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PROTECTING NATURAL CAPITAL IN EAST AFRICA *The Cost of Inaction*

INTRODUCTION

First ever landscape-level assessment of natural capital in East Africa fills key evidence gap

East Africa's natural capital – its iconic wildlife, habitats, grasslands, and waterways – spans across national boundaries, industry sectors, and habitat types, delivering ecosystem services on which many stakeholder groups are mutually dependent. That's why valuing and protecting East Africa's natural capital must occur not only at the site or sectoral level, but rather at the landscape level. With landscape-level thinking, stakeholders can begin to view themselves as part of an interconnected system and understand how they both impact and benefit from shared natural assets. The United States Agency for International Development (USAID) and its East African Community (EAC) partners undertook this first of its kind study to determine the value of natural capital in four priority, transboundary landscapes (see map on page 3). The findings* will enable stakeholders to make more informed decisions about how to govern natural resources in the same manner as other forms of capital, such as produced goods and services.

* Findings are preliminary and currently undergoing peer review. Read full synthesis (USAID, 2021).

Data shows wildlife and habitat underpin foundation for economic and human well-being

These landscapes are internationally-renowned as tourist destinations, and so it has been largely assumed that their primary economic value lies in tourism. However, this assumption is misleading from a policymaking perspective, because **the tourism economy is only a fraction of the value that wildlife and habitat provide**. The very existence of the region's iconic species is also an important indication of the overall health of ecosystems that serve millions of people living in and around these landscapes. These ecosystems deliver benefits to economic and human well-being which, as this report shows, are valued in the billions of dollars – from ensuring water quality and food security to preventing drought, flooding, and other impacts of climate change.

This brief summarizes USAID's assessment of nine ecosystem services across four landscapes, as well as its synthesis of the data and analysis on East Africa's natural capital already generated by a wide range of experts and leaders in the region. The full report is the most comprehensive study to date of the complex links between wildlife, habitats, and the economy.

KEY TAKEAWAYS

TOURISM REPRESENTS ONLY 11% OF THESE LANDSCAPES' ECONOMIC VALUE.

The four landscapes prioritized for valuation (see map on next page) are globally recognized for their biodiversity and nature-based tourism. However, their value to the economic and human well-being of the East Africa region is far greater.

- While **revenue from tourism is $1.2 billion**, the regulating services these ecosystems provide – including water flow regulation, water quality amelioration, and preventing soil erosion – is valued at an estimated **$5.92 billion**.
- These landscapes' store 7.5 billion tons of carbon, saving the region **$1.1 billion** in climate change damages.
- Together, regulating water, soil, and carbon represents nearly **65% of the total economic value**.

TOURISM IS STILL CRITICAL TO BOTH THE REGIONAL ECONOMY AND GLOBAL PERCEIVED VALUE.

In addition to a $1.2 billion contribution to regional GDP, nature-based tourism creates a significant number of jobs. In 2018, conservation, tourism, and related services – including hospitality, handicrafts, and travel infrastructure – provided **786,663 jobs** (34,703 in Burundi, 325,034 in Kenya, 76,980 in Rwanda, 315,260 in Tanzania, and 34,686 in Uganda). In addition, anyone who lives in or around these landscapes benefits from nature-based tourism, as it is the engine driving conservation of the ecosystems that provide $10.9 billion in benefits that are vital to quality of life.

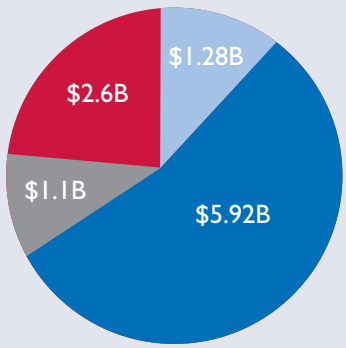
The iconic wildlife in these landscapes are also ambassadors for the region, attracting tourists from across the globe. In fact, an assessment of consumers' willingness to pay for tourism experiences and services vs. current income from this sector revealed an additional $1.5 billion in untapped revenue were the sector to adjust prices and offerings.

KEEPING LANDSCAPES INTACT IS ALSO KEY TO PASTORAL AND AGRICULTURAL LIVELIHOODS.

