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State of the **Wildlife Economy** in Africa

Case Study: Uganda





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About the CONNECT Project

Conserving Natural Capital and Enhancing Collaborative Management of Transboundary Resources in East Africa (CONNECT) is a project which aims to strengthen the conservation and management of natural resources shared by East African countries including wildlife and landscapes popularly referred to as transboundary natural resources. The project seeks to strengthen East African Community (EAC's) institutional leadership to deliver on its regional mandate and commitments to conserve and manage the shared environment and natural resources in East Africa. By strengthening existing regional conservation initiatives through generating evidence-based information, innovative methodologies, tools, and best practices, the EAC Partner States and their citizens will reap the benefits of their natural resources.

The project is implemented by a consortium of regional organizations led by the International Union for Conservation of Nature (IUCN) through the Eastern and Southern Africa Regional Office (ESARO) in partnership with TRAFFIC, the wildlife trade monitoring network, and the Worldwide Fund for Nature (WWF). The project is implemented in collaboration with, and through policy guidance from, the EAC Secretariat and the Lake Victoria Basin Commission (LVBC).

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African Leadership University (ALU) is pioneering a fresh approach to higher education in the 21st century; offering accredited undergraduate, postgraduate and executive education programmes in a unique and imaginative way. By integrating students' learning with the real world, empowering students to take ownership of their own learning, equipping each student to think entrepreneurially, and employing the most engaging and inspiring teaching methods, ALU is pioneering a new take on higher education and leadership development. <https://www.alueducation.com>

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The School of Wildlife Conservation (SOWC) is the conservation initiative of the African Leadership Group. It was established in 2016 to promote conservation as an African growth sector by developing the next generation of entrepreneurial conservation leaders at all levels, through undergraduate, middle management, and executive programmes. In combining innovative research and leadership talent cultivation, SOWC encourages entrepreneurship within the wildlife economy and provides a platform for young entrepreneurs to incubate their innovative conservation business models. At a macro level, SOWC seeks to influence the sector's decision-makers to adopt sustainable business models and promote an entrepreneurial business-minded approach in African conservation. <https://sowc.alueducation.com>

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Photographers

Thank you to all those who donated photographs for this report. Please see the credits on the photographs for details.

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DISCLAIMER

Although every attempt was made to collect data from as many sources as possible, both online and from numerous, varied other sources, this report is in no way exhaustive and there are a number of data gaps. For a number of the wildlife economy activities the 'latest' available data was often still 5-10 years old, highlighting a major gap in terms of relevant, recent, robust data to measure the value of the wildlife economy in Africa. The authors have taken care to ensure that the material presented in this report is accurate and correct. However, the authors do not guarantee the accuracy of the data or material contained in this report, and accept no legal liability or responsibility connected to its use or interpretation.

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CASE STUDY INTRODUCTION

Overview of the research

Conservation of wildlife is frequently seen as a cost to governments, resulting in little investment in wildlife resources despite the extensive contributions that the wildlife economy can, and does, make in terms of employment and revenues. The African Leadership University's School of Wildlife Conservation received funding to conduct research and produce the inaugural State of the Wildlife Economy in Africa Report to illustrate the current and potential value of wildlife to economies in Africa and through this to encourage investment in this important economic asset. The report development process highlighted data gaps that should encourage the collection of robust data related to wildlife economies in order to better understand the vast contribution of wildlife resources to local, national and regional economies. For the purposes of this research, the wildlife economy is defined as:

"The Wildlife Economy uses wildlife, plants and animals (marine and terrestrial), as an economic asset to create value that aligns with conservation objectives and delivers sustainable growth and economic development"

Wildlife economies can include a mix of consumptive and non-consumptive uses. The growth and development of the wildlife economy in Africa is influenced by a number of factors, including, amongst others:

- The enabling environment which either facilitates (or not) various stakeholders, including communities and the private sector, to engage in and benefit from the wildlife economy. This includes policy, legislation and supporting institutions
- The stock of wildlife resources for use in the wildlife economy
- Investment in wildlife resources to 'grow' the asset base on which the wildlife economy depends
- Political will and support
- Infrastructure to support the wildlife economy, such as roads, airports, hotels, etc.

