Efficiency and 2) Lands and Soil Conservation.	participate and benefit from project interventions **Compliance:** ● The project planning complies with the fund's principles like 1) Access & equity and 2) Marginalized & vulnerable groups.
	Soil Fertility Improvement - Enhancing soil fertility through agroforestry will reduce dependence on chemical fertilizers, which are often unaffordable for small-scale farmers. This aspect of the project is crucial for ensuring that these farmers, including a significant number of women, can maintain fertile and productive land without incurring high costs.	**Mitigation** ● The project will comply with Rwanda's standards on the use of chemical fertilizers and herbicides. ● The project will ensure that communities are educated about producing improved organic manure as well as the importance of protective equipment when using chemicals and fertilizers. **Compliance** ● The project planning complies with the fund's principles of Lands and Soil Conservation.	**No risk identified**
	Reduced Erosion and Land Degradation Costs - Terracing will play a vital role in reducing soil erosion, which is particularly significant for communities residing in marginal and susceptible areas. This initiative will lessen the long-term costs associated with land rehabilitation and maintenance.	**Mitigation:** ● The project will be careful in planning of terracing to avoid disrupting natural water flow or harming local ecosystems. **Compliance:** ● The project planning complies with the fund's principles like 1) Pollution Prevention & Resource Efficiency and 2) Lands and Soil Conservation.	**Mitigation** ● By mitigating land degradation, the project also aims to alleviate the burden on women and children, who frequently bear the responsibility of traveling longer distances for resources like water and firewood due to environmental degradation. **Compliance:** ● The project planning complies with the fund's principles of Marginalized & vulnerable groups..
	Reduction in Labor and Maintenance Costs - The establishment of terraces, once completed, requires minimal maintenance, which is particularly beneficial for elderly and physically	**- No risk identified**	**- No risk identified**

	less able community members. This aspect ensures that farming remains a viable and less labor-intensive occupation for these groups, fostering inclusivity and sustainability in agricultural practices.		
	Enhanced Land Value - Well-maintained terraces will increase the value of agricultural land.	**Mitigation:** ● The project will ensure that the increase in land value benefits the entire community, especially marginalized groups. **Compliance:** ● The project planning complies with the fund's principles like 1) Access & equity and 2) Marginalized & vulnerable groups,	**Mitigation** ● Project will ensure Rwandan women benefit from the improved value of their land in accordance to land rights in Rwanda. **Compliance:** The project planning complies with the fund's principles like 1) Access & equity and 2) Marginalized & vulnerable groups, and 3) Human Rights.
Social benefit	**Improved Health -** The planting of trees will significantly improve air quality, reducing respiratory health issues commonly faced by communities. Additionally, the diverse range of crops and fruits from agroforestry will contribute to better nutrition, thus improving overall health, particularly important for children and the elderly.	**Mitigation:** ● In forestry and agroforestry, the project will select tree species that do not exacerbate allergies or other health issues with a focus on indigenous species. ● On work sites, the project will ensure a safe environment and provide workers with PPEs. **Compliance:** ● The project planning complies with the fund's principle of Public Health	**Mitigation** ● Project will ensure that women actively participate in agro forestry interventions to ensure they can improve their incomes and access nutritious diets. **Compliance:** ● The project planning complies with the fund's principle of Public Health
	Food Security - Enhanced yields from agroforestry and terraces secure food sources for low-income families and marginalized communities, ensuring consistent access to food, a critical aspect for women who are primary caregivers.	**Mitigation** ● Ensure that crops grown on the terraced land have a viable market both within the community and externally.	**Mitigation** ● Priority to access terraced land for production should be given to women together with education to ensure they can maximize their yields
	Community Engagement and empowerment - The project's implementation involves community participation, particularly empowering women and marginalized groups,	**Mitigation:** ● The project will create inclusive decision-making processes that give voice to all community members. **Compliance:**	**Mitigation:** ● The project will ensure that women, youth, and marginalized groups have equal opportunities to participate in and lead project activities, fostering

	fostering unity, cooperation, and a sense of collective responsibility and ownership.	● The project planning complies with the fund's principles like 1) Access & equity and 2) Marginalized & vulnerable groups, and 4) Core Labour Rights	empowerment and ownership. **Compliance:** ● The project planning complies with the fund's principles like 1) Access & equity and 2) Marginalized & vulnerable groups, 3) Gender Equality and Women's Empowerment
	Educational Opportunities - Training in agroforestry and terracing techniques will offer skill development for underprivileged community members, with a focus on including women and youth, thereby increasing their employment opportunities and economic independence.	**No risk identified**	**Mitigation:** ● The project will focus on equitable education and skill development opportunities, especially for women and youth, to enhance their economic independence. **Compliance:** ● The project planning complies with the fund's principles like 1) Access & equity and 2) Marginalized & vulnerable groups, and 3) Gender Equality and Women's Empowerment
	Cultural Preservation - Afforestation will help preserve indigenous plant species, which may have cultural significance in the region.	**Mitigation:** ● The project will work closely with local cultural leaders to ensure that afforestation efforts do not disrupt cultural heritage sites or practices. ● It will integrate traditional knowledge into conservation practices. **Compliance:** ● The project planning complies with the fund's principle of Physical and Cultural Heritage	**No specific risk from a gender perspective**
Environmental benefit	**Biodiversity Conservation -** New forests provide habitats for wildlife, aiding in biodiversity conservation. Agroforestry also supports a variety of plant and animal species, enhancing local biodiversity.	**Mitigation:** ● The project will be executed by environmental experts working closely with local community and leveraging local knowledge to prevent unintended harm to local ecosystems due to new species introduction. **Compliance:**	**Mitigation** ● The project will ensure that women are not left out of conservation, education, employment opportunities. **Compliance:** ● The project planning complies with the fund's principles like 1) Access & equity

		● The project planning complies with the fund's principle of Conservation of Biological Diversity	and 2) Marginalized & vulnerable groups, and 3) Gender Equality and Women's Empowerment
	Soil Erosion Control - Trees help stabilize soil and reduce erosion, which is particularly important in the region's hilly terrain.	**Mitigation** ● Project will ensure the community is educated on the cost and measures to address the soil erosion challenge.	**No specific gender issue**
	Improved water conservation - Through afforestation and terracing benefit small-scale farmers, particularly women who often manage household water resources.	**Mitigation** ● Community to be educated about water conservation and use practices that maximize their agriculture production and improve their access to water on the household. **Compliance:** ● The project planning complies with the fund's principles of Pollution Prevention & Resource Efficiency	**Mitigation** ● The project will ensure that women are actively participate in education campaigns and are facilitated to access water resources. **Compliance:** ● The project planning complies with the fund's principles like 1) Access & equity and 2) Marginalized & vulnerable groups, and 3) Gender Equality and Women's Empowerment
	Landscape Restoration - In areas affected by degradation like the Mukungwa catchment, afforestation, agroforestry system and terraces will help in restoring the natural landscape.	**Mitigation:** ● The project will balance restoration efforts with existing land uses to avoid displacing local activities, especially those critical for livelihoods. **Compliance:** ● The project planning complies with the fund's principles like 1) Compliance with the Law and 2) Human Rights, and 3) Involuntary Resettlement	**Mitigation** ● The project will access potential impacts on women as a result of landscape restoration in order to ensure their active participation in opportunities that emerge. **Compliance:** ● The project planning complies with the fund's principles like 1) Access & equity and 2) Marginalized & vulnerable groups, and 3) Gender Equality and Women's Empowerment
	Climate Mitigation - Carbon sequestration by trees in agroforestry systems offers long-term environmental benefits, with special attention to ensuring that these efforts support livelihoods in vulnerable communities, including women's groups.	**Mitigation:** ● The project will ensure that carbon capture efforts do not monopolize land needed for community activities, especially agriculture. **Compliance:**	**Mitigation** ● Project will access how women are affected by climate and mitigate the negative impact.

		● The project planning complies with the fund's principles like 1) Compliance with the Law and 2) Human Rights, and 3) Involuntary Resettlement	
	Microclimate Stabilization - The creation of a stable microclimate through forest and agroforest systems supports agricultural resilience, crucial for small-scale farmers and particularly beneficial for women, who are often disproportionately affected by climate-related agricultural challenges.	**No risk identified**	**No risk identified**

Source: Vanguard Economics 2024

C. Cost-effectiveness of the proposed project

Cost effectiveness is a description of alternative options to the proposed measures. It compares proposed actions to other possible interventions that could have taken place to help adapt and build resilience in the same sector, geographic region, and/or community[10].

This project's cost effectiveness can only be analysed through the lens of the VCRP larger programme. The programme's interventions, under its flood risk management and landscape restoration and catchment management components, leveraged CROM-DSS technology that links science with participatory processes. The tool did not only help to identify priority sites for soil erosion and landslide mitigation but also guided the decision on how to efficiently respond to the situation. There is a high level of certainty that the combination of all programme's interventions will to a healthy and climate resilient ecosystem in the region. Table 7 compares the proposed intervention in this specific project with other possible interventions which in many cases are proposed in other components of the larger VCRP programme.

Table 7: Cost effectiveness analysis

Proposed action	Cost	Other possible options
Terracing	5,626,910	Studies have shown that with the current vegetation cover using perennial crops, grasses, annual crops or afforestation, the loss of soil in the Upper Nyabarongo catchment decreases from 437 tons/ha/yr to 36 tons/ha/yr. Literature such as Rutebuka et al. (2021) reported that with the planned terracing, the soil loss will be less than 5 tons/ha/yr and the reduction of erosion (bringing the national average to less than 11 tons/ha/yr) and the full implementation of soil erosion control with bench terraces is expected to make soil erosion negligible. Given the soil type, slopes, and land use, there are no viable alternatives to terracing. Other interventions won't significantly reduce soil erosion, and eventually all the topsoil will be lost. The proposed action, given the alternative of seeing one of the most fertile soils of the country being eroded, is cost effective.
Reforestation	110,322	No alternative option given the legal framework. By law, slopes over 60% need to be forested against erosion and landslides[11].
Afforestation	110,147	Under Bonn Challenge[12], Rwanda has committed to several landscape restoration projects, whose objective is to restore 2 million hectares of forests.
Agroforestry practices	87,888	The other option is current agriculture practices that would continue to be at risk from climate change impact like soil erosion and flooding. Agroforestry is used to stabilize terraces or increase tree cover where soil erosion is limited. Therefore, alternatives to agroforestry have to do with the type of trees being planted. Since this project uses the community approach, landowners have a say in the type of trees planted on their land for agroforestry.
Planting hedgerows	247,683	N/A
Gullies protection and	441,610	No alternatives interventions that address gully erosion. Unless steps are

[10] AdF's Instructions for preparing a request for project or programme funding from the adaptation fund - Annex 5 to OPG Amended in October 2017

[11] Rwanda Water Portal

[12] Bonn Challenge Commitment - Rwanda was the first African country to pledge to the Bonn Challenge in 2011, aiming to restore two million hectares of deforested and degraded land by 2020. This pledge is part of a global effort to restore 150 million hectares by 2020 and 350 million hectares by 2030.

rehabilitation		taken to stabilise the disturbance, gullies will continue to move by headward erosion or by slumping of the side walls.
Rainwater harvesting systems	850,200	N/A
Awareness creation	30,000	N/A
Skills development	90,000	N/A
Knowledge sharing	30,000	N/A
Monitoring and learning	1,465,960	N/A

Source: Vanguard Economics 2024 & Rwanda Water Resources Board

The project activities are designed to obtain optimum results that will benefit direct and indirect beneficiaries in tangible ways.

- **Focus on Climate Resilience**: The project aims to address climate change impacts, such as floods, landslides, and soil erosion, which pose significant risks to the communities in the two proposed catchments. By implementing enhancing adaptive capacity, the project seeks to reduce vulnerability and enhance resilience. Investing in climate resilience measures can be cost-effective in the long run as it mitigates potential damages and losses caused by climate-related events, reducing the need for costly post-disaster response and recovery efforts.
- **Synergistic Approach**: The project adopts a multi-component approach that integrates various activities, afforestation and reforestation, terracing, agro-forestry, planting of hedgerows, gully rehabilitation, and rainwater harvesting. This holistic approach allows for synergies and interlinkages between different components, maximizing the impact and cost-effectiveness of the interventions.
- **Income Generation and Economic Resilience**: The project emphasizes promotion of sustainable livelihoods by supporting the most practiced livelihood in the two catchments – agriculture. With more climate resilient agriculture and enhanced productivity as a result of mitigated soil erosion, there is an improved income for the vulnerable communities. Economic resilience will contribute to poverty reduction, decrease dependency on external assistance, and generate positive economic spillover effects within the communities.
- **Long-term Environmental Benefits:** The project's focus on sustainable land and water management practices, by regenerative landscapes, offers long-term environmental benefits. These measures contribute to the preservation of natural resources, reduction of environmental degradation, and promotion of ecological sustainability. While the immediate costs of implementing these measures may be incurred, the long-term benefits, such as reduced ecosystem restoration costs and improved environmental quality, can outweigh the initial investments.

The project will adopt the community-driven approach, on ground bottom-up implementation of SLM measures, it will deliver more tangible impact and stakeholder buy-in than the top-down. The community involvement in developing Village Land Use Action Plans (the VLUAPs), the village saving groups, and farmers' paid labour in implementing IWRM and landscape restoration will together result in enhanced programme performance in multiple aspects. These include better understanding, effective participation, and mobilisation of local resources, and relatively strong ownership in the long run.

Advantages of adopting a Community Approach to catchment planning at village level include the following:

· Cost efficiency; In terms of existing landscape restoration projects in Rwanda, studies demonstrate that the cost spent by a service provider to restore 1ha is much higher than the cost of 1 ha restored through community approaches

· Quick results by enabling the prompt execution of works without delays which would result from the long administrative and procedural steps for the procurement or recruitment of the labor;

· Ensure sustainability through EPI as Payment for Ecosystem Services (PES) for effectiveness and sustainability of landscape restoration interventions;

· Direct job creation for the local population and increased income at the household level, hence facilitating poverty reduction and socio-economic development;

· Increase movement of farmer's accounts at SACCOs; and

· Ownership of the works/infrastructures put in place, because they are done by the beneficiaries themselves.

· The role of the Programme Hubs which enable increased ownership of the programme's activities by the districts and other decentralized levels

D. Consistency with national or sub-national sustainable development strategies

The project is aligned with several national strategies that foster climate resilience and sustainable development. Table 8 below provides a summary of the alignment of the project to various government policies.