In addition to tourism, livestock production and resource harvesting contribute significantly to the national economies. Together, these three sectors' contribution to Gross Domestic Product (GDP) in 2018 was valued at 3.8% for Burundi, 3% for Kenya, 4% for Rwanda, 9% for South Sudan, 7% for Tanzania, and 9% for Uganda.

Pollinator-dependent crops, which make up 35% of global crop volume, also rely on intact ecosystems. While the economic contribution of pollination in East Africa as a whole has not yet been calculated, it can be expected to be significant. This report offers the first comprehensive assessment of crop pollination value in a significant portion of the region, with **pollination in the four landscapes valued at $772.6 million per year.**

LANDSCAPES' TOTAL VALUE TO REGION: $10.9 BILLION[1]



All values are in U.S. dollars

Cultural services: $1.28 billion/yr
Nature-based tourism and biodiversity existence (as measured by revenue and willingness to pay to preserve)

Regulating services: $5.92 billion/yr
Water flow regulation, water quality amelioration, preventing soil erosion (as measured by avoided costs to address negative impacts of pollution, scarcity, etc.)

Carbon storage: $1.1 billion/yr
(as measured by avoided costs to address negative impacts of climate change)

Provisioning services: $2.6 billion/yr
Livestock production, crop pollination (as measured by agricultural productivity), and harvested resources (for food, fuel, small-scale income, pharmaceutical use)

[1] All values based on 2018 data – the latest Copernicus land cover data available at the start of the project.

NATURAL CAPITAL IS GOING DOWN AS PERCENTAGE OF OVERALL WEALTH, WHICH PUTS SUSTAINABILITY AT RISK.

While many studies focus on contribution to annual GDP of the various types of capital – whether produced, human, or natural – natural capital is a critical barometer of a nation's ability to sustain social and economic well-being over the long term. This report shows that, under a business as usual scenario, natural capital will continue to decline as a percentage of regional wealth, leaving these countries unable to sustain nature-dependent businesses, provide food security and clean water, and remain resilient to climate change and extreme weather events like flooding.

While an increase in other forms of capital, including human and produced, holds benefits for any given country's economic well-being, the loss of natural capital in certain landscapes – such as those chosen for this assessment – is particularly problematic. That is because these wildlife- and habitat-rich landscapes are providing ecosystem services on which large populations in downstream rural – and increasingly urban – areas rely. The loss of regulating services in these landscapes will significantly impact the health, quality of life, and socio-economic development of this region as a whole.

GLOBAL VALUE IS EXPONENTIALLY GREATER, OFFERING POTENTIAL FUNDING OPPORTUNITIES FOR REGIONAL DEVELOPMENT.

The carbon stored by these ecosystems provides the global community an estimated $600 billion in value. This value is based on the avoided costs of mitigating climate change damages that would result if the 7.5 billion tons of carbon stored were released into the atmosphere. Termed the "social cost of carbon," these damages are typically estimated in terms of changes in GDP, which is a directly compatible measure for ecosystem accounting.

An alternative way to value carbon storage is using its value in markets that have developed as a result of government and private efforts to "neutralize" carbon emissions. Some studies calculate both values. In this study, the social cost of carbon was preferred, because the marginal price of carbon in markets is not realistic at scale. However, policymakers should consider carbon markets as one possible avenue for East Africa to pursue for potential funding for conservation and development in the region.

While avoided costs from carbon storage at the regional level are far less than those at the global level – the estimated $1.1 billion is not insignificant in the regional context, giving stakeholders at all levels a shared incentive to keep these landscapes intact.

FOUR LANDSCAPES, SIX COUNTRIES (NATURAL CAPITAL VALUE IN 2018)