As the first comprehensive regional assessment of the wildlife economy in Africa, the [State of the Wildlife Economy in Africa report](#) has the following main objectives:

1. To provide an overview of the status of the wildlife economy in Africa, including country case studies
2. To provide an overview of the regulatory framework governing the wildlife economy, including country case studies
3. To highlight gaps in the data in terms of country data, as well as data specifically relating to different types of wildlife economy activities
4. To analyse and highlight best practices of particular relevance to the region, through the use of case studies
5. To provide facts and figures required by governments and investors to make informed decisions, track progress and provide guidance for implementation in terms of the wildlife economy
6. To raise the profile of the wildlife economy in Africa and to highlight the importance of seeing wildlife as an asset to invest in
7. To promote the learning of lessons between countries and organisations
8. Where possible, to provide key recommendations for policy and practice

The **overall aim of the report** is to highlight the potential of the wildlife economy and encourage more public and private investments in protected and conserved areas to improve biodiversity outcomes and support economic development. Success would include turning conservation into a growth industry, attracting young, inspired leaders, increasing private sector investment in wildlife resources and related businesses, involving communities and increasing their benefits and nature/wildlife becoming more abundant. Ultimately, the aim is to ensure that governments see wildlife as a key strategic asset and, therefore, create an enabling environment for the wildlife economy and the conservation of related wildlife resources.

The first report focuses on **five main wildlife economy activities**: ecotourism, hunting, wildlife ranching, carbon finance and non-timber forest products. The activities included in the report had the criteria of having to contribute to both biodiversity conservation and social and/or economic

development. For this report, the activities are defined as follows:



Ecotourism includes non-consumptive tourism related to nature/wildlife.



Hunting includes trophy hunting, game meat hunting, as well as some aspects of fishing, such as artisanal, small-scale and recreational fishing.



Wildlife ranching includes the breeding of wild/indigenous animals for hunting, game meat, products and other uses.



Other consumptive use includes non-timber forest products used commercially and for subsistence purposes.



The carbon market includes projects that earn income through REDD+ and other mechanisms that sequester carbon, reduce greenhouse gas emissions and conserve/preserve natural systems of carbon.

The full report covers 54 countries in Africa. Data for all 54 countries was, however, not available and a selection of case study countries, with diversity in terms of geographic location, biomes, wildlife economy activities, policy and socio-economic context were selected (selection criteria described below). Throughout the report, text boxes have been included covering other countries in order to cover as many countries on the continent as possible and to provide examples of different approaches to the wildlife economy, as well as innovative examples and best practices. Wherever possible, attempt has been made to allow for generalisations, and where not possible, caveats or specific enabling factors have been highlighted.

The case study countries in the full report were selected based on the following criteria:

1. **A diversity of regions:** to ensure that we included one example from each of the regions: East Africa; Southern Africa; West Africa and Central Africa
2. **Diversity of wildlife economy activities:** to make sure that the case study countries included a diversity of activities rather than focusing on one activity such as ecotourism, and to make sure that as many different activities were covered as possible, including ecotourism, trophy hunting, game meat hunting, wildlife ranching, non-timber forest products, carbon projects (current and future), artisanal fisheries, etc.
3. **Diversity of enabling environments:** to enable an analysis of different policy, legislation and institutions and their effectiveness in supporting the wildlife economy
4. **Diversity of biomes and ecosystems,** including forest, marine, savannah, fynbos, miombo woodland, tropical rainforest, etc.
5. **Availability of data:** we chose countries where we had a number of in-country contacts to assist with on the ground research, given that the team couldn't travel due to the COVID pandemic.

Data collection process

A project of this magnitude requires a number of different approaches to gathering the data and information required to present analyses and a useful picture of the wildlife economy in Africa. Given various time constraints to develop this report, and the impacts of COVID-19 on travel and access to printed documents, it was decided to focus on conducting a literature review, as well as desktop research, with a focus on five case study countries as well as, where possible, contacting in-country sources to gather data. Future research aims to conduct more primary research and data collection, based on the data gaps identified in this report. All currency amounts in the report have been converted to USD for comparison purposes, with the local currency amount still included, using the average annual USD rate for the year of the data. Some graphs and tables have, however, been kept in the local currency because fluctuations in the exchange rates can affect the USD amount in such a way that it does not reflect the true local and national economic impacts as well as the local currency amounts do.