Table 8: Consistency with national development strategies

Policy / Strategy	Alignment and relevance
	National level
Rwanda Vision 2050	Rwanda's Vision 2050 recognises the role of the environment as a key pillar on which the country can transform to the quality of life for Rwandans. The blueprint outlines key areas related to water resources through which the development targets can be met as follows: ● Rwanda Vision 2050 aims to achieve 100% access to water by 2024. The project's commitment to reducing water runoff and protecting riverbank areas directly contributes to sustainable water management, aligning with the vision's goal of establishing a modern, safe, and reliable water supply network. ● The project's objective of enhancing climate adaptation resilience and sustainable management of the Mukungwa catchment aligns with Vision 2050's commitment to sustainable environmental management. ● The focus on rehabilitating degraded areas through terracing, afforestation, and reforestation directly contributes to the vision's goal of restoring and maintaining healthy ecosystems. ● The project's efforts to reduce soil erosion and enhance landscape restoration contribute to Vision 2050's target of increasing renewable water resource availability per capita to 1000 m^3 per annum. By improving soil productivity and preserving water resources. Achieving these objectives requires strategic planning of management and use of land and water resources including water resources management, land and soil conservation, waste disposal, reducing and elimination water pollution. The strategic planning needs to have intentional consideration of future scenarios – development and climate change.
National strategy for Transformation (NST1)	The National Strategy for Transformation (NST-1)/Seven Years Government Program (2017-2024) outlines priorities for a green economy. The Economic Transformation pillar of NST-1 prioritizes "*Sustainable Management of Natural Resources and Environment to Transition Rwanda towards a Green Economy*" as key to a green economy. The strategy say that this will be achieved through the following efforts that are strongly aligned with this project: ● Continue to strengthen forest management and ensure their sustainable exploitation working with the private sector. ● The area covered by forest will be increased and sustained at 30% by 2024 through forest landscape restoration. ● Develop a project to manage water flows from the volcano region and other rivers to mitigate related disasters and improve water resource management. To further improve integrated water resource management, water catchment areas will be effectively managed and protected to mitigate disasters in partnership with communities. ● Strengthen land administration and management to ensure optimal allocation and use of land. ● Scaling up of marshland and small-scale technologies for irrigation and promotion of new models of irrigation scheme management, including the development and strengthening of farmers' and water users' associations. Increases the land area covered by terraces and ensure their optimal use, land covered by radical terraces will increase to 142,500 ha by 2024. Similarly, land covered by progressive terraces will increase to 1,008,000 ha by 2024. Under priority area 7, providing for "development of a project to manage water flows from the volcano region and other rivers to mitigate related disasters and improve water resource management" was envisaged as one of the national priorities.
Rwanda Green	Rwanda's Green Growth and Climate Resilience Strategy (GGCRS) outlines the country's actions and priorities on climate change relating to both

Growth and Climate Resilient Strategy (GGCRS 2021)	mitigation and adaptation. One of the three strategic objectives of the GGCRS is to achieve sustainable land use and water resource management that results in Food Security, appropriate Urban Development and preservation of Biodiversity and Ecosystem Services. Sustainable Land use and Natural Resource Management, entails integrated water resource management, building climate resilient water infrastructure for storage, supply, efficiency; developing catchment restoration and soil erosion control strategies; and strengthening disaster management and response.
Rwanda National Environment and Climate Change Policy (2019)	Recognizes deforestation as one of the key environmental and climate change issues in Rwanda. It emphasizes the need to restore ecosystems and enhance their ecological functioning, including forests. This is to be achieved by regularly conducting an inventory of degraded ecosystems and preparing restoration development plans.
Nationally Determined Contribution (2020)	Focusing on climate change, the NDC for Rwanda outlines the country' s to contribute to global efforts to curb global temperature rise below 2°C by 2100. Among others, key adaptation interventions proposed under NDCs include expanding irrigation and improving water management using IWRM framework; developing a National Water Security through water conservation practices, wetlands restoration, water storage and efficient water use; (vii) developing water resource models, water quality testing, and improved hydro-related information systems; and developing and implementing a catchment management plan for all Level 1 catchments.
Sector level	
The Environment and Natural Resources Sector Strategic Plan	Aims to strengthen governance structures for IWRM at catchment, national and trans-boundary levels, ensure equitable, efficient & productive water allocation and establish national standards for ambient water quality. This strategic plan recognizes deforestation as a prominent environmental and climate change issue in Rwanda and emphasizes the urgent need to restore ecosystems, with a specific focus on forests. The project's commitment to enhancing climate adaptation resilience in the Mukungwa catchment is in direct harmony with the strategic plan's overarching goals. Moreover, the project's landscape restoration initiatives align with the strategic plan's emphasis on conducting regular inventories of degraded ecosystems and developing comprehensive restoration plans.
Forestry Policy	Acknowledges the importance of managing forest resources to support the country's sustainable, low-carbon, and climate-resilient development goals, with the aim of improving the livelihoods of present and future generations.
The Strategic Plan for Agricultural Transformation (PSTA-4)	outlines priority investments in agriculture and estimates required resources for the agriculture sector for the period 2018-2024. Given that Rwanda currently relies to a greater extent on rain fed agriculture PTSA-4 promotes developing soil and water conservation as part of integrated watershed management programmes, considering that the most successful approaches are those involving local communities, especially in reconciling the use of crop, livestock, and trees.
Water and Sanitation Sector Strategic Plan (2018-2024)	Aims to increase the proportion of the population/households accessing improved source of water to 100% and the proportion with improved sanitation services/ facilities to 100% as well.
Land Policy	Emphasizes the inclusion of agroforestry in the hillside agricultural landscape due to its contribution to soil protection.
District level	
District development strategies (DDSs)	Are development blueprints at the district level that drive the district' s contribution towards national goals. Environmental conservation programs are critical components including measures to control soil conservation, wetlands and riverbanks protection, among others.

E. Compliance with National standards

Landscape restoration standards in Rwanda are part of a comprehensive approach to address environmental degradation and promote sustainable land use. The table 9 below provides some key aspects of these standards and initiatives. These standards and initiatives highlight Rwanda's comprehensive and community-focused approach to landscape restoration, aiming not only to restore ecological functionality but also to enhance human well-being and economic development.

Table 9: National Standards

Category	Standard	Relevance to this project	Alignment with ESP of the AdF
Environmental	**Bonn Challenge Commitment -** Rwanda was the first African country to pledge to the Bonn Challenge in 2011, aiming to restore two million hectares of deforested and degraded land by 2020. This pledge is part of a global effort to restore 150 million hectares by 2020 and 350 million hectares by 2030. The Bonn Challenge and the African Forest Landscape Restoration Initiative (AFR100) have been crucial in guiding Rwanda's restoration efforts.	Following the footprint of the Bonn Challenge, they project design is focuses on landscape restoration, enhancing ecosystem services, community involvement, agroforestry, and land use practices, leveraging global synergy, as well as policy support and funding opportunities	Strongly aligned with principles of 1) Climate Change, 2) Pollution Prevention & Resource Efficiency, 3) Lands and Soil Conservation
	Nationwide landscape restoration - Since 2011, Rwanda has implemented 80 restoration projects across the country. Over this period, Rwanda quadrupled domestic investment in landscape restoration. As of 2018, a combined domestic and international investment of US$ 6.7 million made nearly 35% of the country's two-million-hectare restoration ambition a reality[13].	The project design in built on shared best practices and lessons learned from other restoration projects.	Strongly aligned with principles of 1) Climate Change, 2) Pollution Prevention & Resource Efficiency, 3) Lands and Soil Conservation
	Technical Packages and Analysis - Detailed cost-benefit analysis and spatial analysis have been conducted to evaluate the financial effectiveness and potential impact on erosion control of various restoration measures. These analyses help guide and enhance restoration strategies across Rwanda.	Rwanda has well-developed policies and tools for land and water management – such as the CROM decision support system that has underpinned the proposed interventions in this project.	Strongly aligned with principles of 1) Climate Change, 2) Pollution Prevention & Resource Efficiency, 3) Lands and Soil Conservation
	Forest Landscape Restoration (FLR) Strategies -The FLR approach in Rwanda includes transforming traditional agriculture to agroforestry systems, rehabilitating poorly managed eucalyptus woodlots and plantations, restoring	Forest landscape restoration in Rwanda is supported by strong policy frameworks and institutional support	Strongly aligned with principles of 1) Climate Change, 2) Compliance with the Law, 3) Lands and Soil Conservation

[13]https://www.iucn.org/news/forests/202003/how-rwanda-became-a-restoration-leader#:~:text=From%20the%20eastern%20semi%2Ddry,domestic%20investment%20in%20landscape%20restoration.

	deforested protected land with native species, and improving tree diversity in protected forests and sensitive sites like water catchments.		
Social	**Community Involvement and Economic Impact -** Restoration projects involve local communities and have a significant economic impact. The focus is also on building resilience against climate change impacts and ensuring sustainable use of natural resources.	The project will also ensure active and meaningful involvement of local communities in all stages of the project—from planning to implementation and monitoring.	Strongly aligned with principles of 1) Access & Equity, 2) Marginalized & Vulnerable Groups, 3) Human Rights
	Equity and Inclusion – In Rwanda, ensuring that the benefits of the project are shared equitably among all members of the community, including marginalized and vulnerable groups such as women, youth, and the economically disadvantaged is crucial.	This project has also considered equity and inclusion standards in its design and will remain the practice throughout its implementation.	Strongly aligned with principles of 1) Gender Equality and Women's Empowerment, 2) Access & Equity, 3) Marginalized & Vulnerable Groups

F. Duplication of project with other funding sources

In the larger VCRP programme, the focus of this project is only component 2.1 – See figure 11. WBG and the European Investment Bank will fund more than $50 million out of $107 million needed for this sub-component. GoR is working on raising more funds to cover the whole cost of landscape restoration. The Adaptation Fund is requested to fund $ 10 million to cover the catchment restoration costs of 6 sub-catchments as the figure below shows.
Given the programmatic approach used in the VCRP, the cost of activities planned has been broken-down by sub-catchment to facilitate fund mobilization. Furthermore, RWB has been applying the principle of restoring full catchments from upstream to downstream. This principle is now being used for all catchment restoration projects in the country.

There are no other projects ongoing in the 6 sub-catchments selected for this proposal. However, activities in other sub-components of the project will complement the work that will be funded by the Adaptation fund. This includes flood risk mitigation and ecological restoration activities.

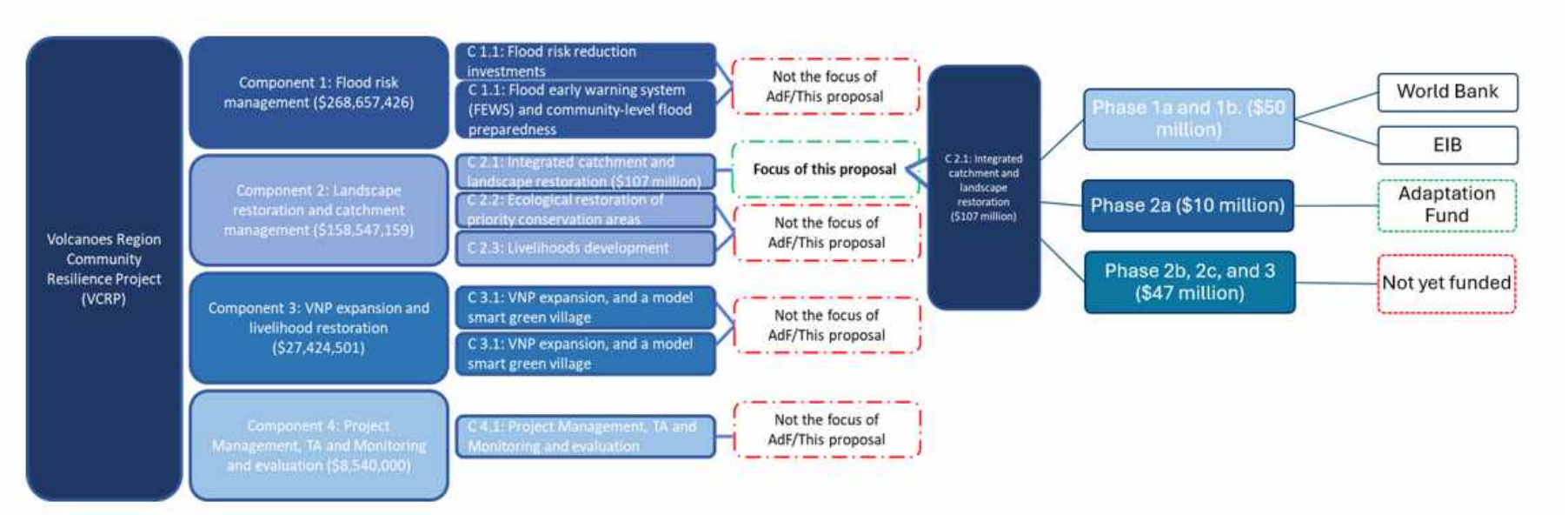


Figure 12: VCRP Components and funding sources

G. Learning and Knowledge Management

The learning and knowledge management component of the project will be captured and disseminated through the following channels:

- **Community engagement platforms** – At the larger project (VCRP) level, the project design has considered community engagement a priority in project design and implementation. Community approach guidelines were developed where the primary objective is to consult landowners in different catchments at the Village level to jointly plan and agree on proposed solutions as well as the implementation of work plans. This establishes a platform where the project continually collects the community's insights and disseminates knowledge through capacity building.
- **Project implementation (annual reviews and progress reports) –**the project will collect case studies under each component to drill down into specific innovations and practices that arise due to project interventions. A lesson learning exercise will also be included annual reviews of project implementation. During this process significant new understandings will be catalogued and used to build the knowledge base of best practices as well as document where project implementation has resulted in unexpected impacts or investigate approaches that have not worked and why. Lessons learned will include detailed, specific information about behaviors, attitudes, approaches, that will inform project implementation and other interventions.
- **Periodic monitoring and evaluation -** Lessons will also be captured through the Monitoring and Evaluation system which will provide regular monitoring of project indicators, as well as progress against the key milestones. The project will promote Participatory Monitoring and Evaluation System so that, as much as possible, the results of climate adaptation approaches will be measured, processed and evaluated by the communities involved. As well as enabling project participants to use the information to modify approaches as they go, this approach will also build the capacity of local communities to adapt to future climate trends and shocks.
- **Dissemination of lessons learned –** The lessons learned from this project will be added to the operational framework and guidelines for catchment restoration that RWB is developing. This contributes to the improvement of catchment restoration in the project area and the rest of the country – the framework and guidelines will be used by district technicians all over the country as they support communities in the implementation and maintenance of catchment restoration activities.

H. Consultative process

Continued stakeholder and beneficiary engagement during the implementation of proposed activities will be important. The project has facilitated stakeholders' engagement in the design and will continue to facilitate the same during the implementation of proposed activities. This has been done through regular consultations and mobilization sessions for the beneficiaries in each targeted catchment. Engagements has helped to mitigate as much as possible any negative impacts related to the works and thus ensuring the beneficiaries' buy-in and ownership.

Community engagement methods and mechanisms included:

- Early identification and representation of key stakeholders.
- Early engagement of communities in the project/process not only be engaged once key project-related decisions have already been made.
- Clear setting out of, and agreeing to/of objectives at the beginning of the project/process.
- Continuous conversations between all stakeholders throughout the project.
- Acknowledging and using local knowledge.
- The selected methods of engagements must be relevant to the context within which the project is implemented, and the stakeholders.
- The community engagement process must create opportunities for accountability.
- Create community ownership.

- Incorporate the capacity building of the community to ensure that they can participate in the process (and project|) in a meaningful manner.
- The decision-making process must be structured, open and inclusive of key stakeholders representing the community, ideally without political or self-bias.

Throughout project implementation, the implementation team will continue to carry out regular consultation and mobilization sessions for the beneficiaries in each targeted watershed to mitigate as much as possible any negative impacts related to the works and ensure buy-in and ownership by beneficiaries.

Project stakeholders

Table 10: Classification of the project stakeholders

Type of stakeholder	Stakeholder	Responsibilities	Power to influence the project delivery
Government ministries	Ministry of Environment	Implementing Entity and chair of steering committee	High
	Ministry of Finance and Economic Planning (MINECOFIN),	Fund disbursement and Part of steering committee	High
	Ministry of Local Government (MINALOC),	Part of steering committee	Medium
	Ministry of Emergency Management (MINEMA),	Support on disaster areas and data and Part of steering committee	Low
Local government	Vice mayor - Nyabihu District	Local governance coordination	High
	Vice mayor - Ngororero District		High
	Sector offices		High
	Cell executive secretaries	Community coordination	High
	Village leaders		High
Government agencies	Rwanda Water Resources Board (RWB)	Executing entity	High
	Rwanda Environment Management Authority (REMA),	Part of steering committee	High
	Rwanda Green Fund FONERWA		High
	Rwanda Agriculture Board (RAB),		Medium
	Rwanda Forest Authority (RFA)		Medium
Donors and Multilateral agencies	World Bank	Funding partner	High
	Adaptation Fund	Funding partner	High
	Green Climate Fund	Funding partner	High

Source: VCRP Documents

Local community

In the process of elaborating the ESMF, SEP and GAP, consultations with potential PAPs along the project area and relevant stakeholders have been conducted to collect their views, concerns and issues pertaining to the project. Below sub sections discuss the applied methods, meeting procedures and findings of consultations, i.e issues raised and proposed mitigation measures. Stakeholder consultations were carried out over a period of time through public consultation meetings, Focus Group Discussions (FGDs) and key informant interviews (KIIs). Public consultation meetings with Project affected people (PAPs) were held in Kinigi sector and different areas of Musanze District from the 7th to the 9th of September 2022 and 2nd November 2022 that involved a total of 327 Project affected people (PAPs), with female participants representing 47.6% while male represented 52.6% of participants. Furthermore, from 2nd- 4th May 2023, public consultation meetings were conducted in Cyuve sector of Musanze

District, Mukamira sector of Nyabihu district, Matyazo sector of Ngororero district, where of the 198 participants, 53.5% were male and 46.5% were female, most of who represented women's groups.

As for FGDs, which were conducted for men, women and youth (males and females) separately, a number of them were conducted in February 2023; 9 FGDs were conducted with 64 participants (comprising 31 males and 33 females, met separately). In May 2023, 4 FGDs were conducted with 49 participants (comprising 30 males, 19 Females, met separately). Additionally, from the 4th -8th September 2023, consultations involved key informants from the selected Sectors of the different project intervention districts as shown in the table below:

Table 11: Administrative areas in which stakeholder consultations were conducted.

District	Sectors	Cells
Burera	Gahunga	Gisizi
Musanze	Gacaca, Kinigi	Gakoro, Nyabigoma
Nyabihu	Shyira	Kanyamitana
Ngororero	Kabaya	Nyenyeri

In the most recent 2023 September consultations, a total of 28 focus group discussions (FGDs) of men, women and youth (18-30 years) including males and females were conducted, amounting to 281 persons including 125 men and 156 women, met separately. In each visited site, four separate FGDs were conducted. A size of 8-10 people for each group was respected. For the sake of inclusiveness, 2 persons with disability and 2 elderly persons were part of each group.