Burundi
Total value: $141M/yr; 4.6% of GDP

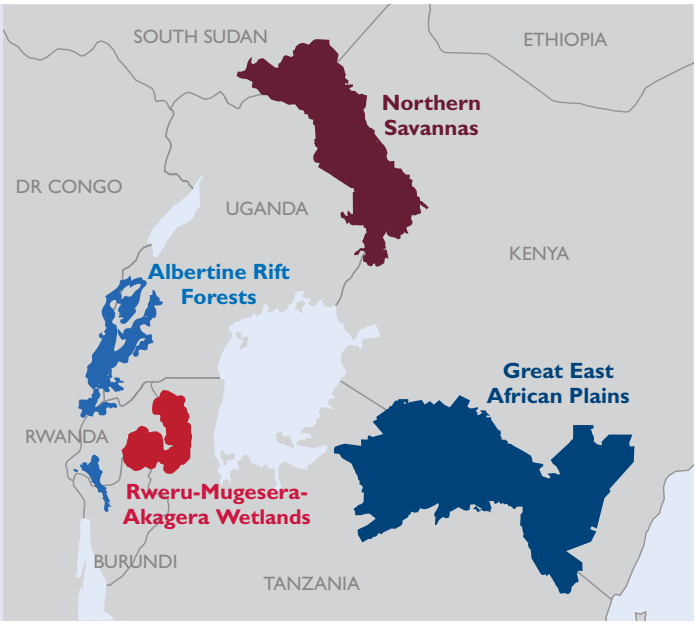
Kenya
Total value: $3.07B/yr; 3.5% of GDP

Rwanda
Total value: $338M/yr; 3.5% of GDP

South Sudan
Total value: $1.12B/yr; 24% of GDP

Tanzania
Total value: $4.12B/yr; 7.3% of GDP

Uganda
Total value: $2.54B/yr; 7.7% of GDP



THE COST OF INACTION

Projected impact by 2050 under a business as usual scenario

The value of these landscapes is high, but so are the threats. While each landscape has its own unique drivers and potential stresses on the environment, there is a likely progression – as shown below – that will take place across all landscapes if stakeholders do not work together to stem the loss of natural capital. This synthesis assessed the current (2018) threats to wildlife and habitat and their projected impact by 2050 under a business as usual scenario. (Projections consider climate change and assume full recovery from the current impacts of COVID-19.)

TOP THREATS	STRESSES ON NATURAL ENVIRONMENT	IMPACT ON ECOSYSTEM SERVICES	IMPACT ON ECONOMIC AND HUMAN WELL-BEING
1. Unsustainable land use	4. Changes to vegetation cover and soils	8. Tourism revenue declines	12. Job losses, livelihoods are diminished
2. Over-extraction of resources	5. Changes to habitat quality and connectivity	9. Regulating capacity declines, costs to mitigate damages rise	13. Food and water scarcity increases
3. Triple threat of COVID, climate, and conflict	6. Changes in freshwater quality, quantity, and flow	10. Decline in iconic species distribution and visibility	14. Negative health impacts grow
	7. Changes in wildlife diversity	11. Harvestable resources decline	*Future studies are needed to assess the full projected impact on GDP, jobs, and human well-being.*

KEY

1. Population growth at 3.5% annually will drive land conversion/degradation due to (a) increased demand for livestock, charcoal, and fuelwood; (b) greater urbanization and infrastructure development; and (c) agricultural expansion; and land subdivision and fencing.
2. Population growth will also lead to greater extraction of resources, including woody biomass and bushmeat.
3. Nature-based tourism has declined significantly due to COVID-19, and recovery will be threatened by wildlife losses and climate change. This could reduce the financial viability of protected areas in the short term and communities' access to natural resources in the longer term. The impact on livelihood security, wealth distribution, and power structures or group identities will ultimately lead to increased conflict.
4. Conversion of natural vegetation cover to cropland and denudation from overgrazing, as well as over-extraction of woody biomass, will decrease the amount of stored carbon and increase the rate of soil loss.
5. Habitats for key species will be lost and connectivity disrupted, which will impact species migration and ability to adapt to climate change.
6. Increased pollution and sedimentation in waterways will negatively impact fisheries, irrigation, hydropower, freshwater availability, and sanitation and hygiene.
7. Loss of habitat availability and connectivity will reduce wildlife biomass, increase genetic isolation of wild populations in protected areas, and reduce ability for wildlife to migrate in response to drought and climate change.
8. Tourism revenue will decline by $161 million in the Great East African Plains and $1.7 million in the Northern Savannas. It will increase in the Albertine Rift Forest by $9.5 million. In the Rweru-Mugusera-Akagera Wetlands, it will decline in Burundi and Tanzania and slightly increase in Rwanda (+1.8%).
9. Erosion control and water flow regulation/filtration capacity will decline, adding sediment, phosphorus, and other pollutants into rivers and waterbodies, raising treatment costs by $608.9 million ($556.5 million of that in Great East African Plains).
10. Carbon released into the atmosphere will increase cost to address climate change damages by $1.12 billion regionally and $597.43 billion globally.
11. Livestock production is projected to increase, putting further pressure on land, while crop pollination and resources available for harvesting are projected to decline.
12. Negatively affected livelihoods and industries will include rainfed agriculture, pastoralism, wildlife tourism, charcoal production, water-dependent private sector enterprises such as the flower industry, irrigation agriculture, and freshwater fishing.
13. Food security will diminish along with harvested resources and productive land. Water scarcity and pollution will increase for millions of people living in and around landscapes.
14. Zoonotic disease from compromised wildlife, public health burden from rising pollution and bushmeat consumption, and violence due to human-wildlife conflict will increase.