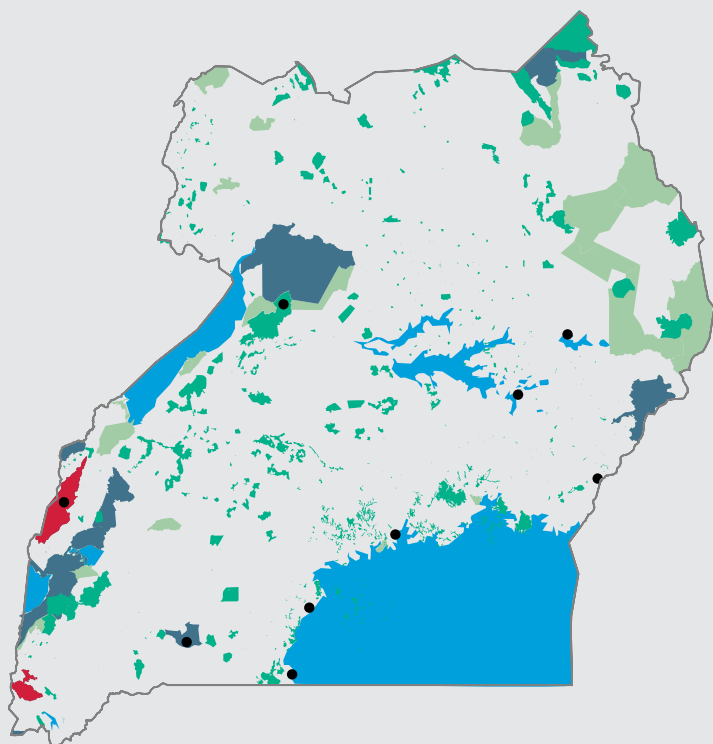
During the research for this report, it was found that very few countries in Africa have a good understanding of the value of the wildlife economy at a national level. For certain wildlife economy activities there was information and data available at a local, and often only a project level, and often this data was only collected for the duration of the project, or when funding was available. This resulted in data for the continent, as well as per country, largely being inconsistent, incomparable, and often quite old. The overall research project highlights a **large gap in data on the value of the wildlife economy** and the important need to have consistent, comparable data to ensure that the value of the wildlife economy is truly understood. This information would allow for better policy and investment decision making and would encourage greater investment in the wildlife economy once the true value is understood.

Research for the case study countries included contacting relevant contacts in the specific countries, an extensive literature review and engaging stakeholders to collect as much relevant, up-to-date data as possible. The complexity of stakeholders involved in the wildlife economy and the fact that a large amount of activity also occurs in the informal sector, also results in a difficulty in collecting and collating data that provides a true reflection of the value of the wildlife economy. The data collection process was in no way exhaustive and was done with the purpose of providing an illustrative overview of the wildlife economy in Africa. Following on from the full report and the [Roadmap for Africa's Wildlife Economy report](#), this case study focuses on the state of the wildlife economy in Uganda.

The data collection process for this case study followed the same steps as for the main report but also included a stakeholder inception workshop, as well as a stakeholder validation workshop.

All country case studies follow the same structure to allow for comparisons and ease of reading. The general structure is as follows:

- Country map with key statistics
- Wildlife economy summary graphic
- Key points related to the wildlife economy
- Introduction/background: conservation and socio-economic
- Regulatory framework/enabling environment
- Wildlife economy activities (where relevant):
 - Ecotourism
 - Hunting
 - Wildlife ranching
 - Carbon
 - Non-timber forest products
 - Other activities
- Summary
- References



Overview of relevant social, economic and conservation statistics for Uganda



- Protected areas (point data)
- Forest reserve
- World Heritage UNESCO site
- National Park
- Other protected areas
- Lakes

Protected areas

734 protected areas

16.06% terrestrial protected area

10 National Parks



Species numbers

345 mammal species

**1,057 bird species
(24 are globally threatened)**



Conservation

243,145km² land area

5 community wildlife areas

12 Wildlife Reserves

506 Central Forest Reserves



Socio-economic/governance

GDP per capita (USD)
932

GDP growth rate
5.4%

Gini coefficient
42.8

Transparency International
Corruption Perception Index
Ranked 142nd
out of 180 countries

Total population
41.1 million

Population density (people per km²)
173

Sources: NEMA, 2019; Owoyesigire, G., 2021; Transparency International, 2021; UBOS, 2021 & 2021b; UNDP-NEMA, 2017; UNEP-WCMC, 2021; UWA, 2018; World Bank, 2021

Overview of the wildlife economy in Uganda



Non-timber forest products

- Many NTFPs are collected, traded and consumed outside of the cash economy and, therefore, not captured in national statistics
- Total contribution of forests to local people's livelihoods at the national level was calculated to be USD 190 million
- Total economic value including all marketable and non-marketable values of Uganda's forests is approximately USD 168 million (+/-5.2% in GDP terms)
- Little cultivation of wild plants for commercial purposes
- Income from forest products is more important than income from livestock and employment/trade combined
- Resources worth approx. USD 156,500 were shared with the communities neighbouring the protected areas in 2018



Carbon finance

- Carbon storage in Uganda is characterised by biomass and soil organic carbon
- As of 2016, ECOTRUST: Trees of Global Benefit (TGB) commanded about 1.8% of the voluntary carbon market share, with 1,321.85 hectares of farmland for 1,533 farmers yielding an equivalent of 1 million tonnes of carbon worth USD 6 million
- 8 million hectares in terms of landscape restoration opportunities
- Net carbon gain estimated from PAs suggest that PAs are an effective policy tool to reduce carbon emissions