Key informant Interviews were carried throughout the GAP preparation, with interviewees comprising of; Ministry of Environment (MoE) representatives, Rwanda Environment Management Authority (REMA) representatives, Rwanda Water resources Board (RWB) representatives, Rwanda Meteorology Agency (Meteo-Rwanda) representatives, Ministry in Charge of Emergency Management (MINEMA), Vice Mayor Musanze Economic Development, Executive secretary Kinigi sector, Executive secretary Nyabigoma cell, Executive secretary Kaguhu cell, Socio-economic development officer Nyabigoma cell, Socio-economic development officer Kaguhu cell, Socio-economic development officer Kampanga cell, Village leaders (chef w'umudugudu) for 8 villages, Local NGOs in Musanze in Musanze District.

Data analysis

Collected data were processed and analyzed, which allowed identification of patterns and concepts aligning with key gender and GBV related issues. Qualitative data which was collected from the field especially through focus group discussions (FGDs) was analysed using the thematic content analysis approach.

Triangulating the analysis of the data collected from secondary sources and the findings that resulted from analysing the primary data helped the assessment team to come up with Gender gaps and potential GBV/SEA/SH risks that could negatively impact the success of the project.

Table 12: Summary of expected benefits and issues raised during stakeholder consultation and proposed mitigation measures

Benefits and Issue recorded	**Stakeholders that responded**	**Suggested mitigation measures by stakeholders**
Sediment deposit management issues in the main rivers (Giciye, Rubagabaga, Satinsyi rivers) draining into the vunga corridor, to avoid flood risks and destruction of homes, plantations, infrastructure such as roads, bridges, hydropower plants.	RWB	Suggested mitigation measures towards flood risk reduction comprise; river dredging, sediment detention ponds, **catchment restoration, and landscape management**.
Landslide and erosion risks along the Vunga corridor hillsides	RWB/ REMA	**Landscape restoration through the use of a tool known as CROM- DSS and the utilization of best practices to effectively mitigate the effects of erosion and reclaim land affected by erosion through activities such as radical terraces, rainwater harvesting, afforestation, reforestation, improved agricultural practices, suited crops to grow.**

With what has been proposed as the project interventions of flood reduction measures in their areas, they stand to benefit in the following manner: Minimised loss of crops, land, houses and lives by communities in the route of Rukangabana, Nyabyunga gully, Nyabutoshwa gully and other gullies in Volcanoes region, especially during rainy seasons. Minimised damage to infrastructure such as; bridges, roads, power transmission lines. Benefit from employment and sources of income by project from the construction of interventions. i.e. youth, women and men working as casual labourers. The income gained from this employment, households are able to pay for the Community Based Health Insurance (CBHI), school fees for their children and feed their households.	Gahunga sector officials, in Burera District. Local communities in Gahunga sector, in Burera District. Local community from Kanyove cell, Mukamira sector, Nyabihu district. Local community from Matyazo sector, Ngororero district	For flood impacts in Gahunga sector, suggested mitigation measures were for construction of detention ponds upstream of those gullies and stabilisation of their embankments, rehabilitation and/or construction of bridges along the gullies. For the flood impacts faced in Kanyove cell, Mukamira sector, mitigation measures suggested were to establish flood risk detention systems upstream of the main source of the flooding, which will reduce the volume of rainfall run-off reaching the village. Proper channeling of the streams and gullies that drain rainfall run-off into their village by directing it into the caves and protecting adjacent lands from overflow flooding. For the flood impacts faced in Matyazo sector, Ngororero district at Rubagabaga river bridge, mitigation measures suggested were to establish flood risk detention systems upstream of the main source of the flooding, which will reduce the volume of rainfall run-off reaching the village. To support households in the river catchment with rainwater harvesting (such as water tanks) to collect rainwater off their house roofs which could minimize on contribution to run-off that causes landslides and ends up in the river causing flooding. To support in channeling excess rainwater run-off from their settlements into pipes or other suitable drains directed to natural gullies that drain directly into the rivers hence minimizing soil erosion and landslides that are part of the sources of sediment deposition in the rivers. As part of catchment restoration, support the community in tree planting but with special attention to community participation and ownership of these trees. An example was given that the project should directly supply and employ the local community in planting and caretaking of the trees that way ensures sustainability of the trees to grow rather than hire private companies that only plant trees and leave with no intention of following them up.

Participants in the stakeholder engagement expressed that the Gahunga sector was facing a number of issues as a result of floods from Rukangabana, Nyabyunga and Nyabutoshwa gullies upstream that drain water from Volcanoes uphill into their sector. Issues mentioned comprise of; Damage of infrastructure such as; bridges, roads, power transmission lines. Destruction of houses. Destruction of plantations leading to loss of crops and therefore food and income for households in their communities In some cases, loss of lives by people was washed away by the heavy run-off in the gullies when crossing.Loss of land owned by locals, eroded away by floods.Flood the market causing it not to operate on day communities have traveled long distances with their food supplies to sell and buy needed commodities for their households.They also anticipated the following impacts from project activities:Issue of project work given to migrant workers and not local communities. Participants informed the consultation that they have educated and skilled youth, men and women with required skills to work, educated beyond secondary schools, vocational training schools.	Gahunga sector officials, in Burera District. Local communities in Gahunga sector, in Burera District.	Suggested mitigation measures are: Construction of detention ponds upstream of those gullies and stabilization of their embankments, rehabilitation and/or construction of bridges along the gullies. For land acquired as a result of VCRP activities, compensation payment of lost assets to displacement should be planned for and implemented.

Participants informed the consultation that as a result of flooding caused by Rurage and Kagenda streams discharging into Bikwi gulley which discharges at Kanyove cell resulting in flooding Kanyove village, the following are the flood impacts on these communities. Flooding and destruction of houses. Destruction of plantations leading to loss of crops and therefore food and income for households in their communities. Loss of land owned by locals, inundated by floods. Damage of infrastructure such as; flooding the access roads connecting the households in Kanyove village, possible flooding of Musanze- Mukamira road at Kanyove cell road section, destruction of power transmission lines. In addition to the above issues faced, specifically women informed the discussion that when it floods, they are not able to leave their homes to go to work on their plantations because they have to watch their children from possibility of drinking the dirty sedimented flood water or drowning in it the ponds created by flooded water in the village.	Local community from Kanyove cell, Mukamira sector, Nyabihu district.	Suggested mitigation measures are: To establish flood risk detention systems upstream of the main source of the flooding, which will reduce the volume of rainfall runoff reaching the village. Unclog the caves in Kanyove village and Jenda village to allow for quick infiltration of rainfall run-off floods that reach these villages and thereby minimizing or avoiding flooding of the villages and roads adjacent. Proper channeling of the streams and gulley that drain rainfall runoff into their village by directing it into the caves and protecting adjacent lands from overflow flooding. To restore hillside catchments upstream of Bikwi gulley, associated streams and adjacent to the villages with the aim of increasing rainfall infiltration in the soils and reducing soil erosion thereby reducing the amount of rainfall run-off and sediments causing the flooding. They offered to support flood risk prevention initiatives by offering community participatory labour as part of the monthly national voluntary community clean-up “locally called Umuganda”.

As a result of high sediment load on Rubagabaga river, areas along its banks and bridge are flooded, resulting in the following impact. Rubagabaga river has a high sediment deposition which blocks the flow of river water under the Rubagabaga bridge, raises the river water level and causes flooding of the surrounding areas. Potential of complete clogging of the Rubagabaga bridge in the very near future. This has led to flooding and destruction of 8 houses the previous day to the time of the stakeholder consultation. Destruction of plantations leading to loss of crops and therefore food and income for households in their communities. As informed by participants, about 25ha of rice below Rubagabaga had been covered by sediments from Rubagabaga river floods the previous day. Loss of land owned by locals, inundated by floods. Damage of infrastructure such as; Rubagabaga hydro power plant had been severely damaged by the floods the previous day, the mostly used access road from Shyira sector in Nyabihu district to Matyazo sector in Ngororero district had been blocked by landslides making it impossible for the field visit team to reach Satinsyi river proposed for river dredging.	Local community from Matyazo sector, Ngororero district.	Suggested mitigation measures are: To dredge the Rubagabaga river at its bridge as a short-term quick mitigation measure to avoid its complete clogging by sediment deposits and eventually making it impassable during rainy seasons or getting damaged. To establish flood risk detention systems upstream of the main source of the flooding, which will reduce the volume of rainfall runoff reaching the village. To support households in the river catchment with rainwater harvesting (such as water tanks) to collect rainwater off their house roofs which could minimize the contribution to run-off that causes landslides and ends up in the river causing flooding. To support in channeling excess rainwater run-off from their settlements into pipes or other suitable drains directed to natural gullies that drain directly into the rivers hence minimizing soil erosion and landslides that are part of the sources of sediment deposition in the rivers. As part of catchment restoration, support the community in tree planting but with special attention to community participation and ownership of these trees. An example was given that the project should directly supply and employ the local community in planting and caretaking of the trees that way ensures sustainability of the trees to grow rather than hire private companies that only plant trees and leave with no intention of following them up. They offered to support soil erosion and flood risk prevention initiatives by offering community participatory labour as part of the monthly national voluntary community clean-up “locally called Umuga”.

I. Justification for funding requested.

Rwanda is extremely vulnerable to climate change, due to high sensitivity to climatic impacts and low adaptive capacity. Poverty, coupled with a very high population dependence on natural resources, plus the country's hilly terrain all contribute to making climate change a particularly grave threat for Rwanda. Flooding is already a major threat to human security and economic activity (for instance, the 2012 floods in Rwanda's northern and western provinces caused widespread destruction and affected an estimated 11,000 people), and climate projections suggest that the already high risk of river flooding will be elevated in coming decades, with potentially damaging and life-threatening floods expected to occur at least once in the next ten years. In 2023 climate and water related disasters cost Rwanda as much as 4% of its annual GDP.

Climate change adaptation investments are unconventional investments. It is therefore extraordinarily rare and highly challenging to secure finance from conventional sources in the market for the type of resilience-building interventions the current project proposes. In the VCRP's identified area (based on water related disasters and hotspots), the proposed 6 sub-catchments (under priority 2) are still lacking catchment restoration investments. The upstream interventions proposed will unlock the other funding through a readiness of downstream investment which adversely could have cost more due to the sediment loads. The Government of Rwanda will co-finance some operational costs as presented by Table 22.

The project will contribute to the Adaptation Fund portfolio and KPIs by supporting an increase resilience of assets and infrastructure, and by supporting an increase in the adaptative capacity of communities in 6 of the most affected sub-catchments to flood and erosion. These needs are assessed following the consequences of flood and erosion to various sectors such as agriculture, water resources, and infrastructure. The fund requested to the Adaptation Fund will address these needs and help vulnerable communities to build resilience, reduce risks, and mitigate the impacts of climate change especially flood and soil erosion.

Adaptation needs are summarized in risk of flood and erosion and the needs interventions to increase adaptation of community following the theory of change and climate rationale discussed in the section entitled project/programme background and context and the section E (result framework). The detailed adaptation needs in relation to the project proposal is presented in the table below.

Table 13: Climate change impact and adaptation needs by sub-catchment

No	Sub-Catchment	Population Impacted by Flooding (Annual estimate)	Estimated Soil Erosion (Ton per year)	Estimated Annual Impact from Flooding (USD)	Adaptation needs		
					Intervention	Amount	Unit
1	Nyamutera	27,846	126,216	40,916	Afforestation	119	ha
					Agroforestry	411	ha
					Bamboo to close gullies	26	ha
					Bench terraces	51	ha
					Contour bank terraces	1,862	ha
					Gully rehabilitation	18	km

					Hedgerows	185	ha
					Reforestation	87	ha
					Rainwater Harvesting	360	number
					Cows	360	number
2	Rubagabaga	20,834	137,409	102,309	Afforestation	10	ha
					Agroforestry	95	ha
					Bamboo to close gullies	3	ha
					Bench terraces	836	ha
					Contour bank terraces	2,142	ha
					Gully rehabilitation	27	km
					Hedgerows	215	ha
					Reforestation	10	ha
					Rainwater Harvesting	500	number
					Cows	500	number
3	Kagere	1,699	35,719	251,613	Agroforestry	2	ha
					Bamboo to close gullies	11	ha
					Contour bank terraces	101	ha
					Gully rehabilitation	15	km
					Hedgerows	176	ha
					Rainwater Harvesting	50	number
					Cows	50	number
4	Mwora	10,344	59,753	800,049	Afforestation	11	ha
					Agroforestry	130	ha
					Bamboo to close gullies	198	ha
					Bench terraces	20	ha
					Contour bank terraces	1,131	ha
					Gully rehabilitation	37	km
					Hedgerows	659	ha
					Reforestation	42	ha
					Rainwater Harvesting	280	number
					Cows	280	number
5	Minoga	5,435	12,198	150,689	Agroforestry	52	ha
					Bamboo to close gullies	49	ha
					Contour bank terraces	137	ha
					Gully rehabilitation	7	km
					Hedgerows	202	ha

					Rainwater Harvesting	60	number
					Cows	60	number
6	Burera-Gisovu	5,700	17,422	190,838	Afforestation	1	ha
					Bamboo to close gullies	79	ha
					Contour bank terraces	139	ha
					Gully rehabilitation	8	km
					Hedgerows	110	ha
					Reforestation	3	ha
					Rainwater Harvesting	50	number
					Cows	50	number

The total investment requested to the AdF sums up to USD 10,000,001 (including IE and EE fees). The table 21 provides the overall budget while the Table 22 explains the details of the project execution cost totaling to USD 2,536,139, from which USD 850,000 request to AdF while the Government (through other financing of the VCRP programme) will provide a co-financing of USD 1,686,139.

Although this project is a component of the wider VCRP programme, it is important to note that the requested funds are sufficient to implement all adaptation measures presented in the proposal for the six sub-catchments identified, and that the implementation does not depend on the progress of activities or fund raising in other components of the wider VCRP programme. This flexibility of financing and implementation is part of the VCRP programme's funding strategy. Funding of this project is also justified based on the following:

- **Addressing Multi-faceted Challenges**: The project tackles multi-faceted challenges related to climate change adaptation, including reducing likelihood of climate hazards, enhancing community resilience, and sustainable livelihoods. These challenges require a holistic and integrated approach, involving various interventions such as introduction of nature-based solutions, infrastructure development, and capacity building. The funding requested covers nature-based solutions and capacity building activities as complementary components to the larger VCRP project that will also ensure the infrastructure development in its component 1. Funding these activities will ensure a comprehensive response to the complex climate change impacts faced by the vulnerable communities in the 6 sub-catchments.
- **Long-term Cost Savings**: Investing in climate change adaptation measures upfront will result in significant long-term cost savings. By implementing interventions that reduce and retain run-off such as afforestation, hedgerows planting, etc, the project aims to adapt to the current climate related potential hazards as well as mitigate potential damages and losses caused by future climate-related events. This proactive approach reduces the need for costly post-disaster response and recovery efforts, ultimately saving resources in the long run.
- **Enhancing Sustainable Development**: The requested funding supports sustainable development in the target region. By promoting terracing, afforestation and reforestation, agroforestry as well as rainwater harvesting systems, the project fosters long-term resilience and reduces floodings and soil erosion. This contributes to the economic (significantly contributes to agricultural activities that are the main source of income in the region), social, and environmental well-being of the communities, fostering their self-sufficiency and reducing vulnerabilities to future climate impacts.

- **Leveraging Co-benefits**: The proposed project not only addresses climate change adaptation but also generates co-benefits across various sectors. For instance, terracing, afforestation and reforestation and agro-forestry practices contribute not only to environmental conservation and biodiversity preservation, but also to agricultural productivity and which is vital in the region. The forest and trees also diversify income sources by selling sustainably harvested logs and payment for the sequestrated carbon, promoting economic growth and poverty reduction. These co-benefits amplify the overall impact of the project and justify the funding requested by extending the reach of adaptation efforts beyond climate resilience alone.

- **Ensuring Long-term Resilience**: The full cost of adaptation reasoning takes into account the long-term resilience of the communities. By implementing a comprehensive set of interventions, including capacity building, knowledge management, and monitoring systems, the project ensures the sustainability of the adaptation measures beyond the project's lifespan. This long-term perspective strengthens the case for the requested funding as it emphasizes the importance of investing in comprehensive and lasting solutions to climate change impacts.

J. Project Sustainability

The project sustainability is based on involving the communities in the implementation of the project and building their capacity throughout the process as well as incentivizing their landscape restoration efforts. From RWB's experience restoring catchments, most communities understand the benefits of sustainable land management practices and are willing to maintain what has built/planted on their land. What they lack are the resources to implement the initial land management best practice. For example, communities now understand the benefits of having terraces and have demonstrated the ability to maintain terraces. However, they lack the initial investment needed to build them. This is why the VCRP is an important project for the country; it provides the initial investment needed to have climate resilient land management practices. The initial investment will also enable the establishment of community coordination committees through which Government institutions can continue to monitor the maintenance of implemented activities.