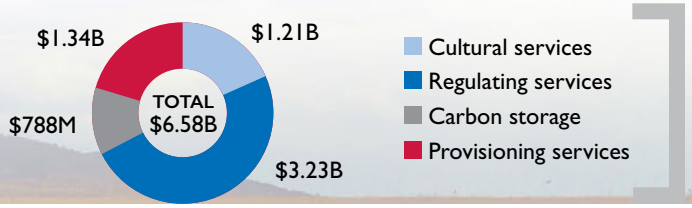
PRELIMINARY POLICY RECOMMENDATIONS

Creating policy solutions and other strategies for protecting natural capital will take all stakeholders working together across sectors and national boundaries. Engaging stakeholders in a dialogue about the assessment findings, their importance, and their potential applications is the next step in the Economics of Natural Capital in East Africa project. What follows are recommended priority focal areas.

RECOMMENDED POLICY FOCUS		
	ACTIONS NEEDED	PRIMARY INCENTIVES
Invest in community-based natural resource management (CBNRM)	**National policymakers**: Establish laws that empower communities to better manage their own resources; use blended development capital for community investment in ecotourism, e.g., Sabinyo Silverback Lodge (Rwanda); factor natural capital into COVID recovery plans.	Habitat remains viable to sustain wildlife-based tourism revenue, while healthy ecosystems advance other goals, including food security, water availability, and improved livelihoods.
	National wildlife service authorities and protected area managers: Enforce laws and provide security.	Reduced human-wildlife conflict/bushmeat trade; improved economic and biodiversity health.
	EAC: Harmonize policies and implementation strategies across boundaries as envisioned in Article 112 (1a) of the EAC Treaty on sustainable development and environmental protection criteria for transboundary area planning.	Greater impact across all countries, as well as shared learning and advancement region-wide.
	Managers of Community Wildlife Conservation Areas/ Community Conservancies: Rehabilitate/restore habitat; provide space/security for wildlife; develop alternative income streams around tourism; reinstate indigenous values around sustainable resource use.	Sustained tourism revenue; increased resilience to climate change through improved pasture quality (grass banks).
	Private sector: Partner with communities on revenue sharing models and with government on de-risking financing modalities to help weather shocks such as COVID, climate change, and conflict.	Revenue growth and sustainability.
Invest in sustainable land use planning and practices	**National policymakers:** Promote sustainable land use planning and encourage adoption of more sustainable, climate-smart practices.	Reduced poverty, food scarcity, and human-wildlife conflict.
	Pastoralists: Adopt holistic land management approaches that enable space for wildlife and pasture regeneration.	Healthier livestock and more valuable, regenerative pastureland.
	Commercial agriculture producers: Install green infrastructure (rainwater harvesting systems and drip irrigation systems, erosion control).	Preservation of habitat of wild pollinators that are critical to agricultural productivity.
	Smallholder farmers: Practice conservation agriculture, which includes *in situ* rainwater harvesting, crop diversification, and soil erosion control.	Sustainable revenue stream and increased yields and earnings.

