



CASE OFFERING

Nature knows no boundaries:
Improving cross-border
management of biodiversity to
support people and nature



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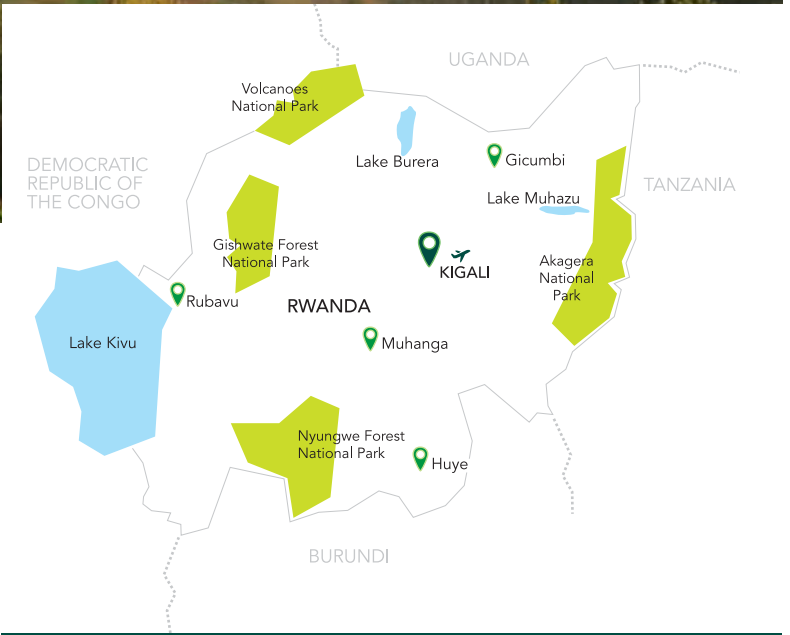
Cover image: Mountain gorilla family. Photo: Adobestock

Above: A small chameleon rests on the hand of a jungle tracker, in the foothills of the Volcanoes National Park. Photo: Adobestock/Dave

Rwanda's national parks, lakes and other forms of biodiversity contribute significantly to the country's economic growth, particularly through the tourism, energy and agricultural sectors. Some of the country's key nature-based resources are shared with neighbouring countries and therefore require trans-frontier cooperation for natural conservation and socio-economic growth. Ecosystems and their biodiversity are also under mounting pressure. Closer collaboration among affected countries is needed to develop and manage Trans-frontier Conservation Areas (TFCAs) and enhance capabilities to monitor, plan for and manage climate shifts and disasters.



Rwanda's key nature-based resources are shared with neighbouring countries and therefore require trans-frontier cooperation for natural conservation and socio-economic growth.



Southwestern Uganda, at the Bwindi Impenetrable Forest National Park, bordered by the Democratic Republic of the Congo and Rwanda. Photo: Travelstock
Map shows the geographical location of the largest national parks in Rwanda as well as Lake Kivu.

Rwanda's biodiversity context

Rwanda's natural biodiversity is a main pillar for the tourism, energy and agriculture sectors. Key nature-based resources within these sectors include the Virunga National Park, the Akagera and Nyungwe National Parks and Lake Kivu.

Tourism contributes significantly to Rwanda's GDP (15.1 percent of GDP in 2019), primarily through four national parks (Virunga, Nyungwe, Akagera, and Gishwati-Mukura), multiple lakes and rivers, and the appeal of rare species¹. The soils and waterways around these parks and lakes also contribute significantly to the agricultural sector, which "accounts for nearly one-third of national GDP and employs roughly 70 percent of the labour force"².

Lake Kivu is Rwanda's largest lake and the sixth largest in Africa. Its high concentrations of methane gas³ provide an exciting new source of energy for production of electricity, but its extraction comes with risks as the lake also contains even larger stores of carbon dioxide. If not handled carefully, methane extraction can cause the CO₂ to bubble up and kill all breathing life forms in the water and on surrounding land. There are currently four projects geared towards mining methane in Lake Kivu, including a public-private-partnership that aims to produce 56MW in 2022⁴.

Several of Rwanda's biodiverse ecosystems are shared with neighbouring countries, making trans-frontier collaboration central to their management and sustainability. For example, Sabyinyo Mountain in Virunga National Park is shared between Rwanda, Uganda and Democratic Republic of the Congo (DRC)⁵, and several other mountains in the park are shared by two countries. Lake Kivu, with its methane and CO₂ deposits, are equally shared between Rwanda and DRC. Akagera National Park, with an area of 2,500 km², borders Tanzania, and actions taken there (e.g., water and grassland use) can have profound impacts on the park's biodiversity. This also applies to Nyungwe National Park, situated at the border of Rwanda and Burundi. In addition to national parks, the Mugesera complex wetland at the border with Burundi, and the Akagera complex wetland at the border of Tanzania⁶ present similar scenarios.