- Participatory Approach - Smaller activities situated closer to the communities will employ a participatory and consultative approach providing job opportunities and creating a sense of ownership of the programme. The participatory approach will root ownership of the project interventions firmly in the local communities. Community ownership will also ensure that the environmental gains are not reversed. This shift from top-down to community-based implementation will significantly enhance sustainability at the local level. Efforts to involve the community, private sector, and civil society will also be carried out to ensure sustainability of the process, In addition, the project alignment with national priorities ensures Government commitment to its sustainable implementation. Involving local government entities ensure that District, Sector and Cell level play a central role in terms of project implementation and ensuring sustainability through the integration of planned activities District Performance Contracts (Imihigo). This governance structure is also supported by catchment management committees established to facilitate the project implementation and sustainability after the project end.

- Capacity Building - Capacity building activities are integrated into the project to enhance the skills and knowledge of the community members. By providing training on climate-smart agriculture, sustainable land management, sustainable livelihoods, and other relevant topics, the project equips the communities with the necessary tools to continue implementing and maintaining the project outcomes independently.

- Institutional Strengthening - The project recognizes the importance of institutional strengthening to support the sustainability of the outcomes. Collaboration with local authorities, government agencies, and relevant institutions is prioritized to ensure the integration of project activities into existing policies, plans, and programs. This promotes institutional ownership and the incorporation of project outcomes into long-term development strategies. The project has acceptable/robust oversight and accountability structure to enhance to financial sustainability of implemented

activities which involves a National Steering Committee, management oversight (that is, the MoE, REMA, and the RWB), internal oversight bodies (internal audit and audit committee), external oversight bodies (Office of the Auditor General), and Parliament that approves the government's budget to ensure that public invested funds are well managed, utilized and value for money gains. The strong emphasis on monitoring and evaluation will provide for continuous feedback on impacts and results at the community level. Moreover, the knowledge management system and communication strategy will support the mainstreaming and replication as well as lesson learning and sharing of best practices. In addition, a consultant firm will be hired to develop exit and sustainability strategies of the VCRP by time of the mid-term review in 2026 drawing key activities needed to the sustainability of the project after its end.

- For financing aspects, the funding requested in this proposal will cover all the landscape restoration investment needs for the 6 sub-catchments. Regardless of the success or other fundraising activities, the Adaptation Fund can be assured that its resources will go towards restoring more than 9,000 hectares of land. Since whole sub-catchments will be restored, the impact of the land restoration will be maximized. Furthermore, the Government of Rwanda allocates funds for catchment restoration activities every year. These funds aren't enough for initial investments, but they are enough to maintain implemented activities. . Generally, following will be done to ensure economic, social, environmental, institutional, and financial sustainability involvement of all stakeholders in project design and implementation to gain support for the activities. The project is developed in consultation with all concerned stakeholders, including local communities. This approach will result in buy-in from the stakeholders. Consequently, it will increase their support of the project and promote ownership and sustainability of the project activities. Stakeholder consultation will also be used during the implementation process to maintain and strengthen stakeholder support. Increase institutional capacity for implementation and sustainability of the project, for both, implementing agents as well as project beneficiaries (i.e. sustainable livelihoods and business development): Institutional capacity will be strengthened by training relevant line ministries, institutions, local authorities and communities. This training will enable the GoR to plan and implement similar projects in the future. The project team will work closely with Rwanda's governmental agencies and bodies at national and local (i.e. Districts, Provinces, geographic Sectors and Cells) levels. In addition, local communities in the projects` intervention sites will be engaged and trained to promote ownership of the project

K. Environmental and Social Impacts and Risks

Table 14 compiles potential risks that the project has identified based on the nature of the proposed interventions and their relevancy to the 15 risk principles of Adaptation Fund.

Table 14: Identified potential risks

AF ESP	Identified potential risk
Compliance with the Law	During terracing activities, there is high risk of land conflict related to boundaries. It is difficult to keep boundaries during terracing.
	Carbon market monopoly – With the emerging carbon market, the project might overlook other existing activities like agriculture.
Access and Equity	During the implementation of various project activities, especially the radical terraces and afforestation, there is a risk of gender and vulnerability disparities in labour allocation during implementation of the sub-catchment restoration plan.
Marginalized and Vulnerable Groups	**Gender-based violence** – At work sites with many workers, there is a risk of GBV.
	Child abuse and exploitation – Project implementation activities risk exploiting children through child labor and School dropout.
Human Rights	**Community rejection and discontent** – Restoration projects may result in community discontent especially when the concerned community were not consulted, or their voice were not considered.
	During implementation, existing crops may be destroyed due to the movement of workers.
Gender Equality and Women's Empowerment	**Social inequalities** – Landscape restoration projects might exacerbate the existing social inequalities in terms of access to available opportunities and benefits.
Core Labour Rights	**Injuries / accidents** – Terracing activities might risk several accidents.
Indigenous Peoples	No identified risk
Involuntary Resettlement	No identified risk
Protection of Natural Habitats	No identified risk
Conservation of Biological Diversity	**Biodiversity loss** – Earth moving activities like terracing might result in biodiversity loss especially amphibians and reptile's species.
	Non-Native Species Introduction – Forestation activities might include exotic trees that are not friendly to the local ecosystem.
	Root competition between trees and crops which will negatively affect the growth of trees and crops.
Climate Change	No identified risk
Pollution Prevention and Resource Efficiency	**Soil structure disturbance and water bodies pollution.**
Public Health	**HIV/STD transmission and prostitution among workers and residents**.
	Spread of water borne diseases, poor hygiene and sanitation related diseases.
Physical and Cultural Heritage	**Disruption of cultural heritage sites or practices.**
Lands and Soil Conservation	**Soil Disturbance and Compaction** – Terracing might lead to soil disturbance and compaction, affecting soil health and productivity.
	Soil erosion due to heavy rains especially during terracing.

Source: Vanguard Economics 2024

As it will be highlighted later in table 17, under environmental and social risk management section, all these potential risks are thought of in the project design and key mitigation measures have been put in place to ensure that all possible risks mentioned above are addressed. The project will not have any significant adverse environmental or social negative impacts. Based on this assessment, the project is categorized as category C. Table 15 below shows whether or not the project requires further environmental and social assessment.

Table 15:Checklist of environmental and social principles

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	X	
Access and Equity	X	
Marginalized and Vulnerable Groups	X	
Human Rights	X	
Gender Equality and Women's Empowerment	X	
Core Labour Rights	X	
Indigenous Peoples	X	
Involuntary Resettlement	X	
Protection of Natural Habitats	X	
Conservation of Biological Diversity	X	
Climate Change	X	
Pollution Prevention and Resource Efficiency	X	
Public Health	X	
Physical and Cultural Heritage	X	
Lands and Soil Conservation	X	

PART III: IMPLEMENTATION ARRANGEMENTS

A. Project Implementation Arrangements

National Implementing Entity: The Ministry of Environment (MoE) is the National Implementing Entity that will endorse the proposed Adaptation Fund Project. MoE is the Ministry responsible for ensuring sustainable development of the environment and management and rational use of natural resources. It is responsible for the development of policies, strategies, and programmes as well as the formulation of regulations and mobilizing resources for the development of the sector. The Ministry is also responsible for the monitoring and evaluation of the implementation of environment, climate change and natural resources management at the national level. MoE will be responsible for the overall management of the Project and financial, monitoring the achievement of the project outcomes/outputs, and reporting and supervision of the project with AF.
Executing Entity: The Rwanda Water Resources Board (RWB) will be the executing entity. It will be mandated to develop and implement flood mitigation and catchment rehabilitation measures. It will also work with institutions concerned with a specific aspect of the wider project, such as the Rwanda Environmental Management Authority (REMA) and the Rwanda Forest Authority (RFA) for reforestation and restoration.

Procurement of Goods, Works and Services
All procurement of goods works and services will be undertaken in accordance with National Implementing Entity's Rules of Procedure for the Procurement of Goods and Works as stipulated in the Law No 031/2022 of 21/11/2022 and Ministerial Order No 001/23/10/ TC of 10/10/2023 establishing regulations governing public procurement. MoE will submit to the secretariat, on an annual basis, a procurement audit report issued by the Auditor General's Office, or an independent auditor, on the Adaptation Fund project/s under implementation in relation to the effectiveness of its procurement systems and practice, as well as continuous availability of qualified resources in project cycle management. The report will correlate recommendations identified by the internal auditor of MoE and any relevant review by the Ministry of Economy and Finance (MINECOFIN), taking also into account any issues raised by stakeholders.

Financial Management and Auditing Arrangements

A Financial Management (FM) assessment was carried out for the project in accordance with the World Bank Policy and Directives on Investment Project Financing (IPF). The assessment was carried out on the MoE and the RWB during project preparation to determine whether the implementing entities have acceptable FM arrangements, which will ensure that (a) funds are used for the intended purposes in an effective, efficient, and economical way; (b) financial reports will be prepared in a reliable, accurate, and timely manner; and (c) project assets will be appropriately safeguarded.

The project benefits from the public financial management (PFM) reforms that the country has undergone and the project's oversight and accountability arrangements. The PFM system is anchored in solid legal frameworks and PFM strategies. Progress has been made in budget planning, expenditure efficiency, enhancement of the internal audit function, external audit coverage, and financial reporting. The Public Expenditure and Financial Accountability (PEFA) 2022 confirmed these strengths. The project has acceptable project oversight and accountability structure which involves a National Steering Committee, management oversight (that is, the MoE, REMA, and the RWB), internal oversight bodies (internal audit and audit committee), external oversight bodies (Office of the Auditor General), and Parliament that approves the government's budget.

B. **Measures for financial and project/programme risk management.**

GoR approach to risk management

The project will be implemented by the Government of Rwanda through several its Ministries and agencies. Rwanda has a robust financial and project risk management framework that governs the activities of all government institutions. The Ministry of Finance and Economic Planning has published a set of Risk Management Guidelines to be followed by all government institutions and agencies. GoR recognizes that management of risk, is an important strategy for the achievement of NST 1, the Organic Law No. 12/2013/0L of 12/09/2013 on State Finances and Property requires every public institution to put in place risk management mechanisms to manage uncertainties that could impede achievement of institution's objectives. Figure 1 below provides visualization of the GoR risk management process that is applied to all projects under its implementation. For this project, the following risk matrix has been drawn up based on an identification of the risk and how the risks will be managed and or mitigated- Table 16.

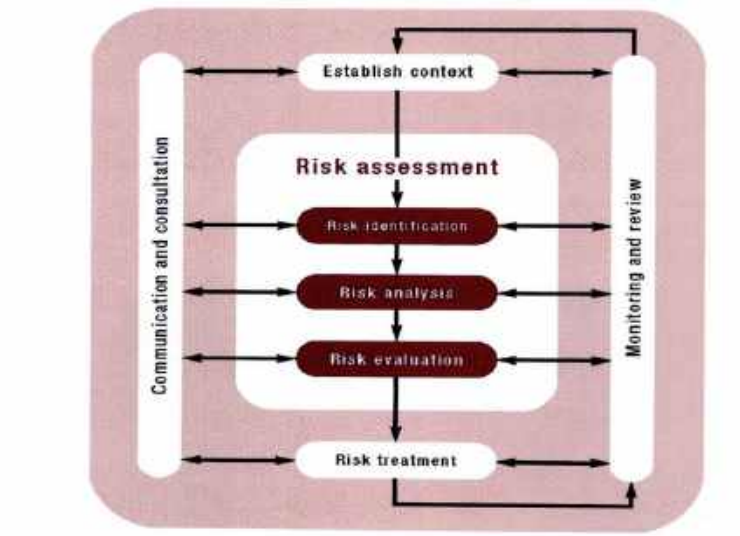


Figure 13: GoR risk management process Source: Ministry of Finance and Economic Planning - Risk Management Guidelines, 2019

Table 16: Identified project risks and mitigation strategy

Type of risk	Description	Approach to mitigation
Strategic	GoRs ministries, agencies, and other stakeholders may not demonstrate the level of commitment needed to ensure the success of the project	Continuous communication and visibility, advocacy, and engagement with key stakeholders during the implementation of the project to secure and maintain political buy in.
		Consulting fully with the stakeholders so that the project remains relevant to their needs.
		Networking and establishing meaningful partnerships in support of delivery of the project
Financial	GoR implementing agencies lack the capacity to manage and track the project funds.	GoR through MINECOFIN has a system of annual assessments that ensure that projects are on track and that funds are spent on activities that had been agreed upon. An assessment of fund utilization will be done both annually and in the project evaluations.
		GoR internal audit function led by the Auditor general will ensure that all financial controls are in place and are being

		followed.
Economic	Some households and communities may benefit more than others from the implementation of the project	Implementation of each intervention should include an inclusion assessment that guides the targeting of beneficiaries. Data should be collected on who in the targeted beneficiaries has or has not benefited from the project as designed.
		Continuous M&E of the project will help guide the implementation process and ensure that it is equitable.
Developmental	Some segments of the targeted population are left out of the beneficiation of the project – youth, women, and PWDs. The project fails to deliver on its climate, environment, and conservation objectives	Implementation of the plan should mainstream youth, gender and PWDs across all interventions. Each intervention should include an audit on the how climate, environment, and conservation objectives will be impacted, or negative effects will be mitigated and or eliminated.
Operational	GoR is unable to raise enough funding to implement the project	GoR needs to draw up a funding strategy that will help raise financial support and commitment to support implementation at both the local and national government levels.
	Poor visibility of the impacts and benefits of the project	Proactive, timely and planned communication and visibility actions throughout the duration of the project
Technical	Delayed progress in the implementation of the project that could impact on its usefulness to the affected communities.	Effective coordination at all levels – community, local and national government and with implementing partners (NGOs or private sector) to ensure the agreed interventions are delivered in a timely manner

Source: Vanguard Economics 2024

C. Environmental and Social Risk Management

Table 17: Environmental and Social Risk Management

Type of risk	Description	Alignment with AdF	Measure to manage risk
Environmental **Social**	**Soil Disturbance and Compaction –** Terracing might lead to soil disturbance and compaction, affecting soil health and productivity.	This risk is reflected in the fund's principle of Lands and Soil Conservation.	The project will use sustainable practices like avoidance of heavy machinery to minimize the disturbance and avoid soil compaction
	Soil erosion due to heavy rains especially during terracing.	This risk is reflected in the fund's principle of Lands and Soil Conservation	Soil erosion related risks will be addressed through re-vegetation of exposed areas around the site should be carried out rapidly in order to mitigate erosion of soil through surface water runoff and wind erosion. In addition, restoration interventions especially terraces shall be carried out during dry seasons.
	Biodiversity loss – Earth moving activities like terracing might result in biodiversity loss especially amphibians and reptile's species	This risk is reflected in the fund's principle of Conservation of Biological Diversity	• The project will be executed by environmental experts working closely with local community and leveraging local knowledge to prevent unintended harm to local ecosystems. • The related risk will be mitigated/addressed through ensuring the vegetation clearance only remains within the project footprint; Avoid unnecessary destruction of the surrounding vegetation, and ensure reforestation of cleared or degraded sites by agroforestry trees; Preserve (or stockpile) excavated topsoil for future site restoration procedures and finally planting trees on exposed slopes
	Soil structure disturbance and water bodies pollution.	This risk is reflected in the fund's principle of 1) Pollution Prevention & Resource Efficiency and 2) Lands and Soil Conservation.	These risks will be addressed/mitigated through application of organic fertilizer, planting of soil stabilization trees ensuring an appropriate lime application to avoid water body pollution and avoid soil deposit in river.
	Non-Native Species Introduction – Forestation activities might include exotic trees that are not friendly to the local ecosystem	This risk is reflected in the fund's principle of Conservation of Biological Diversity	• In forestry and agroforestry, the project will only encourage indigenous tree species. • This will be addressed through community mobilization and local authorities consultation to ensure that farmers' preference is taken into account during selection of species to be planted in the project site.