RECOMMENDED FUNDING AVENUES		
	ACTIONS NEEDED	PRIMARY INCENTIVES
Payments for ecosystem services schemes at regional level	• **Water resource authorities:** Establish and administer water funds. • **Downstream water users (both individuals and private sector):** Understand the value of water and increase willingness to pay for its continued provision. • **National policymakers:** Establish revenue sharing schemes that tie nature-based tourism to community benefits.	Reduced water scarcity/pollution; increased benefit sharing by private sector and local communities.
Global willingness to pay	• **National policymakers and EAC:** Work at transboundary level to coordinate entry into global carbon markets. • **Tourism sector:** Raise prices and create new offerings that maximize consumer willingness to pay. • **Conservation donors and foreign aid organizations:** Continue supporting regional priorities for wildlife and habitat conservation.	Reduced competition, improved positioning in carbon markets; increased tourism revenue; conservation of endangered and endemic species.

GREAT EAST AFRICAN PLAINS



KEY INSIGHTS

- Tourism value is high at $1.2 billion per year, but it is **dwarfed by the value of regulating water and carbon ($4.02 billion per year)**. Carbon storage saves the region $787.9 million in avoided climate change damages. Savings to the global community are even greater at $397.9 billion – twice the 2018 GDP output of the East Africa region.
- Tourism is still critical to jobs. Protected areas accounted for 21% of Tanzania's and 11% of Kenya's total tourism value in 2018, **providing 638,568 jobs across the landscape**. Community conservancies on the Kenyan side provided direct employment to 1,074 rangers, supported 269,187 households, and made direct monetary contributions of $4.4 million to the Maasai Mara communities in 2016.
- **Impact on GDP goes well beyond tourism**. Livestock production contributes ~$248 million per year to Kenya's GDP and $310 million per year to Tanzania's. The Mara River Basin contributes $5-7 million per year to GDP based on sectors that depend on ecosystem regulation of water, soil, and nutrients. These include agriculture, livestock, tourism, mining, and fisheries.

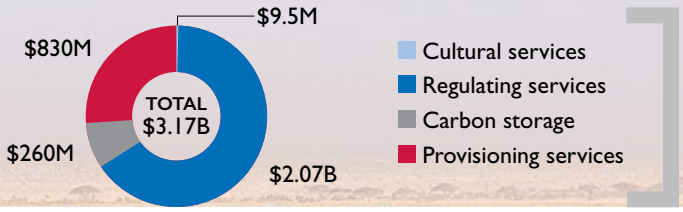
PROJECTIONS BY 2050 UNDER BUSINESS AS USUAL SCENARIO

Top threats include land conversion and over-extraction of natural resources, driven by population growth of 3.5% annually. Already 1% of the wildlife landscape is being lost annually to the expansion of cultivated area. Livestock biomass is projected to increase up to 65% on the Kenyan side and 93% in Tanzania by 2050. A 65% increase in demand for biomass and woody resources is projected, along with a 58% increase in demand for bushmeat. As a result, habitats for key species will be lost and connectivity disrupted, which will impact species migration and ability to adapt to climate change. The impact on ecosystem services will include a $161 million loss in tourism revenue; $556.5 million increase in costs to deal with the loss of water, soil, and sediment regulation (and water scarcity challenges for 14 million people); and an increase of $747.6 million regionally and $3.7 billion globally in climate change damages.

RECOMMENDED POLICY FOCUS

Slowing and reversing land cover change by focusing on sustainable land use strategies.	
STAKEHOLDER GROUP	ACTIONS NEEDED
Smallholder farmers	Participate in efforts to bring smallholder farmers into tourism sector in order to open new markets for their produce.
Pastoralists	Engage in holistic land management plans that provide space for wildlife and enable regeneration of pasture that also bank grass for drought mitigation.
Community conservancies	Rehabilitate degraded rangelands and create policies and best practices for preserving wildlife habitat and migration corridors.
Tourism sector	Adopt sustainable tourism model; allocate portion of revenue to land owners and community conservancies for improved CBNRM.
Other private sectors	Agriculture, mining, fishing, hydropower, irrigation: Participate in payment for ecosystem services (PES) schemes (watershed protection, carbon sequestration and storage [REDD+, reforestation/afforestation], and biodiversity conservation); invest in protection of land and resources that are critical to value chain.
National policymakers	Create policies that incentivize sustainable land use (zoning, alternative livelihoods) and protect land cover; policies on sustainable tourism.
EAC	Strengthen collaborative mechanisms for co-managing protected areas and shared water catchments, as well as combating illegal killing of wildlife; create policies that tap into carbon markets through avoided nature loss and nature-based sequestrations.
International donors	Support regional access to, and benefits from, carbon markets, and invest in CBNRM that improves climate resilience in East Africa and globally.