Rwanda has ongoing trans-frontier initiatives with neighbouring countries to conserve several of these shared natural resources. For example, the *Autorité du Bassin du*

Lac Kivu et de la Rivière Rusizi (ABAKIR), is a transitional governance body for the Lake Kivu and the Rusizi River basin, which is shared between Burundi, DRC and Rwanda. ABAKIR was established by the three states in November 2014. Its mission is to create a permanent structure for ABAKIR, and initiate studies needed to plan ABAKIR activities.

Through the East African Community, Rwanda is a party to the Lake Victoria Basin Commission. Rwanda is also a member of the Nile Basin Initiative, an intergovernmental partnership of 10 countries (Burundi, DRC, Egypt, Ethiopia, Kenya, South Sudan, Sudan, Tanzania and Uganda) that aims to achieve sustainable socio-economic development through the equitable utilization of Nile Basin water resources.

An important success in cross-border management has come from the Treaty of the Greater Virunga Trans-boundary Collaboration (GVTC), signed by DRC, Uganda and Rwanda. Established for management of the mountain gorilla population living in the three national parks (Volcanoes National Park in Rwanda, Virunga National Park in DRC, and Mgahinga National Park in Uganda), the GVTC has helped to underpin sound conservation and supported growth in low-volume, high-value tourism in Rwanda.

Development partners have also played a big role in resource management and conservation across borders. NGOs such as the Dian Fossey Foundation, International Gorillas Conservation Program and others work for the conservation of mountain gorillas in Africa. Some of these organisations collaborate with the Rwanda Development Board (RDB) and its counterparts in Uganda and DRC, (the Uganda Wildlife Authority and *L'Institut Congolaise pour la Conservation de la Nature*, respectively) and bring them together for strategic management of shared resources⁷.

However, key challenges persist that threaten the conservation of these natural resources. These include poaching, boundary encroachment, uncontrolled fires, tree cutting and vegetation clearing, mining, human-wildlife conflict, poisoning, illegal fishing, agricultural intensification, climate change, illegal grazing and others. Some of these challenges point to limitations in disaster monitoring and regulation of resource use. Others point to the need for greater economic opportunities for local people.