	Root competition between trees and crops which will negatively affect the growth of trees and crops.	This risk is reflected in the fund's principle of Conservation of Biological Diversity	Root competition shall be avoided by regularly pruning of the roots of big trees to avoid/ reduce competition. In addition, respecting recommended techniques for agroforestry trees plantation and maintenance.
	Social inequalities – Landscape restoration projects might exacerbate the existing social inequalities in terms of access to available opportunities and benefits	This risk is reflected in the fund's principle of Conservation of 1) Access & equity and 2) Marginalized & vulnerable groups, 3) Gender Equality and Women's Empowerment, and 4) Core Labour Rights	This risks will be addressed through providing equal chances to all categories of people in benefiting from the project by establishing workers' grievance redress committees (WGRCs), and community grievance committees (CGRCs) to handle all grievances that may arise. In addition, Gender Action Plan will be developed to ensure that both women and girls benefit and participate in the project. Gender related targets will be set and tracked throughout the project implementation.
	During terracing activities, there is high risk of land conflict related to boundaries. It is difficult to keep boundaries during terracing.	This risk is reflected in the fund's principle of Compliance with the Law	To address this issue wooden poles/pegs shall be used to clearly demarcate the boundaries of plots of the people who will give away their land for radical terraces construction
	Gender-based violence – At work sites with many workers, there is a risk of GBV.	This risk is reflected in the fund's principle of Marginalized and Vulnerable Groups	GBV related risks will be mitigated or addressed through Sensitization (regular training and meeting on anti-Gender Based Violence). Immediate contact of service providers (Isange OSC, RIB) shall be performed in occurrence of a GBV case.
	Child abuse and exploitation – Project implementation activities risk exploiting children.	This risk is reflected in the fund's principle of Marginalized and Vulnerable Groups	This risk will be mitigated by ensuring the recruitment of workers is in line with Rwanda labor law, identity cards shall be used to check their age as well as conducting regular training and meetings preventing the use of students in project activities are regularly provided to contractors, workers, and local community. In holidays, students can be employed following the Rwanda labor low.
	Disruption of cultural heritage sites or practices	This risk is reflected in the fund's principle of Physical and Cultural Heritage	The project implementation will avoid destruction of areas of historic interest (Cemeteries, Genocide memorials and recreational areas)

	Community rejection and discontent – Restoration project may result in community discontent especially when the concerned community were not consulted, or their voice were not considered.	This risk is reflected in the fund's principle of 1) Compliance with the Law and 2) Human Rights, and 3) Involuntary Resettlement	This will be addressed through regular consultation with the community on each activity to be conducted and providing project-affected parties with accessible and inclusive means to raise issues and grievances and allow the project team to respond to and manage those grievances.
	Carbon market monopoly – With the emerging carbon market, project might overlook other existing activities like agriculture	This risk is reflected in the fund's principle of 1) Compliance with the Law and 2) Human Rights	The project will ensure that carbon capture efforts do not monopolize land needed for community activities, especially agriculture.
	HIV/STD transmission and prostitution among workers and residents	This risk is reflected in the fund's principle of Public Health	These risks will be mitigated or addressed through awareness campaign on prevention of STDs, use of condoms, voluntary testing to determine HIV/AIDs & other STDs status and counseling at existing medical facilities.
	Spread of water borne diseases, poor hygiene and sanitation related diseases.	This risk is reflected in the fund's principle of Public Health	These risks will be mitigated or addressed through ensuring availability of appropriate and sufficient mobile toilets on site (separated for men and women); availing appropriate and sufficient hand washing facilities on site and finally provision of regular awareness campaign among workers and community members.
	Injuries / accidents – Terracing activities might risk several accidents	This risk is reflected in the fund's principle of Core Labour Rights	These risks will be addressed through sensitization (regular training and meeting on accidents and incidents prevention, use of appropriate PPEs, availing First aid kits at the project sites and ensuring that the contractor have site insurance.
	During implementation, existing crops may be destroyed due to movement of workers.	This risk is reflected in the fund's principle of Human Rights	This will be addressed through conducting sensitization and awareness programme to call people and workers not to destroy existing crops and only existing pathways shall be recommended to be used.
	Gender and vulnerability disparities in labour allocation during implementation of the sub-catchment restoration plan	This risk is reflected in the fund's principle of Access and Equity	To address this, the project will ensure the prioritization of local people during workers recruitment by women and other vulnerable people in the project area.

Source: Vanguard Economics 2024

D. Monitoring and Evaluation Arrangements

Measuring the performance of this project is critical to helping assess its impact on (1) the community that lives in the catchments, (2) watershed health, (3) GoR policy on degraded landscape restoration as an adaptation measure. Measuring the progress and learning will also help in identifying and addressing all environmental and social risks identified during project design and implementation. The table below shows the M&E arrangement and their budget.

Table 18: M&E Arrangements

M&E arrangement	Description	M&E Budget
Monitoring the implementation progress	The IE - MoE- will monitor the project implementation on an annual basis using the results framework. For effective results, a baseline study will be required before implementation of the project commences.	USD 70,000
Evaluation of the project -	The project will be evaluated on an annual basis using the MoE annual project reporting framework. Additionally, a mid-term and terminal evaluation of the project are planned. The mid-term evaluation will be done two years into the project and will be commissioned by the project steering committee. Both mid-term and terminal evaluation will use the OECD DAC evaluation criteria. Lessons and impact stories will be captured and shared with relevant stakeholders following the completion of each evaluation cycle – Annual, mid-term, and terminal.	USD 100,000

Source: Vanguard Economics 2024

Monitoring and reporting systems of GBV Prevention and Mitigation Action Plan

The project will manage the monitoring of GBV/ SEA & SH prevention and response activities by developing and implementing a monitoring system to collect all information related to GBV. It is obvious that M&E plays a key role in assessing the effectiveness of prevention and mitigation measures; so that the following indicators related to the GBV/SEA & SH prevention activities on the project; and Grievance Redress Mechanism (GRM) will highly be considered:

- Successful implementation of agreed GBV/SEA and SH Prevention and Response Action Plan in line with the developed GAP;
- Number of training courses related to GBV/SEA and SH delivered;
- Percentage of workers that have signed a Code of Conduct (CoC); and/or
- Percentage of workers that have attended CoC training.

The action plan's following key indicators will be tracked during the project implementation:

- Number of key GBV issues identified;
- Percentage of cases reported;
- No of Government Institutions, Civil Society Organisations and Faith Based organisations supporting prevention and Mitigation of GBV;
- No of HHs experiencing Family conflicts and GBV;
- No of women, men, Youth (female and Male) PwDs and elderly with knowledge on GBV;
- No of People (Male, female, Youth and PWDs) trained on GBV;
- Percent of People (Men and Women, Youth: male and female and PWDs (Male and Female) with awareness on GBV;
- No of GBV victims reported and documented (Male and female);
- Percent of GBV victims assisted; and
- No of Perpetrators of GBV identified and reported to competent authorities

Project activities related to major infrastructural works and respective safeguard staff will have a significant role to play in supporting safe spaces for women and men to report their experiences of violence. It should be noted that an increase in the number of reported cases does not necessarily mean

that GBV/SEA and SH incidents have increased; it can also reflect improved mechanisms for safe and confidential reporting and increased interest in accessing GBV support services. It should be emphasized that no reporting should have identifiable information on individual cases. It will be essential that the confidentiality and safety of victims be protected.

E. Results Framework

A. Theory of Change - Integrated catchment and landscape restoration

Table19: The project Theory of Change

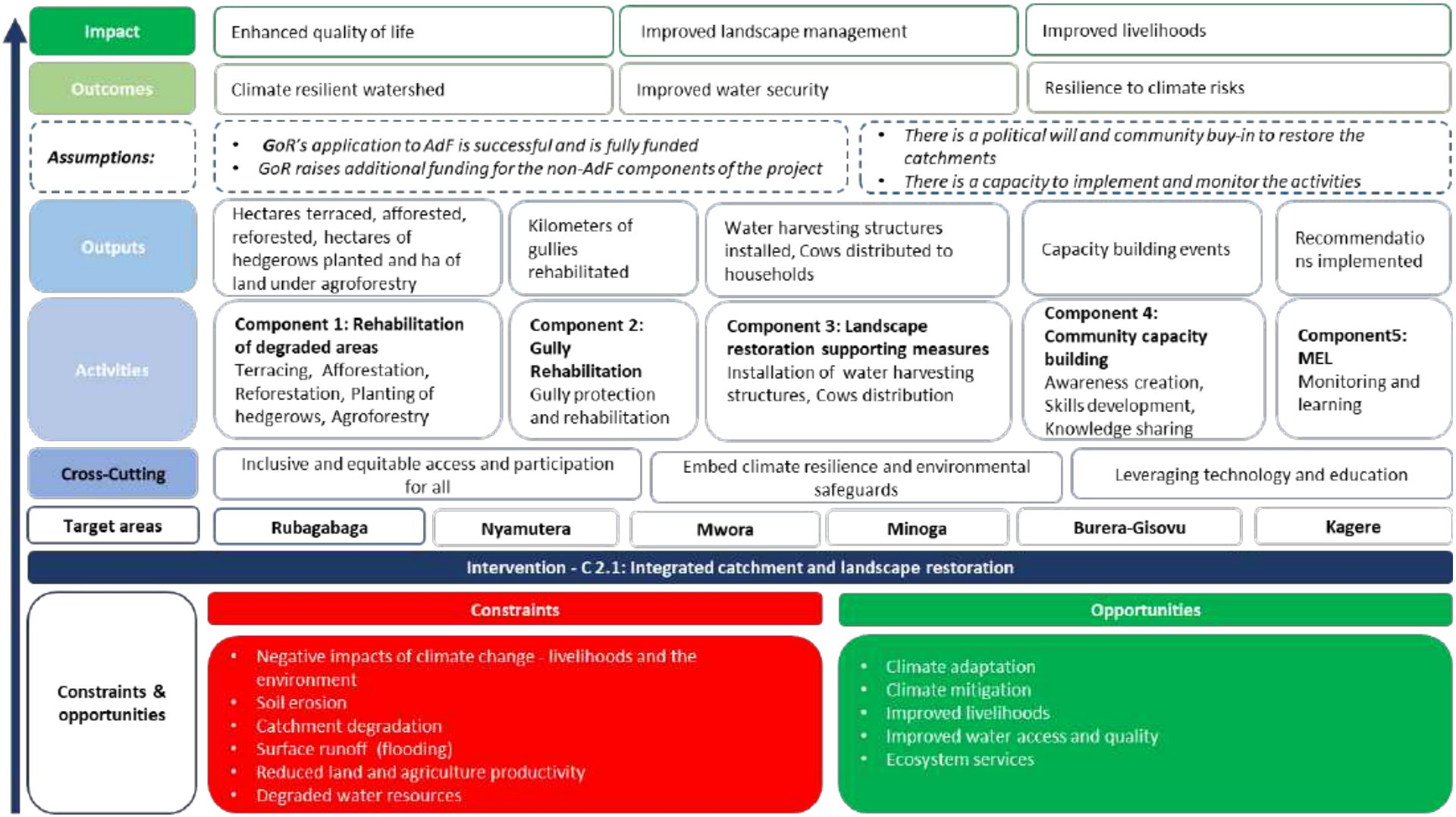


Table 20: Impacts, Outcomes and how they will be measured.

Impact level	How it will be measured	Data sources
Enhanced quality of life	% of beneficiaries accessing quality drinking water, improved sanitation, and secured housing.	NISR – Multidimensional Poverty Index
Improved Landscape management	Area of improved landscape management	RWB Documents
Improved livelihoods	Increased household income (Annually)	Survey
	Number/value of household assets acquired	NISR Household survey
Outcome level	**How it will be measured**	**Data sources**
Climate resilient watershed	% of watershed area with proper landscape management	Survey - RWB
Improved water security	Number of households with water harvesting infrastructures	Distribution list - RWB
Resilience to climate risks	Reduced number of disasters	MINEMA

Source: Vanguard Economics 202

1. The Theory of Change (ToC)

The dynamics of implementing this project requires an understanding of the challenges and opportunities that currently communities in the 6 proposed sub-catchments face due to climate change impacts. As indicated previously, these challenges and opportunities have been identified through the collection and analysis of primary and secondary data, especially in-depth consultations with stakeholders at the local, regional, and national levels. The ToC presented in figure above attempts to explain how these challenges can be addressed and opportunities exploited to deliver the type of impact that was envisioned under this project /programme.

2. Project components

Based on the extensive consultations with stakeholders on the constraints and opportunities related to the catchment restoration, the following areas of intervention have been proposed in this action plan.

- **Rehabilitation of degraded areas** through terracing, afforestation, reforestation, agro-forestry, and hedgerows practices.
- **Gully rehabilitation.**
- **Reduction of water runoff**
- **Community capacity building**
- **Levels of intervention**

3. Cross cutting themes

In implementing the project, it's imperative that several cross-cutting issues are embedded and or considered in the design of the interventions. These include the followingneed

- **Inclusive and equitable access and participation for all** – An inclusion lens needs to be applied to ensure equitable access and participation by all. This means a careful understanding of the factors that may exclude the participation of some sections of society and how these would be addressed. Additionally, the M&E data collected on the impact of the project should be disaggregated to understand how different groups have benefited or been affected by the implementation of the plan.

- **Embed climate resilience and environmental safeguards** – Imperative that all interventions are assessed on how they adapt to existing climate related impacts as well as reduce and mitigate climate and environmental impacts.

- **Leveraging technology & education** – Where relevant digital solutions should be explored to simply process and to aid data collection and analysis and communication. In doing so, it will be important for these solutions to be tailored to be inclusive so as not to exclude vulnerable groups that may not be digitally literate or have the infrastructure and tools to participate on these platforms.

4. Assumptions underlying the ToC

There are several assumptions underlying the ToC. The assumptions are the conditions that need to be in place for this project to deliver on the outputs, outcomes and impacts outlined in the ToC. The assumptions explain the logic behind the project and the causal links attributed to the climate, conservation, economic and social impacts that the plan is expected to deliver to the targeted communities. The following assumptions are proposed.

- GoR's application to AdF is successful and is fully funded.
- GoR raises additional funding for the non-AdF components of the project.
- There is political will and community buy-in to restore the catchments.
- There is a capacity to implement and monitor the activities.

A. Outputs and indicators

Table 20 presents the output indicators and how they will be measured. The outputs and indicators outlined are not conclusive and can be further refined at the start and during the implementation of the project.

Table 20: Output indicators and their measurement

Output	Output Indicator	Target	How it will be measured	Source of data
Hectares terraced, afforested, and reforested	Number of ha terraced, afforested, and reforested	6,700	Field measurements using GPS and GIS tools	RWB SPIU
Kilometers of gullies rehabilitated	Number of km of gullies rehabilitated	110	Field measurements using GPS and GIS tools	RWB SPIU
Hectares of hedgerows planted and ha of land under agroforestry	Number of ha of hedgerows planted and ha of land under agroforestry	2,200	Field measurements using GPS and GIS tools	RWB SPIU
Water harvesting structures installed	Number of water harvesting structures installed	1,300	Signed distribution forms	RWB SPIU
Hectares of planted bamboos	Number of ha of planted bamboos	360	Field measurements using GPS and GIS tools	RWB SPIU
Cows distributed to households	Number of cows distributed to households	1,300	Signed distribution forms	RWB SPIU
Capacity building events	Number of capacity building events	100	Event minutes and attendance form	RWB SPIU
Recommendations implemented	Number of recommendations implemented	All	Terminal evaluation report	RWB SPIU

Source: Vanguard Economics 2024 & Rwanda Water Resources Board

F. Alignment with the Results Framework of the Adaptation Fund

Table 21: Alignment of result frameworks

Project Objective(s) [14]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)	Area in the budget
Climate resilient watershed	% of beneficiaries accessing quality drinking water, improved sanitation, and secured housing.	Outcome 5: Increased ecosystem resilience in response to climate change and variability induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	8,384,040	Component 1,2,3, and 4
Improved water security	Number of beneficiaries with water harvesting structures				
Resilience to climate risks	1. Increased household income (Annually) 2. Number/value of household assets acquired	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets		
		Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate		
		Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	150,000	Component 5
			3.2. Percentage of targeted population applying appropriate adaptation responses		

[14] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

G. Detailed Budget

The overall requested funding is US$ 10,000,000 over 3 years.

Component 1- **Rehabilitation of degraded areas** - will cost US$ 6,182,229 for the activities under this component.

Component 2- **Gully Rehabilitation** – will cost US$ 441,612 for the activities under this component.

Component 3 – **Landscape restoration supporting measures-** will cost US$ 1,760,200 for the activities under this component.

Component 4 – **Community capacity building and Knowledge management -** will cost US$ 150,000 for the activities under this component.

Component 5 – **Monitoring, Evaluation and Learning -** will cost US$ 1,465,960 which includes:

- Project execution cost- will be US$ 850,000. Its breakdown in in table 23
- Implementation Entity fee – will be US$ 615,960.