NORTHERN SAVANNAS



KEY INSIGHTS

- At $2.07 billion, water and sediment regulation are the most valuable services in this landscape, underpinning livelihoods for millions.
- Water quality amelioration is also key to livelihoods, including fisheries around Lake Kyoga and agriculture in South Sudan, a sector that employs 80% of the country's workforce.
- Tourism offers high potential for private sector investment, building on the recent progress in Uganda and offering potential jobs and income for South Sudan as it emerges from conflict.
- Due to its carbon storage, the global community places a high value on this landscape at $15.2 billion. Tapping into global willingness to pay is a potential opportunity to fund the policy priorities noted below.

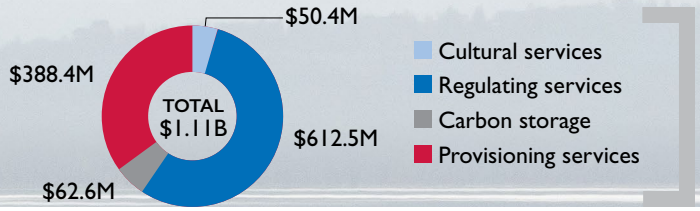
PROJECTIONS BY 2050 UNDER BUSINESS AS USUAL SCENARIO

Top threats include land conversion and degradation, and unsustainable resource use, including overharvesting of woody biomass (with demand estimated to increase by 35% by 2050) and bushmeat consumption (increasing by 30%). Of the four landscapes, the Northern Savannas are predicted to experience the largest shifts in temperature and precipitation due to climate change, which will increase flooding, drought, and soil erosion. Increased pollution and sedimentation in waterways will negatively impact fisheries, irrigation, hydropower, freshwater availability, and sanitation and hygiene in Lakes Kyoga and Turkana catchments. In total, under a business as usual scenario, the landscape's reduced capacity to regulate water, soil, sediment, and carbon will raise treatment costs by an estimated $29.7 million per year.

RECOMMENDED POLICY FOCUS

#1: Protect Mount Elgon's water tower.	
STAKEHOLDER GROUP	ACTIONS NEEDED
National policymakers in Kenya and Uganda	(1) Work across boundaries to ensure that Mount Elgon remains climate resistant to prevent landslides, flooding, drought, and soil erosion. (2) Enter into partnerships with the private sector to develop an insurance scheme for farmers that includes coverage to support landscape restoration – focusing on reforestation (new carbon) and climate-smart agriculture.
Private sector	Insurance companies/agricultural financing companies: Partner with national government on insurance schemes that incentivize reforestation and climate-smart agriculture.
Hydropower managers	Turkwel Dam (106 MW) in Kenya, along with smaller station Siti Hydroelectric Power Station (5 MW) in Uganda: Collaborate with farmers upstream to prevent sediment from flowing into rivers and dams downstream.
EAC	Harmonize policies, legislation, and strategies across national boundaries.
Farmers	1) Reduce farming activities that accelerate erosion, practice conservation agriculture; (2) engage in reforestation activities that prevent landslides.
#2: Improve land use/wildlife management in transboundary Kidepo Cluster Landscape.	
STAKEHOLDER GROUP	ACTIONS NEEDED
National policymakers	(1) Support CBNRM through ecotourism enterprises; (2) Invest in infrastructure and security to stimulate growth of tourism and other sectors.
Pastoralists	Adopt more sustainable grazing practices, such as holistic management, re-seeding plans, and land use planning that reduces human-wildlife conflict. Avoid grassland conversions.
Tourism sector	Invest in ecotourism infrastructure and marketing, especially in the Kidepo cluster transboundary landscape.