1 International Trade Administration, *Rwanda - Country Commercial Guide*, accessed July 2021

2 REMA, *Economic Assessment of Akagera Wetland Complex*, accessed July 2021

3 Rwanda Energy Group, *Methane Gas in Rwanda*, accessed July 2021

4 MININFRA, *Another 15 Megawatts to be Extracted From Lake Kivu Methane Gas By June 2021*, accessed July 2021

5 UNESCO, *Virunga National Park*, accessed July 2021

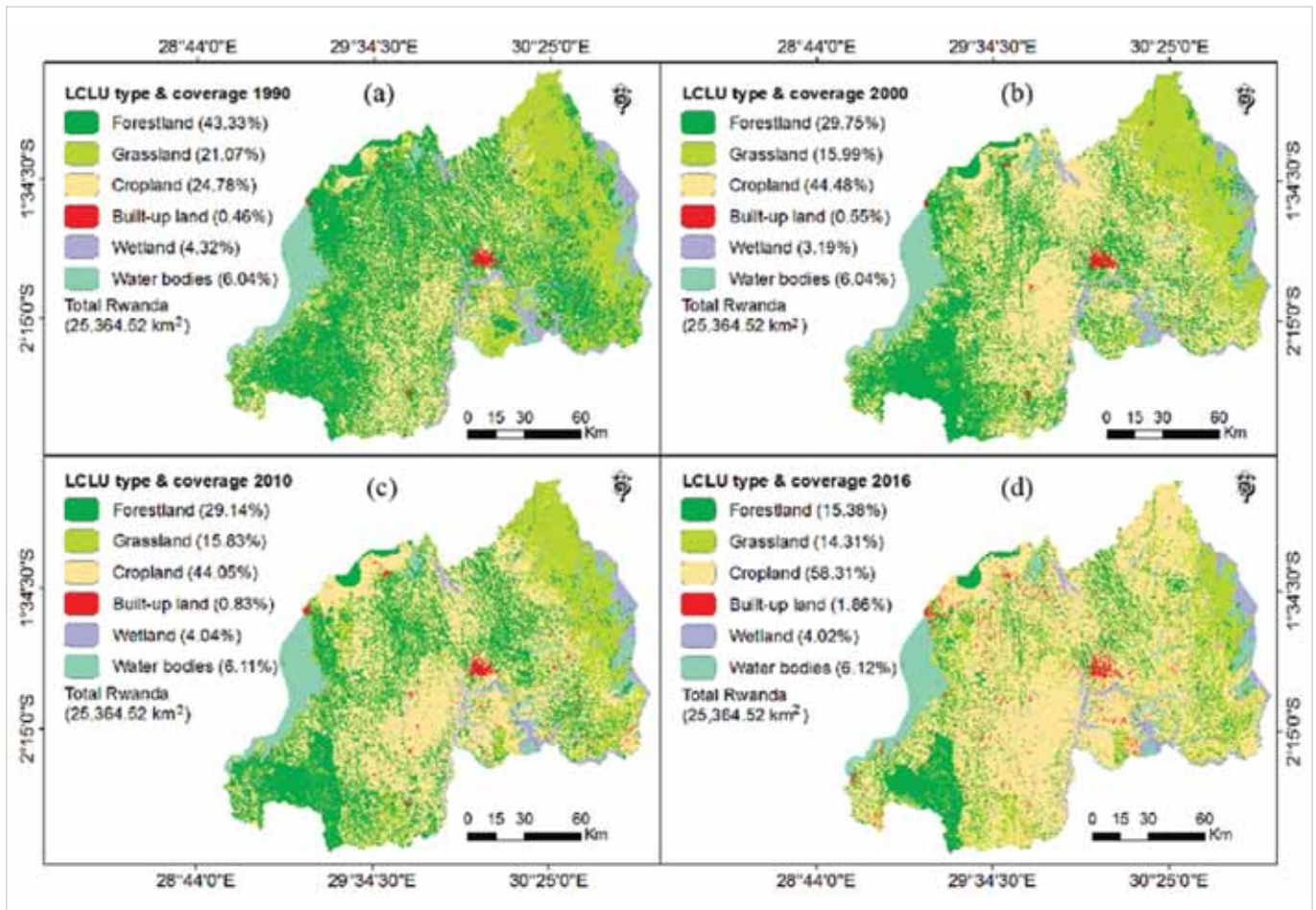
6 REMA, *NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN*, accessed July 2021

7 REMA, *National Biodiversity Strategy and Action Plan*, accessed July 2021

The interface between population growth, intensified land use and conservation of biodiversity presents another big challenge. The figure below shows the trend in land use between 1990 and 2016. In this period, forestland was reduced from 43.3

percent of Rwanda's total land mass to only 15.38 percent while cropland increased from 24.7 percent in 1990 to 58.31 percent in 2016. With current population growth of 2.6 percent⁸, pressure on forestland is mounting.

Figure 2: Land cover and land use maps of Rwanda for the period a) 1990, b) 2000, c) 2010 and d) 2020



Source: <https://www.researchgate.net/profile/Fidele-Karamage/publication...>

Looking ahead: Improving cross-border resource management

Given the vital social and economic importance of the region's nature-based resources, improvement of their cross-border management is crucial. Climate change and other human decisions in one country often impact others. Furthermore, trans-frontier collaboration has the potential to facilitate and promote regional peace, co-operation and socio-economic development.

Reflecting on the challenges regarding trans-frontier collaboration mechanisms, capacity to assess and predict environmental impacts, and to design data-driven interventions in key

transboundary areas, UNDP Rwanda will spearhead four key actions:

1. Establish TFCAs for Nyungwe and Akagera National Parks.
2. Enhance management of the Lake Kivu and the Rusizi River Basin, leading to a TFCA.
3. Improve livelihoods in Volcanoes National Park, and the larger Virunga Conservation Area.
4. Develop and implement tools for monitoring and evaluating conservation efforts and disaster preparedness.

Establish and operationalise Trans-Frontier Conservation Areas (TFCAs) for Nyungwe and Akagera National Parks

The Rwanda Environment Management Authority (REMA) National Biodiversity Strategy and Action Plan notes that cross-boundary collaborative mechanisms remain nascent for the Nyungwe National Park in Rwanda, which is contiguous with Kibira National Park in Burundi, and for Akagera National Park, shared between Rwanda and Tanzania⁹.