Table 22: Detailed Budget

Budget								
Components	Activity	Unit	Qty	Rate	Cost	Year 1	Year 2	Year 3
Total Budget					**10,000,000**	**3,073,979**	**3,889,543**	**3,036,479**
Component 1 - Rehabilitation of degraded areas					**6,182,229**	**1,854,669**	**2,472,891**	**1,854,669**
					6,182,229	1,854,669	2,472,891	1,854,669
	Hectares of bench terraces	Ha	908	2,941	2,669,448	800,835	1,067,779	800,835
	Hectares of contour bank terraces	Ha	5,512	536	2,956,742	887,023	1,182,697	887,023
	Hectares of afforestation	Ha	142	775	110,147	33,044	44,059	33,044
	Hectares of reforestation	Ha	142	775	110,322	33,097	44,129	33,097
	Hectares of hedgerows	Ha	1,546	160	247,683	74,305	99,073	74,305
	Hectares of agroforestry	Ha	691	127	87,888	26,366	35,155	26,366
Component 2: Gully Rehabilitation					**441,612**	**132,484**	**176,645**	**132,484**
					441,612	132,484	176,645	132,484
	Kilometers of gullies rehabilitated	Km	111	3,239	360,722	108,217	144,289	108,217
	Hectares of bamboo planted close to gullies	Ha	367	220	80,890	24,267	32,356	24,267
Component 4: Landscape restoration supporting measures					**1,760,200**	**528,060**	**704,080**	**528,060**
					850,200	255,060	340,080	255,060
	Number of structures installed	number	1,300	654	850,200	255,060	340,080	255,060
					910,000	273,000	364,000	273,000
	Number of cows distributed	number	1,300	700	910,000	273,000	364,000	273,000
Component 5: Community capacity building and Knowledge management					**150,000**	**75,000**	**37,500**	**37,500**
					30,000	15,000	7,500	7,500
	Awareness campaings	number	5	6,000	30,000	15,000	7,500	7,500
					90,000	52,500	22,500	15,000
	Skills development events	number	20,000	5	90,000	52,500	22,500	15,000
					30,000	7,500	7,500	15,000
	Knowledge sharing tools	number	10	3,000	30,000	7,500	7,500	15,000
Component6: MEL					**1,465,960**	**483,767**	**498,426**	**483,767**
	Project Execution Cost (9.2%) - RWB				850,000	280,500	289,000	280,500
	Implementing entity fee (6.6%) - MoE				615,960	203,267	209,426	203,267

A breakdown of the project execution costs is shown in Table 23. The costs comprise 19 staff within the project implementation unit. These costs amount to USD *2,536,139*. USD 850,000 of the financing will come from the AF and the rest from GoR co-finance option.

Table 23: Project execution cost

Project output/activity	Year 1	Year 2	Year 3	Total, USD	AdF	
Project execution costs (< 9.5% of the total budget requested, before the implementing entity fees)						
Project coordinator gross salary	52,961	52,961	52,961	158,882	`	1
Financial management specialist salary	26,551	26,551	26,551	79,652	79,652	2
Monitoring and evaluation specialist gross salary	26,551	26,551	26,551	79,652	79,652	3
Soil and water conservation specialist gross salary (2)	57,708	57,708	57,708	173,123	173,123	4
Soil and water conservation officer gross salary (4)	63,228	63,228	63,228	189,684	189,684	5
Accountant gross salary (2)	31,614	31,614	31,614	94,842	94,842	6
Procurement Specialist gross salary	26,551	26,551	26,551	79,652	0	7
Legal (contract management) Specialist gross salary	26,551	26,551	26,551	79,652	0	8
Environmental Safeguard Specialist gross salary	26,551	26,551	26,551	79,652	0	9
Social Safeguard Specialist gross salary	26,551	26,551	26,551	79,652	0	10
Logistics officer gross salary	14,362	14,362	14,362	43,087	0	11
Drivers (3) gross salary	4,537	4,537	4,537	13,610	0	12
Purchase of Vehicles (3)	315,000			315,000	0	13
Purchase of Motorcycles (4)	20,000			20,000	0	14
Contribution to VCRP program operations at RWB						15
ESS (Exit and Sustainability Strategy)	0	0	100,000	100,000	50,000	
Final Evaluation	0	0	100,000	100,000	50,000	
Contingency	350,000	350,000	150,000	850,000	133,048	
Subtotal	***1,068,713***	***733,713***	***733,713***	***2,536,139***	***850,000***	
Percent expenditure per year	*42%*	*29%*	*29%*			

Budget Notes

No.	Budget Notes
1	Hired at project inception
2	Hired at project inception
3	Hired 1 month after project inception to enable PM to participate in recruitment
4	Hired 1 month after project inception to enable PM to participate in recruitment
5	Hired 1 month after project inception to enable PM to participate in recruitment
6	Hired 1 month after project inception to enable PM to participate in recruitment
7	Hired 1 month after project inception to enable PM to participate in recruitment
8	Hired 1 month after project inception to enable PM to participate in recruitment
9	Hired 1 month after project inception to enable PM to participate in recruitment
10	Hired 1 month after project inception to enable PM to participate in recruitment
11	Hired 1 month after project inception to enable PM to participate in recruitment
12	Hired at project inception
13	Toyota brand vehicle with up to 8 seats for mobility
14	To ensure mobility to the fields by staff
15	Contribution to VCRP program operations at RWB (ESS, Final Evaluation and Contingency)
	For gender responsive implementation, the technical assistances that will conduct Village Land Use Action Plans and community awareness sessions will both include gender specialists. These specialists will train the community and the VCRP staff. Furthermore, the gender specialist at the IE level, will train and work with safeguard specialists at the EE level to ensure that all activities, safeguards and commitments the project made in the GAP and ESMF will be achieved. The two technical assistances are currently being procured by MoE using WB funds and their work is expected to start by the end of this year. The gender specialist at MoE is also on board and paid using WB funds.

H. Disbursement Schedule

Disbursement arrangements:

Adaptation Fund resources will be disbursed in accordance with National Implementing Entity's Rules of Procedure and Operational Procedures. The following two disbursement methods will be used: (i) the direct payment method for works, goods and services contracts; (ii) the special account or revolving fund (RF) method for goods and services contracts and for operating costs, project staff allowances and sundry management costs.

Adaptation Fund resources will be deposited into the special account opened by the project Executing Entity (RWB) in a local bank deemed acceptable to the Adaptation Fund. The provisions set forth in the Adaptation Fund's Disbursement Manual will apply. Disbursements from the special account will be made as an advance, based on an annual work programme and budget approved. Every request for an advance will be submitted to the NIE for approval and will cover a maximum period of six months of operations. The special account will be replenished based on requests by RWB, backed by supporting documents for the use of at least 100% of the advance previously received.

MoE will also provide effective co-ordination with other climate change projects in Rwanda creating linkages where necessary. MoE will appoint a Programme Officer in Kigali to ensure the efficient disbursement and use of donor funds and timely delivery of project inputs and outputs. S(he) will also coordinate all other responsible parties for the purposes of forming the Steering Committee and Technical Advisory Group as well as support project implementation by assisting in recruiting and contracting of project personnel and consultant services, sub-contracting and procuring equipment in accordance with Government guidance and procedures (see above). Table 24 provides the proposed disbursement schedule of the AdF fund.

Table 24: Disbursement schedule

	On signing agreement	Year 1	Year 2	Year 3	Total
Date	**2024**	**25-Jan**	**26-Jan**	**27-Jan**	
Project Funds from AdF in USD	3,000,000	5,000,000	1,500,000	500,000	10,000,000

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

Record of endorsement on behalf of the government [15]

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

(Enter Name, Position, Ministry)	Date*: (Month, day, year)*

Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (……list here…..) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

[15] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

Name & Signature Implementing Entity Coordinator	
Date: *(Month, Day, Year)*	Tel. and email:
Project Contact Person:	
Tel. And Email:	

ADAPTATION FUND

Letter of Endorsement by Government

REPUBLIC OF RWANDA

MINISTRY OF ENVIRONMENT
P.O. BOX 3502 KIGALI

Kigali, on 11th July 2024
N°..0794.../16.03

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for Enhancing Adaptation Through Catchments Restoration in 6 Sub-Catchment of Mukungwa Catchment in Rwanda Project

In my capacity as designated authority for the Adaptation Fund in Rwanda, I confirm that the above national grant proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Rwanda.

Accordingly, I am pleased to endorse the above grant proposal with support from the Adaptation Fund. If approved, the project will be implemented by the Ministry of Environment and executed by Rwanda Water Resources Board.

Sincerely,

Patrick KARERA
Permanent Secretary

Annex A : Checklist to guide gender mainstreaming and addressing GBV in different phases of project cycle.

The following questions are relevant for each of the four main stages in the project cycle: identification, design, implementation, evaluation.

I I. STAGE 1- WOMEN'S DIMENSION IN PROJECT IDENTIFICATION

1.1. Assessing women's needs

1. What needs and opportunities exist for increasing women's productivity and/or production?

2. What needs and opportunities exist for increasing women's access to and control of resources?

3. What needs and opportunities exist for increasing women's access to and control of benefits?

4. How do these needs and opportunities relate to the country's other general and sectoral development needs and opportunities?

5. Have women been directly consulted in identifying such needs and opportunities?

1.2 Assessing women's constraints and barriers in accessing project benefits and participating in project activities.

1. What constraints are women faced with in increasing productivity and/or production?

2. What constraints are women faced with in increasing access to and control of resources?

3. What constraints are women faced with in increasing access to and control of benefits?

4. How do these constraints relate to the country's other general and sectoral development needs and opportunities?

5. Have women been directly consulted in identifying such constraints?

1.3. Defining general project objectives

1. Are project objectives explicitly related to women's needs?

2. Do these objectives adequately reflect women's needs?

3. Have women participated in setting those objectives?

4. Have there been any earlier efforts?

5. How has the present proposal built on earlier activity?

1.4. Identifying possible negative effects

1. Might the project reduce women's access to or control of resources and benefits?

2. Might it adversely affect women's situation in some other way?

3. What will be the effects on women in the short and longer term?

II. STAGE 2- WOMEN'S DIMENSION IN PROJECT DESIGN

2.1. Project impact on women's activities

1. Which of these activities (production, reproduction and maintenance, socio-political) does the project affect?

2. Is the planned component consistent with the current gender denomination for the activity?

3. If it is planned to change the women's performance of that activity, i.e., focus of activity, remunerative mode, technology, mode of activity) is this feasible, and what positive or negative effects would there be on women?

4. If it does not change it, is this a missed opportunity for women's roles in the development process?

5. How can the project design be adjusted to increase the above-mentioned positive effects, and reduce or eliminate the negative ones?

2.2. Project impact on women's access and control

1. How will each of the project components affect women's access to and control of the resources and benefits engaged in and stemming from the production of goods and services?

2. How will each of the project components affect women's access to and control of the resources and benefits engaged in and stemming from the reproduction and maintenance of the human resources?

3. How will each of the project components affect women's access to and control of the resources and benefits engaged in and stemming from the socio-political functions?

4. What forces have been set into motion to induce further exploration of constraints and possible improvements?

5. How can the project design be adjusted to increase women's access to and control of resources and benefits?

III.STAGE 3- WOMEN'S AND MEN’S DIMENSIONS IN PROJECT IMPLEMENTATION

3.1. Personnel

1. Are project personnel aware of taking into consideration women's and men’s needs?

2. Are women and men used to deliver the goods or services to women beneficiaries?

3. Do personnel have the necessary skills to provide any special inputs required by women and men?

4. What training techniques will be used to develop delivery systems?

5. Are there appropriate opportunities for women and men to participate in project management positions?

3.2. Organizational structures

1. Does the organizational form enhance women's and men’s access to resources?

2. Does the organization have adequate power to obtain resources needed by women and men from other organizations?

3. Does the organization have the institutional capability to support and protect women and men during the change process?

3.3. Operations and logistics

1. Are the organization’s delivery channels accessible to women and men in terms of personnel, location and timing?

2. Are there mechanisms to ensure that the project resources or benefits are not usurped by males/females?

3.4. Finances

1. Do funding mechanisms exist to ensure program continuity?

2. Are funding levels adequate for proposed tasks?

3. Is preferential access to resources by males avoided to ensure men and women equitable access?

4. Is it possible to trace funds for women and men from allocation to delivery with a fair degree of accuracy?

3.5. Flexibility

1. Does the project have a management information system which will allow i t to detect the effects of the operation on women and men?

2. Does the organization have enough flexibility to adapt its structures and operations to meet the changing or new-found situations of women and men?

IV. STAGE 4- WOMEN'S AND MEN’S DIMENSIONS IN PROJECT EVALUATION

4.1. Data requirements

1. Does the project's monitoring and evaluation system explicitly measure the project's effects on women and men?

2. Does it also collect data to update the Activity Analysis and the Women's and men’s Access

and Control Analysis?

3. Are women and men involved in designating the data requirements?

4.2. Data collection and analysis

1. Are the data collected with sufficient frequency so that necessary project adjustments could be made during the project?

2. Are the data fed back to project personnel and beneficiaries in an understandable form and on a timely basis to allow project adjustments meant to address existing inequalities between men and women?

3. Are women and men involved in the collection and interpretation of data?

4. Are data analyzed in a gender sensitive way so as to provide guidance to the design of other projects?

5. Are key areas of WID/GAD research identified?

The gender expert using this checklist should assess for every question asked possible risks of GBV embedded in it and ensure specific needs of youth (males and females), people with disability (PWDs), elderly persons and other vulnerable groups are addressed to ensure total inclusion.

Annex 1. Downscaled climate scenarios for the project site

Table 1. Annual peak rainfall (mm) for the Kinigi and Rwankeri stations for different recurrence intervals for the observed data and the climate adjusted data (VCRP Feasibility study Flood Modelling and Control Measures, annex 2B)

Recurrence interval	Kinigi		Rwankeri	
	Current	2050	Current	2050
2 years	52.1	65.9	43.2	59.0
5 years	64.7	82.2	55.2	73.7
10 years	72.7	93.1	62.6	81.4
25 years	82.5	107.1	71.4	89.3
50 years	89.8	117.7	77.7	94.2
100 years	96.9	128.5	83.7	98.4

Annex 2. Administrative area covered by the project

Rwanda is currently composed of two layers of government (central and local) and of six administrative entities: The country is divided into four Provinces and the City of Kigali which are also further divided into 30 districts. Moreover, the districts are further divided into 416 Sectors. Additionally, the sectors are further divided into 2,148 cells and lastly, these cells are divided into 14,837 villages. The unit of planning of VCRP programme are catchment level 3 (there are more 749 catchment level 3 in country). The proposed project will be implemented in 6 catchment level 3 (classified as priority 2a out of a total of 66 catchment level 3 for the entire programme). The 6 catchment crosses 4 districts namely Musanze, Burera, Nyabihu and Ngororero. Not all the sectors of these districts are covered by the project but only 15 sectors out 57 sectors in the four districts.

The consultations have been organized at district and sector level to capture all the diversity of views among the community to benefit from the districts, prior to the implementation, the action plans precising the options among interventions (spacing of trees preferred, species of trees, etc.) are conducted under the Village land use planning, and validated at higher level (catchment level 2, level 1, or in available environmental or project committee at higher level than a village as per the recommendation of the district coordination committee or the Mukungwa catchment committee).