ALBERTINE RIFT FORESTS



KEY INSIGHTS

- **Erosion control and material harvested from nature are the most important ecosystem services.** Natural vegetation retains 619 tons of sediment per hectare per year, saving the landscape an estimated $611.8 million per year in erosion control. Provisioning services are also key to local livelihoods including resources harvested for livestock, building, medicine, energy (more than 95% of households use firewood or charcoal as a main fuel source), and sale (access to forest products has been shown to increase household incomes by up to 35% per year).
- **This landscape ranks exceptionally high as a global conservation priority.** Because of its biodoversity, endemic and threatened species, the global conservation community started an eco-region conservation planning process across the landscape in Uganda, Rwanda, Burundi, DRC, and Tanzania in 2003. Transboundary policies that ensure habitat connectivity for iconic species like gorillas are key to driving tourism and continued conservation investment.
- **Gorilla trekking drives tourism to other parks and activities in the region**. If current gorilla conservation efforts remain effective, annual tourism value could increase by $5.3 million in Rwanda and $4.2 million in Uganda by 2050. In contrast, annual tourism value is predicted to decline by $400,000 in Burundi due to poorly developed tourism products, insecurity, and forest encroachment.

PROJECTIONS BY 2050 UNDER BUSINESS AS USUAL SCENARIO

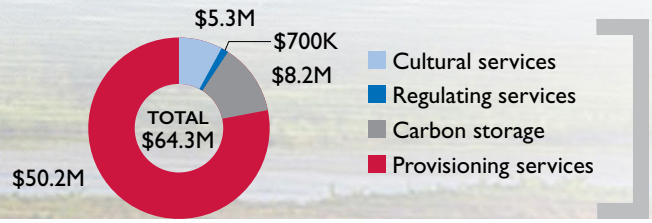
Top threats include land conversion and unsustainable resource use, both exacerbated by climate change. Intensive cropping has expanded to the edges of protected areas, leading to deforestation and making it harder for species to disperse to escape climate change pressures. Farming on steep slopes is also contributing to soil erosion and forest degradation, as is rising urbanization, which has increased demand for charcoal and building materials. With population growth, demand for woody resources could increase by about 75% by 2050. Approximately 89,000 ha of forest could be lost, impacting wildlife habitat, food security, and livelihoods. Rampant bushmeat offtake and the illegal wildlife trade have also hurt wildlife populations. Ongoing habitat conversion in the Democratic Republic of the Congo (DRC) may erode the critical landscape corridors between Rwanda, Uganda, and the DRC. There will also be reduced support for fisheries and water, sanitation, and hygiene in the Lake Edward and Lake Albert basins, which support a population of approximately 12 million.

RECOMMENDED POLICY FOCUS

Continue the positive trajectory of gorilla conservation efforts, while also prioritizing forest cover (especially on slopes) to maintain habitat integrity and erosion control.

STAKEHOLDER GROUP	ACTIONS NEEDED
Smallholder farmers, hunter-gatherers, cattle keepers, and fishers, as well as community conservancies	Restore and safeguard environments that support livelihoods, taking into account the needs of women and vulnerable groups. Harvest resources sustainably. Advocate for revenue sharing schemes (RSS) and PES to support efforts to improve sustainability.
Commercial agriculture sector	Support schemes that improve community livelihoods while encouraging habitat conservation, such as the National Agricultural Insurance Scheme (NAIS) in Rwanda.
Tourism sector	Advocate for RSS and PES to promote sustainable resource use. Invest in tourism infrastructure, as well as habitat conservation. Prepare for the impacts of climate change on gorillas and other iconic flora and fauna.
Other private sectors	Support strategies related to PES for erosion and water quality control downstream. Invest in green infrastructure.
National and regional policymakers	Expand RSS and PES models at country and transboundary levels that tie revenue to community benefits. Integrate the economic value of biodiversity and ecosystem services into national accounting and planning processes. Engage in international agreements and treaties that support wildlife conservation and climate change adaptation.

RWERU-MUGESERA-AKAGERA WETLANDS



KEY INSIGHTS

- **Harvested material is the landscape's top benefit**. Although wetlands are important as buffers to flooding or overflow plains, this system is most valuable to the surrounding communities through its provision of natural material for food, building, and other resources. At $50.2 million, these provisional services are ten times more valuable than nature tourism at $5.3 million in 2018.

- **Sediment and phosphorus retention support fisheries in Lake Victoria.** Downstream from this landscape in Lake Victoria, fisheries support more than three million livelihoods and accrue $500 million in revenues annually. The wetlands' catchment areas help prevent excess nutrients from reaching the lake by capturing 2,700 tons of phosphorus and 7,000 tons of nitrogen per year. Without this service, water quality amelioration costs would be an estimated $700,000 per year.