As a result, these two regions face sustainability challenges, primarily around issues of encroachment and poaching. Their continued degradation would have significant consequences. For example, isolation of chimpanzee breeds in Nyungwe National Park has raised the risk of inbreeding and genetic erosion - putting their long-term viability at risk¹⁰.

Building on the collaboration already seen in the GVTC, UNDP will lead in the establishment of tighter collaboration mechanisms for the Nyungwe/Kibiria National Parks and Akagera National Park.

Create a Working Group to lead collaboration

The first critical step to success will be to bring together a range of public sector organisations to form a Working Group and Secretariate. The group will ensure its members: a) understand the full value of the opportunity and b) capture the opportunity through planning and procurement that maximizes the overall benefit for the countries involved (vs. taking a narrower approach that looks at only wildlife management or energy production separately).

Table 1 includes several of the organisations that will need to work together. In addition to those highlighted, learning institutions, Non-Governmental Organisations (NGOs), Community Based Organisations (CBOs), local communities and the private sector will be important to engage.

Goodwill and interest across these organisations appear strong. However, to ensure sufficient momentum, UNDP will also seek funding to establish a small dedicated Secretariate to keep this Working Group on track and moving forward.

Establish TFCAs for Akagera and Nyungwe

The institutionalisation of trans-frontier conservation areas requires sensitisation of the benefits of such a system, agreement on physical boundaries, agreement on legal procedures and policy structures for land use and management, and development of financing mechanisms. In addition, to prevent loss of biodiversity from causes such as boundary encroachment, it will be important to have community buy-in.

Table 1: Key stakeholders for working group

Key working group stakeholders	
POLICY	<ul style="list-style-type: none"> Government of Burundi Government of Tanzania Government of Democratic Republic of Congo Ministry of Infrastructure Ministry of Environment Ministry of Agriculture and Animal Resources Ministry of Foreign Affairs and International Cooperation
REGULATION	<ul style="list-style-type: none"> Rwanda Environment Management Authority Rwanda Utilities Regulatory Authority
IMPLEMENTATION	<ul style="list-style-type: none"> Rwanda Development Board The Centre of Biodiversity Management Rwanda Water Board Rwanda Energy Group National Fund for Environment in Rwanda

Note: this table is non-exhaustive

Key activities will include:

- Establish and manage the Working Group and its Secretariat
- Perform policy and regulatory reviews, research, and governmental assistance
- Develop governance and operational systems and processes for the management of the TFCAs
- Pilot and provide technical assistance with operationalising these bodies

Key outcomes: TFCAs established for Akagera and Nyungwe National Parks

⁹ REMA, *National Biodiversity Strategy And Action Plan*, accessed July 2021

¹⁰ REMA



2

Enhance management of Lake Kivu and the Rusizi River Basin

Water supplies from Lake Kivu and the Rusizi River Basin (Burundi, Democratic Republic of the Congo and Rwanda) are under significant and rising pressure because of unsustainable use and inadequate management of resources¹¹. The lake, river and surrounding basin face pressures ranging from agriculture to population growth. Challenges include soil erosion and water pollution from mining activity and toxic metals residues; forest clearing; and the rapid expansion of towns coupled with a lack of sanitation, waste collection and sewage treatment. All this is exacerbated by the extraction of methane gases with unknown impacts of degassed water on the biozone. In addition to these human-driven challenges, there are high natural risks - volcanic eruptions, limnic eruption, high seismicity, flooding and landslides. The basin is shared between three countries with different modes of governance, which complicates its management.

As noted, ABAKIR was created to prepare and implement a process for establishing a permanent collaborative management structure for Lake Kivu and the Rusizi River Basin. At present, ABAKIR continues to receive advisory and financial support primarily from the European Union (EU) and the German Agency for International Cooperation (GIZ), which is not sustainable. There is room to strengthen ABAKIR to be less dependent on external resources to ensure long-term operational organisational sustainability.

The Working Group and Secretariat described above (for Akagera and Nyungwe National Parks) will also provide similar oversight for Lake Kivu and the Rusizi River Basin. They will:

1. Drive the establishment of a tangible TFCA for the region
2. Develop governance and operational systems and processes for collaborative resource management
3. Provide technical assistance and piloting the operationalisation of these bodies

Key outcomes: TFCA established for the Lake Kivu Basin

*Rusizi River Basin, Rwanda.
Photo: Travelstock*

3

Improve livelihoods in Volcanoes National Park and the Virunga Conservation Area

While Rwanda recognises the importance of tourism revenues from the national parks, it is equally aware of the need to ensure that communities around the parks benefit from protection of their biodiversity. This is critical to prevent the illegal exploitation of protected resources to improve livelihoods. Although the Rwanda Development Board has put in place several measures to improve community livelihoods, they have been inadequate.