Table 2.1. representing sectors (3rd level of administrative division) and catchment level-3 covered

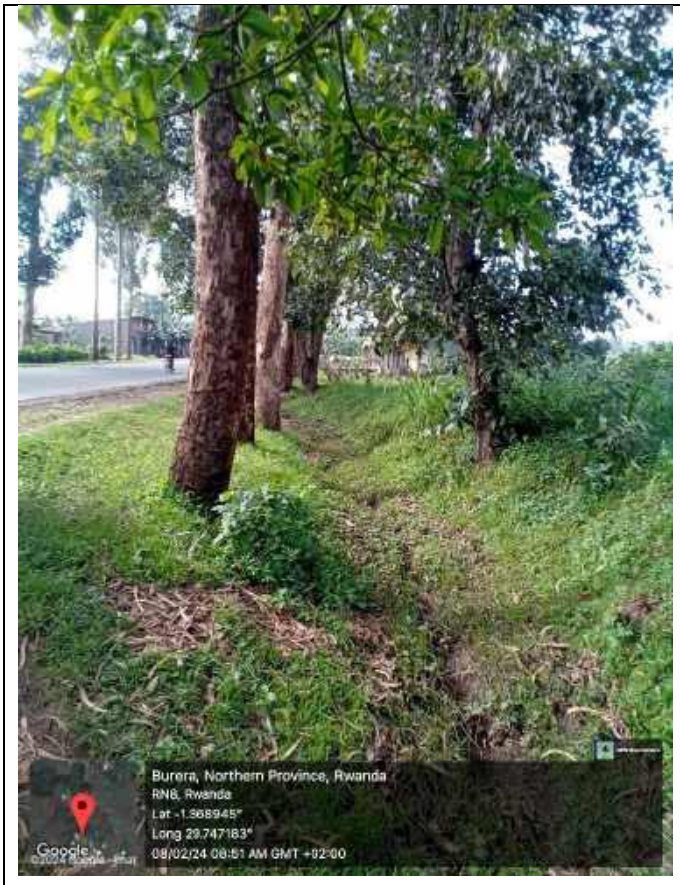
Sectors	Catchment level-3
Cyanika (Burera District) Kagogo (Burera District) Rugarama (Burera District)	Burera-Gisovu
Cyanika (Burera District) Rugarama (Burera District) Gahunga (Burera District)	Minoga
Kintobo (Nyabihu District) Rugera (Nyabihu District) Rurembo (Nyabihu District) Nkotsi (Musanze District)	Nyamutera
Shyira (Nyabihu District) Jomba (Nyabihu District) Kabaya (Ngororero District) Hindiro (Ngororero District) Matyazo (Ngororero District)	Rubagabaga
Cyanika (Burera District) Kagogo (Burera District)	Kagere
Kinoni (Burera District) Rugarama (Burera District) Cyuve (Musanze District)	Mwora

Gacaca (Musanze District) Gahunga (Burera District)	

Annex 3. Field visit of hotspots' sites affected by floodings

Burera District

1.Hotspot name ID: Cya 1
District: Burera
Sector: Cyanika
River name: Kagere gully – downstream
Name of catchment: Kagere
Latitude: -1.36875
Longitude: 29.747198
FLOOD ISSUES
Description: It is an endorheic gully coming from the Muhabura mountain, this is the end point of the gully, that collect the water coming from the mountain as well as the water drained from the road nearby, since it is a minimum elevation point. All the water is drained into a culvert of DN1000 that flows down the main road and discharge downstream across the valley.
Criticalities: there is not a clear water way and most of all there is no outlet of the water that creates floodplain over the nearby crop land and road.
Possible solutions: Define the water way and a safe outlet.
PHOTOS



2.Hotspot name ID: KAG_HOT

District: Burera

Sector: Cyanika

River name: Kagere gully – upstream

Name of catchment: Kagere

Latitude: -1.376601

Longitude: 29.722810

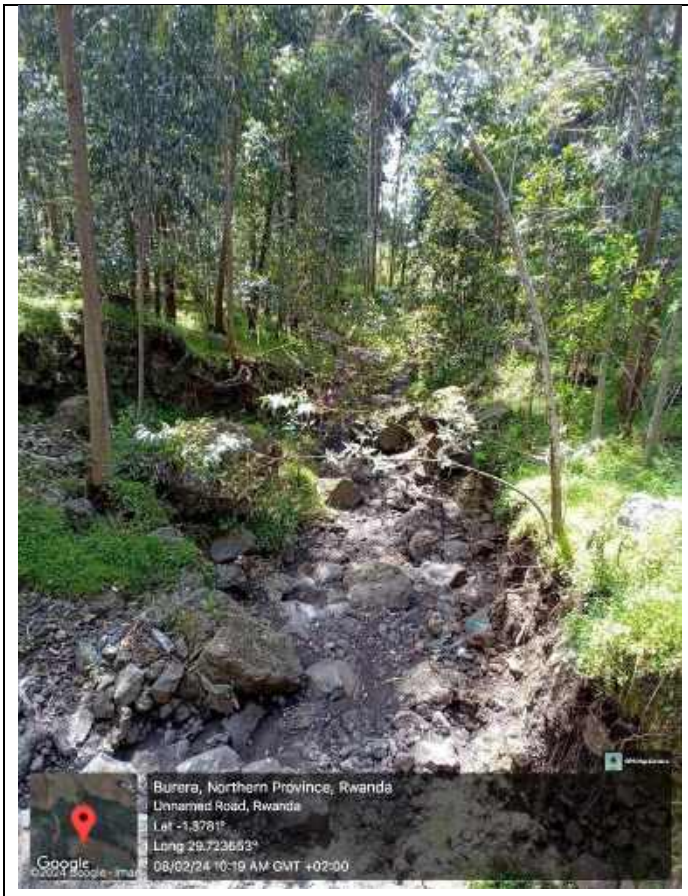
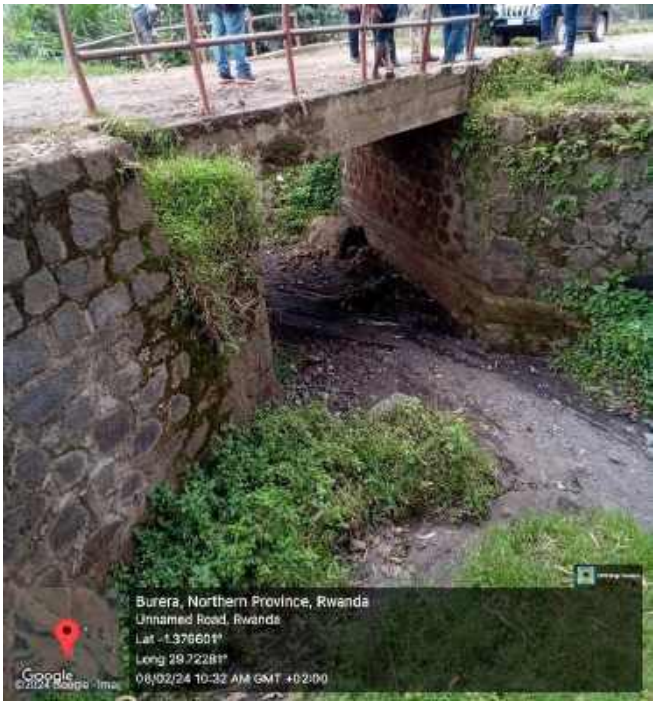
FLOOD ISSUES

Description: The upstream Kagere gully has the morphology of a mountain stream with very steep slope, rocky river bed and deep river banks. The deepen of the river cross section has caused over the time due to erosion phenomena caused by high velocity and kinetic energy of the river flow. In this point there is a bridge with which is approx. 4 m hight and 3 m width that, according to local people, has never been overtopped.

Criticalities: none.

Possible solutions: on the right bank of the stream there is a suitable spot for a potential storage area that might alleviate the water load on the downstream outlet (see Cya 1).

PHOTOS

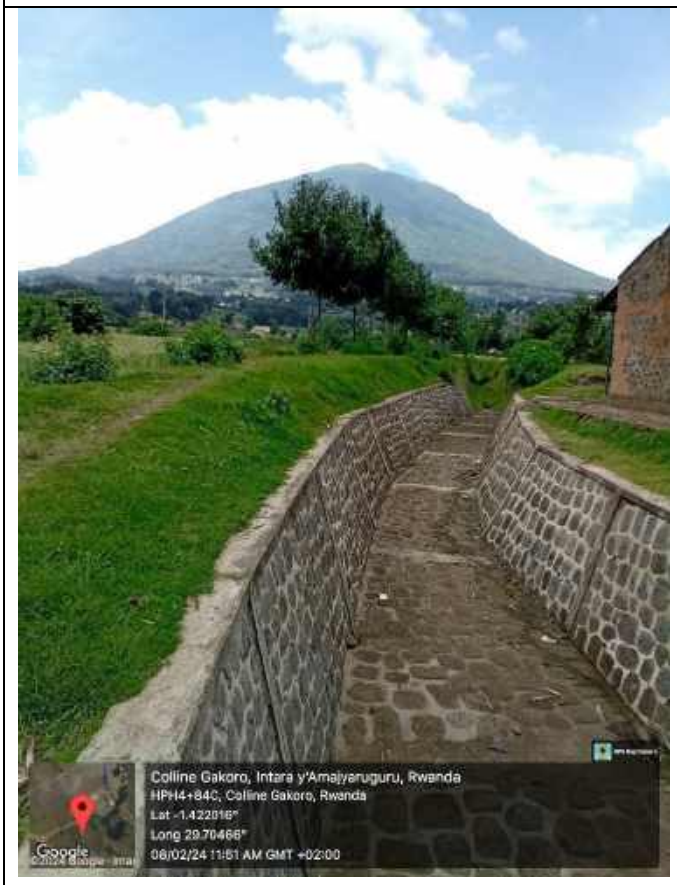
3.Hotspot name ID: Kin 1

District: Burera
Sector: Kinoni
River name: Nyarubande gully
Name of catchment: Minoga
Latitude: -1.424276
Longitude: 29.730097
FLOOD ISSUES
Description: The gully coming upstream from the Volcano drain into a drainage rectangular channel (upper photos) approx. 1.5 m width and 1.3 m hight that collect the water storm into a culvert DN 800 that flows under the bridge and discharge water into a cave (bottom photos). There is a small detention basin upstream but the capacity is not sufficient.
Criticalities: When floods occur the water flows into the cave (outlet) until it is fully charged, at this point it creates floods in the nearby community a of houses and farmlands.

Possible solutions: due his proximity to the lake it might be feasible to propose a drainage channel to discharge water into the Burera lake.

PHOTOS

4.Hotspot name ID: Mua 1
District: Burera
Sector: Rugarama
River name: Muhabura gully
Name of catchment: Mwora
Latitude: -1.426849
Longitude: 29.712792
FLOOD ISSUES
Description: This point was surveyed to assess the previous interventions that was made for this hotspot. We are in the proximity of the School that in the past was at high risk of flooding. Upstream to the bridge that get access to the school, the river capacity was increased with a re-shape of the section a protection of the river bottom and banks (upper photos) while there were built two detention ponds (lower photos), one upstream and one downstream to the schools. Inside these detention ponds there are caves that increase the infiltration of the water and potential storage volume of the ponds.
Criticalities: none
Possible solutions: none
PHOTOS




Colline Gakoro, Intara y'Amajyaruguru, Rwanda
HPH4+M4W, Colline Gakoro, Rwanda
Lat -1.420386°
Long 29.703664°
08/02/24 11:58 AM GMT +02:00
Google


Burera, Northern Province, Rwanda
Unnamed Road, Rwanda
Lat -1.426849°
Long 29.712792°
08/02/24 12:29 PM GMT +02:00

5. Hotspot name ID: Ruk_HOT
District: Burera
Sector: Gahunga
River name: Rukangabana gully
Name of catchment: Mwora
Latitude: -1.456451
Longitude: 29.695362
FLOOD ISSUES
Description: this is a vegetated gully with some tributaries upstream (Ex: Nyaburimbi gully), with a rectangular section approx. 1.5 m height and 1.2 m width, the vegetated section presents rocky bed, the water way was clearly created from erosion phenomena. The gully pass trough some cropland and few houses on the left bank.
Criticalities: The capacity of the section of this gully is not sufficient. According to local people it causes floods every year in the nearby area. Moreover, it was surveyed an evidence of water level from a nearby house during a recent flood event (right photo).
Possible solutions: to be identified
PHOTOS

6.Hotspot name ID: Gah 1
District: Burera
Sector: Gahunga
River name: Nyabyungo gully
Name of catchment: Mwora
Latitude: -1.440456
Longitude: 29.673747
FLOOD ISSUES
Description: This gully is characterized by rocky bed that prevent water from digging and deepen the river bed, as a congruence the water overtop the bank and flows in the nearby areas frequently. There is a wooden bridge downstream with approx. section of 1.5m hight and 3 m width.
Criticalities: When a heavy rainfall occurs this area get flooded from both gully's banks due to his poor conveyance capacity. Moreover, the downstream bridge has not enough capacity to let the water flows and there is a clear sign of sediment transport problem due to his rocky bed.

Possible solutions: to be identified
PHOTOS

7.Hotspot name ID: NYABU_HOT
District: Burera
Sector: Gahunga
River name: Nyabutoshwa upstream
Name of catchment: Mwora
Latitude: -1.436819
Longitude: 29.66734
FLOOD ISSUES

Description: The bridge was recently upgraded and a bank protection intervention and lined river bed was realized. The Nyabutoshwa collects water from the Nyabyungo and the Rukangabana and convey the water downstream into the springs and lake. The capacity of the bridge is enough. Additionally, it has some tributaries upstream (Ex: Kagote and Rwampongo) that flood the community in rain season
Criticalities: criticalities are downstream to the confluence
Possible solutions: none
PHOTOS

8.Hotspot name ID: Cyu 1
District: Musanze
Sector: Gacaca
River name: Nyabutoshwa downstream
Name of catchment: Mwora
Latitude: -1.468764
Longitude: 29.693698
FLOOD ISSUES

Description: this is the point of Nyabutoshwa (right photo) confluence with the Nyabyungo and Rukangabana, all the water drain into lined rectangular channel with 1.8 m hight and 1.5 m width that convey water into a natural detention basin and then into a circular culvert approx. DN 1500. The water flows downstream with lined river bed towards the spring and the lake.
Criticalities: the drainage channel that collect water from the confluence to the culvert has not sufficient capacity and it gets the main road flooded.
Possible solutions: Enlargement of the channel section capacity or a detention basin upstream
PHOTOS

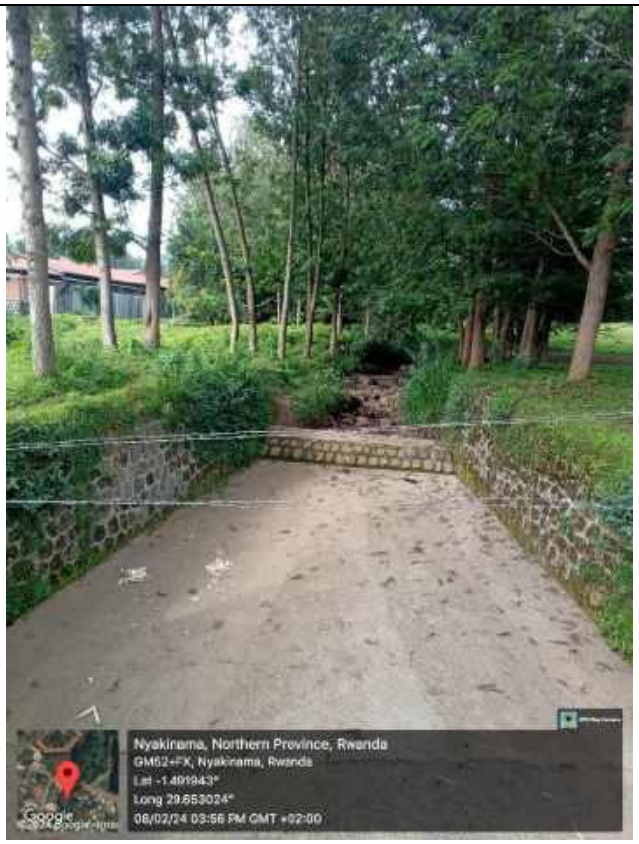
9.Hotspot name ID: Spr 1
District: Burera
Sector:
River name: Byunga (Springs at Ruhondo Lake)
Name of catchment: Mwora
Latitude: -1.478855
Longitude: 29.700895

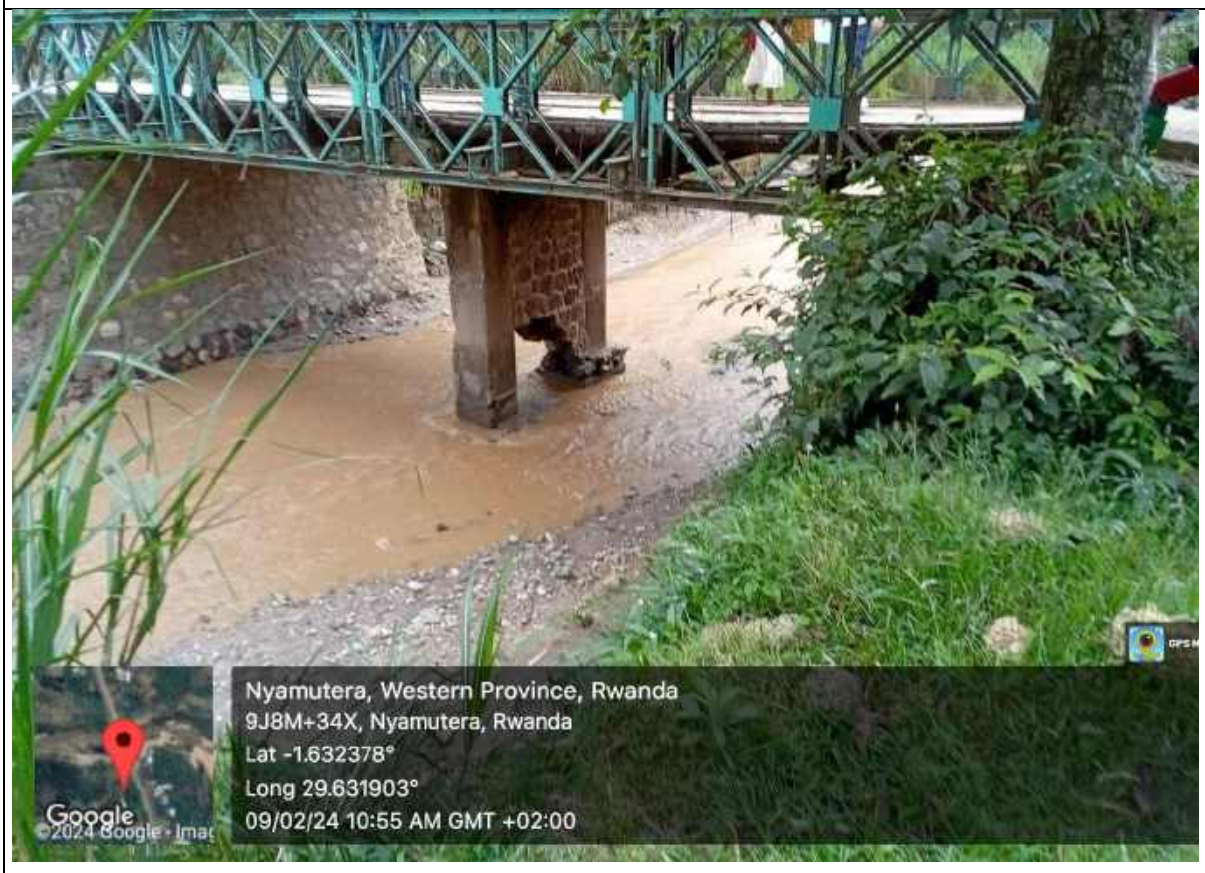
FLOOD ISSUES
Description: This spot is a spring downstream of the Nyabutoshwa gully, here water comes in part from the gully but for the most part from the groundwater. The water flows continuously and according to local people this might be one of the outlet points where the water infiltrated on the ground from the Volcanoes emerge on the surface creating these springs. The outlet point of the springs are a series of caves in the floodplain. There are some ongoing construction work to increase the section capacity of the gully with higher levees.
Criticalities: during heavy rainfall the combination of surface flow and groundwater cause floodplains in the nearby community.
Possible solutions: Preservation of the environment
PHOTOS