- **This landscape shows great potential growth for tourism**. Rwanda's Akagera National Park, whose northern section shares a border with Tanzania's Ibanda-Kyerwa National Park, is currently the country's most visited park. It generated $1 million in 2018 from 44,000 largely (60%) local tourists. The Burundi portion of the wetland has the *Lacs du Nord* protected area, which earns $0.03 million per year, while Ibanda-Kyerwa National Park in Tanzania's portion was designated a national park only in 2019. The transboundary 100km^2 Lake Rweru in northern Burundi and southeastern Rwanda is famous as the most distant start point of the Nile River. Because 80% of the lake is in Burundi, the country has an opportunity to grow nature tourism.

PROJECTIONS BY 2050 UNDER BUSINESS AS USUAL SCENARIO

Top threats include reduction and fragmentation of wetland habitat and over-extraction of natural resources, both of which are exacerbated by climate change. Wetlands are attractive sites for cultivation, and population growth has meant extensive habitat conversion. Approximately 30% of swampland (90,000 ha) has been lost to cultivation in the Rwandan portion of the Akagera Basin. Extensive use of reeds and sedges is a distinguishing feature of this landscape, with resources extracted for handicrafts, building, food, and medicine. Demand for papyrus is estimated to increase by 84% by 2050, greatly reducing stocks. In Burundi, fishing is extensive, with catch totaling 3,600 tons in 2018 and demand predicted to increase by 113% by 2050. The invasive water hyacinth has also reduced water availability and filtration capacity.

RECOMMENDED POLICY FOCUS

Reduce unsustainable resource and land use and clear invasive alien hyacinth.	
STAKEHOLDER GROUP	ACTIONS NEEDED
Smallholder farmers, cattle keepers, fishers	Promote sustainable extraction and rehabilitation of natural resources, including lucrative medicinal plants; address bush burning in Tanzania; clear alien invasive species and rehabilitate degraded areas.
Water supply agencies	Support PES schemes for clean water and reduced water hyacinth invasion.
Tourism sector	Continue investing in Akagera National Park as a Big Five destination; invest more in tourism for the other two protected areas, including pursuing private sector investment in new offerings; reinvest profits into wildlife conservation.
Fisheries sector	Within the landscape – practice sustainable fishing and address water hyacinth removal; downstream (in Lake Victoria) – support payment for ecosystem services schemes for controlling eutrophication and invasive water hyacinth.
Community groups	Identify community priorities for sustainable resource use and participate in developing wetlands management plans; capitalize on gorilla tourism to fund restoration of wetlands areas to wilderness status.
National and regional policymakers	Harmonize policies across borders on wise use of wetlands and controlling invasive species; improve enforcement; support environment-friendly livelihoods.

NEXT STEPS

The value of these four iconic landscapes is indisputable. It lies not just in their intrinsic beauty and cultural significance, but in the services their ecosystems provide to support economic and human well-being across the region. However, the threats to natural capital in East Africa are significant. In addition to population growth placing ever-increasing pressure on resources, climate change stands to exacerbate environmental and economic challenges on an unprecedented scale.

There are many stakeholders who benefit from and steward natural capital in this region. They share a mutual dependence on preserving the ecosystems that underpin all aspects of life, and therefore need to unite around shared solutions to conservation and sustainable development. That is why this study was conducted at the landscape level. Because upstream actions have downstream consequences, and the interests of each country, sector, community, and species are intimately connected.

While continued research is required, we now have foundational data on the relative value of various ecosystem services across priority landscapes. Over the next 12 months, USAID and its EAC partners will convene stakeholders to:

- **validate the data** – ensuring these findings are reasonable and actionable;
- **develop action plans** – reviewing and refining the situation models mapped in this report and identifying policy, outreach, and other types of actions that will best address the threats to the region's most valuable ecosystem services; and
- **finalize the report** – capturing all stakeholder input, updating the findings, outlining the action plans, and producing a final product that can help all parties make more informed evidence-based decisions going forward.

A transboundary approach is critical to ensuring conservation of East Africa's natural capital. This landscape-level data will enable stakeholders across boundaries – whether political, social, or geographical – to have meaningful discussions about how to ensure their collective prosperity.

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