Therefore, UNDP Rwanda will promote the creation of decent and green jobs for communities surrounding the GVTC to improve their livelihoods and their sustainable use of biodiversity. Equally important, this work will strengthen relationships between the Virunga National Park and surrounding communities, whose growing populations have been exerting pressure on the habitat of mountain gorillas, flora and fauna. Improving livelihoods will ease the pressure to encroach into park areas and will conserve its ecosystems.

UNDP Rwanda will cooperate with UNDP offices in Uganda and Democratic Republic of the Congo to promote community conservation and livelihood improvement programmes for communities surrounding the GVTC. Focus areas will include creating energy projects that provide alternatives to community reliance tree cutting, charcoal and timber exploitation; establishing community centres where people can diversify their incomes by selling local products to tourists; and improving farmers' sustainable agriculture, knowledge sharing, and agricultural trade among the three countries¹².



*A community-based enterprise sells locally produced crafts to tourists.
Photo: Alice Kayibanda/UNDP Rwanda*

4

Enhancement of monitoring, analysis and planning tools

Good, timely data collection and analysis with the latest available tools will go a long way in enhancing short- and long- term disaster preparedness and implementing best practices for cross-border environmental conservation and livelihood strengthening.

Strong predictive and forward-looking data collection, analysis, monitoring, and forecasting are needed to meet biodiversity challenges and to mainstream concepts of resilience and risk mitigation across several sectors. New and improved data monitoring tools will also be useful in other highly biodiverse transboundary areas, including Lake Victoria Basin where 3 million people make their living from fishing and fish processing.

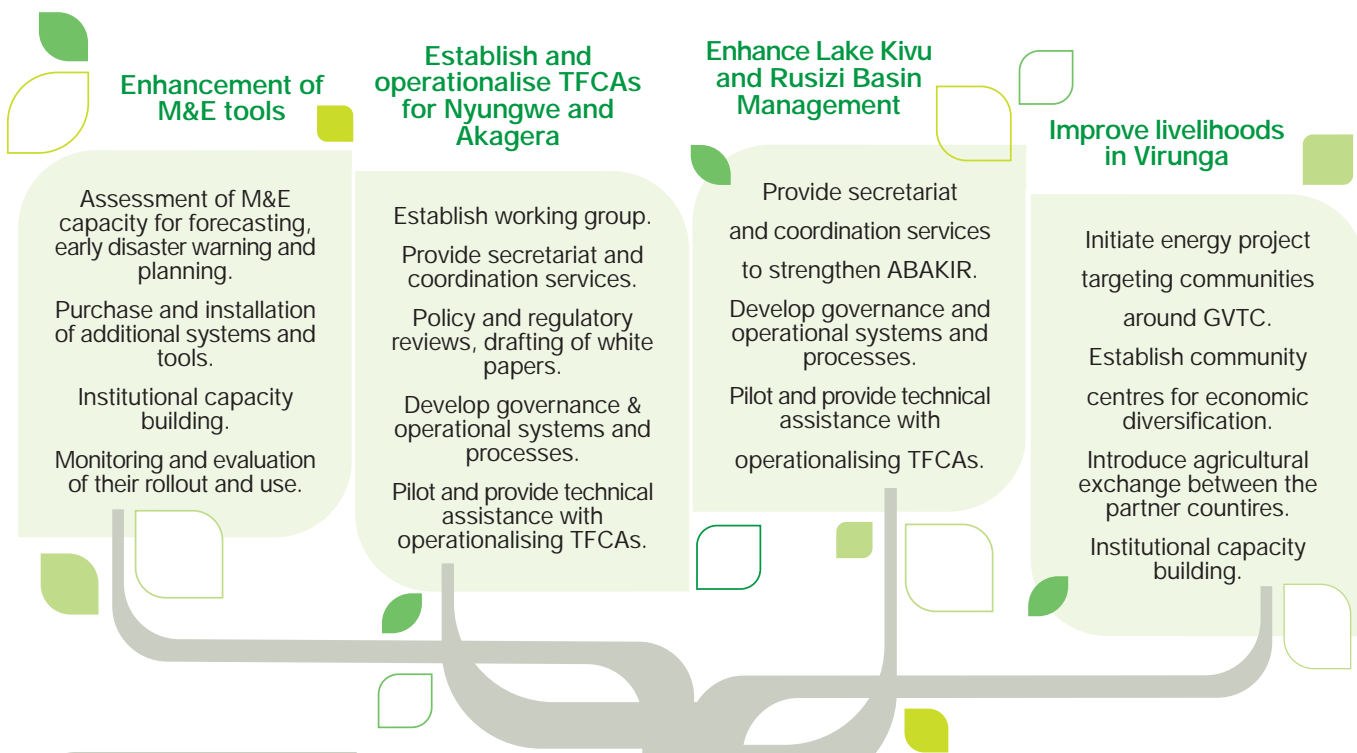
Key activities will include:

- Assessment of M&E capacity for data collection, forecasting and planning
- Purchase and installation of additional systems and tools
- Institutional capacity building, including training operators on forecasting, scenario development and analysis, and strategic intervention development
- Monitoring and evaluation of the roll-out and use of models, systems and tools

Key outcomes: Improved trans-frontier planning for, and responses to, natural and man-made events

Theory of Change

The outlined activities will enhance collaboration and efforts towards natural resource management. The figure below summarizes the theory of change:



Enhancement of M&E tools

- Assessment of M&E capacity for forecasting, early disaster warning and planning.
- Purchase and installation of additional systems and tools.
- Institutional capacity building.
- Monitoring and evaluation of their rollout and use.

Establish and operationalise TFCAs for Nyungwe and Akagera

- Establish working group.
- Provide secretariat and coordination services.
- Policy and regulatory reviews, drafting of white papers.
- Develop governance & operational systems and processes.
- Pilot and provide technical assistance with operationalising TFCAs.

Enhance Lake Kivu and Rusizi Basin Management

- Provide secretariat and coordination services to strengthen ABAKIR.
- Develop governance and operational systems and processes.
- Pilot and provide technical assistance with operationalising TFCAs.

Improve livelihoods in Virunga

- Initiate energy project targeting communities around GVTC.
- Establish community centres for economic diversification.
- Introduce agricultural exchange between the partner countries.
- Institutional capacity building.

Regular multi-sector engagement

- New trans-frontier cooperation agreement towards conservation of two transboundary parks

Regular multi-sector engagement

- Operationalised Lake Kivu and Rusizi Management TFCA

Community livelihoods programmes implemented

Best-in class forecasting, planning and response systems for trans-frontier natural resources

Integrated resource management across the key national parks and catchment areas.
 Improved trans-frontier planning for, and responses to, natural and man-made events.
 Improved livelihoods for communities surrounding national parks.
 Improved national park and ecosystem health.



*A young ranger surveys the park from the ranger viewing towers.
 Photo: Adobestock/
 Juan Carlos Munoz*


Budget


Implementation of this programme is forecast to cost US\$7,500,000.


INTERVENTION	ACTIVITIES	BUDGET (US\$)
Establish and operationalise TFCAs for Nyungwe and Akagera (US\$350,000)	Establish Working Group and provide Secretariat and coordination services	100,000
	Review policy and regulations, draft research papers and assist governments with establishing the two TFCAs	150,000
	Develop governance and operational systems and processes for the management of these areas and operationalise management bodies	100,000
Enhancement of Lake Kivu and Rusizi River Basin Management (\$6,500,000)	Develop governance and operational systems and processes for the management of this region and operationalise management bodies	1,000,000
	Enhance monitoring of Lake Kivu	1,000,000
	Sustainably manage watershed upstream of Lake Kivu and Rusizi River	4,500,000
Strengthened livelihoods of community in the neighbourhood of the Volcanoes National Park (\$4,000,000)	Create decent and green jobs for community surrounding national park to improve their livelihoods and their sustainable use of biodiversity	1,000,000
	Create and strengthen cooperation surrounding the national park of Virunga	1,500,000
	Extend the delimitation of existing the Volcanoes National Park	1,500,000
Enhancement of Monitoring and Planning Tools (\$650,000)	Assess M&E capacity for data collection, forecasting and planning	150,000
	Purchase and install of additional systems and tools	200,000
	Build institutional capacity, including through training on forecasting, scenario development, analysis and strategic intervention development	150,000
	Provide technical support for the effective management of trans-boundary resources	250,000
Communication for Sustainable Development (\$500,000)	Produce and share knowledge management products for the sustainable management of transboundary resources	250,000
Project Management and Oversight (\$500,000)	Provide quality assurance services for the project	100,000
	Monitor and evaluate project	70,000
	Provide advocacy and communicate results	80,000
TOTAL:		12,500,000



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