Musanze District

10.Hotspot name ID: Gac 1
District: Musanze

Sector: Cyuve
River name: Cyuve – bridge 1
Name of catchment: Mwora
Latitude: -1.477304
Longitude: 29.700033
FLOOD ISSUES
Description: this bridge on Cyuve gully is a critical point, because it passes down the main road of Musanze road and on the right river bank there is the Sonrise School and a business centre. The section of the culvert down the bridge is rectangular approx.. 4 m width and 3 m hight. The river bed is lined upon the bridge section for 50 m upstream and 50 m downstream.
Criticalities: The capacity of the culvert's section is not enough to convey water downstream, as a consequence the bridge is overtopped from both banks and get flooded all the surrounding area and road, including the school.
Possible solutions: Enlarge the bridge cross section or identify a storage area upstream.
PHOTOS



15.Hotspot name ID: Nyam_HOT
District: Nyabihu
Sector: Rugera
River name Nyamutera stream – bridge
Name of catchment: Nyamutera
Latitude: -1.632378
Longitude: 29.631902
FLOOD ISSUES
Description This is a tributary of the Mukungwa and it is a very critical point. The bridge has an intermediate pile on the river bed and the cross section of the bridge is approx. 4 m the first span and 5 m the second span, 4 m height. There is also a water level metering station on the river
Criticalities the intermediate pile of the bridge is highly degraded, the bridge cross section has insufficient capacity for heavy rainfall events, water overflow on the left bank affecting the community around. Actually, there is a limitation of 20 ton of vehicle load on the bridge.
Possible solutions: to be defined.
PHOTOS


Annex 4. Beneficiaries

Sectors	Catchment level-3	Total population of the mentioned sectors (NISR, 2022)	% population falling in the area (Indirect Beneficiaries type 1)	% population falling in the investment area	Number of Rwandan HH benefiting from Ntaruka hydropower and Mukungwa water supply (Beneficiaries type 2)
Cyanika (Burera District) Kagogo (Burera District) Rugarama (Burera District)	Burera-Gisovu	94650	26%	13% (at least 50% of women)	**736,489**
Cyanika (Burera District) Rugarama (Burera District) Gahunga (Burera District)	Minoga	55,110	24%	12%	
Kintobo (Nyabihu District) Rugera (Nyabihu District) Rurembo (Nyabihu District) Nkotsi (Musanze District)	Nyamutera	84,001	28%	14% (at least 50% of women)	
Shyira (Nyabihu District) Jomba (Nyabihu District) Kabaya (Ngororero District) Hindiro (Ngororero District) Matyazo (Ngororero District)	Rubagabaga	133,720	32%	16% (at least 50% of women)	
Cyanika (Burera District) Kagogo (Burera District)	Kagere	67,599	60%	30% (at least 50% of women)	
Kinoni (Burera District) Rugarama (Burera District) Cyuve (Musanze District) Gacaca (Musanze District) Gahunga (Burera District) Nyange (Musanze District)	Mwora	198,299	43%	21.5% (at least 50% of women)	

Women's Involvement in the Project

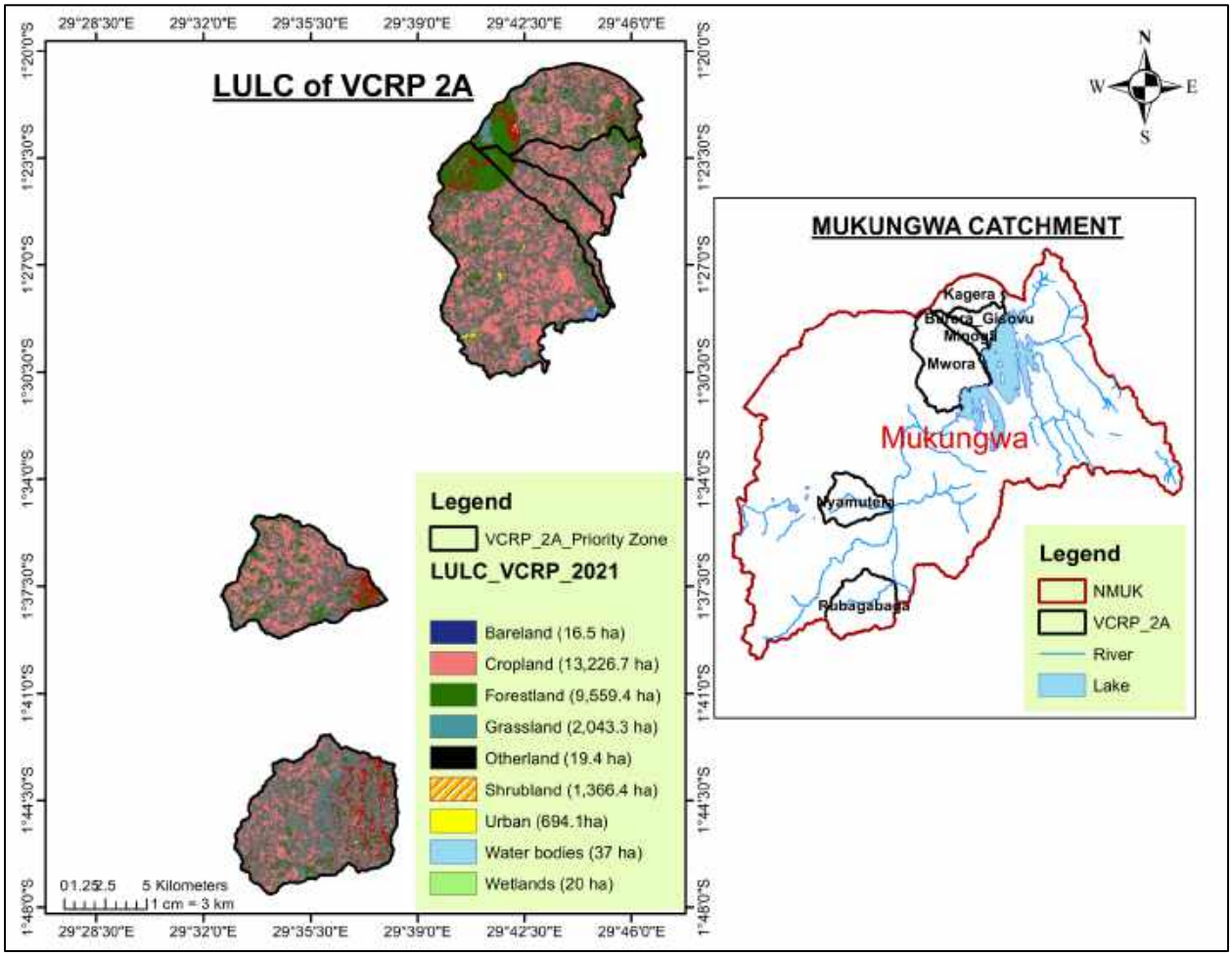
In RWB's experience, women participate in catchment restoration activities (terracing, nursery establishment, tree planting, etc.) more than men. Therefore, based on demographics of the 6 sub-catchments, we expect that at least 50% of the participants in the activities will be women.

The Gender Action Plan developed for the VCRP (included as an attachment to this proposal) noted that women usually do not take leadership roles in the structures that enable the community approach being championed in this proposal. This is why actions have been taken to ensure that women will make up at least 50% of Community Coordination Committees, 50% of the Grievance Redress Committees, and 50% of the site managers during the implementation. This will be achieved through community mobilization sessions and training sessions that will be conducted by a Technical Assistance hired by the Ministry of Environment as part of the greater VCRP. The areas covered by the technical assistance will include the 6 sub-catchments in this proposal. More details are available in the VCRP GAP.

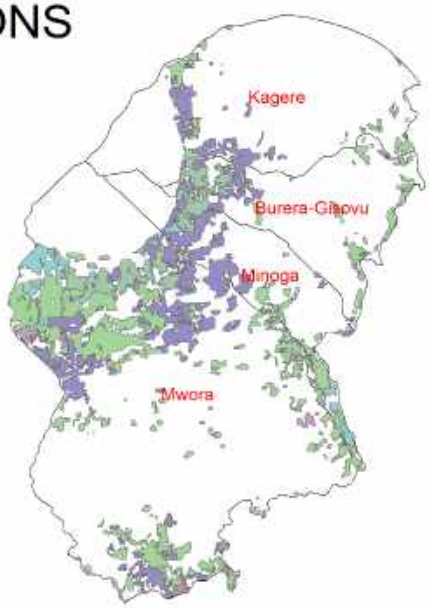
Annex 5. Baseline (existing interventions in accordance to CROM DSS data)

Sub-Catchment	Bench terraces (Ha)	Progressive terraces (Ha)	Forest (Ha)	Grand Total
Burera-Gisovu		10.66	155.82	166.48
Kagere			104.65	104.65
Minoga			107.71	107.71
Mwora	1.02		228.02	229.04
Nyamutera			466.87	466.87
Rubagabaga			970.33	970.33
Grand Total	**1.02**	**10.66**	**2033.42**	**2045.10**

Annex 6: Land Cover and Proposed Interventions per Catchment



PROPOSED INTERVENTIONS



- Afforestation (142 Ha)
- Agroforestry (692 Ha)
- Bamboo to close gullies (368 Ha)
- Bench terraces (910 Ha)
- Contour bank terraces (5527 Ha)
- Hedgerows (1549 Ha)
- Reforestation (142 Ha)
- River side bamboo (118 Ha)
- VCRP_PRIORITY AREA_2A

0 5 10 Km

Annex 7: One Cow per Poor Family in Rwanda / Girinka Programme in Rwanda

The Girinka programme in Rwanda is a culturally-rooted social safety net initiative that provides poor families with a dairy cow, offering long-term benefits. Originally funded solely by the Rwandan government, the programme has since gained support from various development partners. Girinka's key objectives are to alleviate poverty through dairy farming, enhance livelihoods by increasing milk consumption and income, boost agricultural productivity with manure as fertilizer, and improve soil quality and prevent erosion through grass and tree planting.

Since its launch in 2006 until June 2022, the Girinka programme has distributed 427,576 cows to an equal number of impoverished Rwandan families. The programme operates in two phases:

- A chosen community member receives a pregnant dairy cow, benefiting from its milk and manure.
- The recipient must then pass the first-born female calf to another deserving community member, a practice known as the 'pass on' principle or Kuziturirana/Kwitura.

Institutional Structure of Girinka

Girinka employs a decentralized approach, with each of Rwanda's 30 districts overseeing the programme's implementation. The Rwanda Agricultural and Livestock Development Board (RAB), an agency under the Ministry of Agriculture, coordinates the programme at the national level. Each district has a RAB focal person who collaborates with local veterinary officers, selection officials, local administration, and the Girinka coordinator. Their duties include distributing cows, training beneficiaries, and educating farmers about milk collection centers and processing facilities. Local government units, including umurenge (sectors), akagali (cells), and umudugudu (villages), assist with monitoring and evaluation.

Before and after receiving a cow, beneficiaries receive support from RAB's district and sector veterinary officers, including training in primary animal care, veterinary services, artificial insemination, fodder seeds, and vaccination against diseases. This support aims to equip families with the skills needed for effective animal husbandry.

Selection Criteria for Beneficiaries

Beneficiaries are selected by village members based on several criteria:

- The applicant must not already own a cow.
- The applicant must be a reputable community member capable of basic animal management.
- The applicant must be considered poor with minimal or no other income sources.
- The applicant must own 0.25-0.75 hectares of land, or join others to create a communal cowshed (Igikumba) if owning less.
- The applicant must build a cowshed before receiving a cow.
- The applicant must be willing to undergo training in animal husbandry practices.

Funding of the programme

Funding for Girinka comes from the Rwandan government, NGOs, and private donors. For instance, the African Development Fund contributed 8,200 local breed cattle and 3,000 crossbred cattle through the

Dairy Cattle Development Support Project (PADEBL). Once funds are allocated in the national budget or received as donations, RAB oversees the purchasing of heifers. Efforts are made to decentralize funding and allocate most of it to local government units. Private donations are managed through RAB according to Ministerial Decentralisation Guidelines, with donors setting their own criteria for receiving heifers, though RAB ensures the cows are healthy before distribution.

Selection of Cows

Cows are acquired through an open tender process managed by RAB at the national level and by local governments at the district level. Before purchase or acceptance of a donation, RAB conducts veterinary examinations to ensure the cows:

- Are healthy and free from contagious bovine pleuropneumonia and brucellosis
- Are physically sound
- Are between 18-24 months old and weigh at least 250 kilograms
- Are pregnant or suitable for insemination
- Have at least 50% genetic contribution from non-local breeds such as Friesian or Jersey
- Priority is given to cows from Girinka beneficiaries whose original cows have calved multiple times and thus followed the 'pass on' principle.

Preparation and Training of Beneficiaries

Before receiving a heifer, beneficiaries undergo a comprehensive training programme provided by RAB. This training covers essential areas of the programme and includes workshops on the five pillars of involvement: breeding, animal feeds, housing, health, and management and record-keeping. Beneficiaries also receive supplies such as drugs, spray pumps, and mineral blocks. Training is ongoing and continues until the cow calves. The training programme involves selection officers, veterinary officers, and local focal persons.

Monitoring and Evaluation of the programme

RAB is responsible for monitoring and evaluating the programme in collaboration with local government institutions like Akarere (District), Umurenge (sector), Akagali (cell), and Umudugudu (village).

The sustainability of the Girinka Programme in Rwanda is supported by several key factors:

Community Engagement and Ownership: The programme's reliance on community-selected beneficiaries ensures that those receiving cows are well-integrated into the local social fabric. The 'pass on' principle fosters a sense of responsibility and commitment, as beneficiaries are required to pass on the first-born female calf to another deserving individual. This model not only extends the programme's reach but also strengthens community bonds and ownership.

Decentralized Implementation: Girinka's decentralized approach, with each of Rwanda's 30 districts managing its own operations, allows for more localized and effective implementation. This structure ensures that the programme is adapted to local needs and conditions, increasing its relevance and effectiveness. District-level management also means that resources and responsibilities are spread more evenly, which can enhance the programme's resilience.

Support and Training: Continuous support and training provided by RAB's district and sector veterinary officers equip beneficiaries with essential animal husbandry skills. This ongoing education helps ensure that beneficiaries can effectively manage their cows, leading to better health outcomes for the animals and more successful dairy farming. The provision of veterinary services, artificial insemination, and other resources further supports the long-term success of the programme.

Diversified Funding Sources: The Girinka Programme benefits from a mix of funding sources, including government support, contributions from NGOs, and private donations. This diversified funding base helps reduce dependency on any single source and enhances the programme's financial stability. The involvement of development partners and private donors also brings additional expertise and resources.

Veterinary and Health Support: The focus on ensuring that cows are healthy and well-cared for through rigorous veterinary checks and ongoing health support is crucial for sustainability. Healthy cows produce more milk and are less likely to suffer from diseases, which supports the long-term viability of the dairy farming enterprise.

Environmental Benefits: The use of manure as fertilizer and the planting of grasses and trees improve soil quality and reduce erosion. These environmentally friendly practices contribute to the overall sustainability of the programme by promoting better land management and agricultural productivity.

Local Production and Economic Impact: By enhancing milk production and consumption, Girinka contributes to local economic development. Increased milk production supports local markets and milk collection centers, creating economic opportunities and contributing to food security.