Fisheries

- Fisheries in Uganda are critical for local livelihoods and food security, as well as being an important export
- The fisheries sector in Uganda contributes to about 2.5% of GDP and supplies 50% of the animal protein consumed in the country
- The sector supports the livelihoods of approx. 5.3 million people
- Fish and fish products have consistently (from 2014-2018) scored second to coffee with respect to Uganda's formal exports by value
- 80% of fishers are categorised as 'artisanal'
- Uganda is the largest aquaculture producer in sub-Saharan Africa after Nigeria
- On Lake Victoria alone, there are currently (2018) 14,000 fish farmers with a total of 30,000 ponds, as well as 2,135 cages, employing 24,160 people
- Uganda earned USD 171.5 million from the export of fish & fish products in 2018



Ecotourism

- Private sector plays a significant role in the development and management of the tourism sector
- In 2019, leisure tourists had the highest value added, highest value of tourism exports and the highest value added as a percentage of GDP
- 1 USD of tourist exports created between USD 0.9 (direct + indirect effects) and USD 2.5 (direct + indirect + induced effects) of value added
- Visitation to national parks and wildlife reserves had been steadily increasing since 2014
- Gorilla permit sales earned approx. USD 26 million in FY 2018/19
- A total of approximately USD 10 million has been shared with local communities through the Tourism Sharing Scheme since 2005



Hunting

- Hunting generated over USD 700,000 in 2019
- Hunting revenues are shared between partners, which include the private sector and communities, in line with the collaborative agreements
- There is a large amount of unregulated and illegal bushmeat hunting in Uganda



Wildlife trade

- Legal wildlife trade in Uganda is largely restricted to live birds, reptiles and amphibians
- There is also legal (and illegal) trade in fauna, for example *Prunus africana*, *Dalbergia melanxylon* and *Osyris lanceolata*
- Value of regulated wildlife trade is estimated at USD 3 million per year
- Illegal trade running parallel to legal trade, with Uganda playing a key role as a conduit in the illegal wildlife trade
- Future opportunities for regulated wildlife trade lie in diversification into other commodities

Sources: Adeleke et al., 2019 in NEMA, 2019; Barirega et al., 2012; Bush et al., 2012; Chidumayo, 2013 in Tugume et al., 2019; ECOTRUST, undated; FAO, 2013; NEMA, 2019a, 2019b; Olupot et al., 2009; Ministry of Tourism, Wildlife and Antiquities, 2018b, 2020, 2021a, 2021b; Moyini & Masiga, undated; Rossi, 2018; Ssemmanda et al., 2020; Sserwambala, 2018 in NEMA, 2019a; UNDP & NEMA, 2017; UNEP-WCMC, undated; UWA, 2019, 2021; World Bank, 2020

Key messages

- Uganda is endowed with a **great diversity of animal and plant species** which forms the foundation of the wildlife economy
- **Degradation and the loss of natural resources** is, however, a threat to biodiversity and the sustainability of the wildlife economy
- **Uganda has an extensive regulatory framework and numerous institutions involved in the wildlife economy:** it is important to ensure collaboration and cooperation to manage any overlapping mandates or conflicting policies
- Although there was a large amount of data on the wildlife economy in Uganda, most of it was at a site-level and there was **little national level data**, with many gaps especially in terms of forest products
- **Ecotourism is well-established** in Uganda and contributes extensively to the economy, but there is a need to diversify the tourism product and services and establish better infrastructure (roads, airports, etc.) to accommodate this
- A variety of **forest products are widely used in Uganda for subsistence and livelihoods**. A large amount of this is in the informal economy and, therefore, not accounted for in national statistics or considered in policy-making
- **Fisheries are a key sector in Uganda:** in terms of livelihoods, subsistence and exports. Management of resources in terms of over-fishing, illegal, unregulated and unreported fishing needs to be a priority to ensure the sustainability of this sector
- Uganda has **potential in terms of the carbon market** and already has numerous REDD+ projects



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Introduction to Uganda's natural resources and biodiversity

Uganda is endowed with a great diversity of animal and plant species, which form the foundation of the economy (NEMA, 2019a). It was estimated by Moyini et al. (2002 in NEMA, 2019a) that the **gross returns to the national economy from biodiversity alone were as high as USD 63.9 billion** and although Uganda occupies only 2% of the world's area, with a recorded 18,783 species of fauna and flora (NEMA, 2009), **the country ranks among the top ten most biodiverse countries in the world** (CBD, undated).

Uganda is situated in the Great Lakes region and covers a total surface area of 243,145km², of which 16% is terrestrial protected areas, comprising **10 national parks, 506 central forest reserves, 191 local forest reserves, 11 wildlife sanctuaries, 12 wildlife reserves and 5 community wildlife management areas** (pers. comm. G. Owoyesigire, August 2021; UNEP-WCMC, 2021; UWA 2018). The Uganda Wildlife Authority (UWA) is mandated to manage the protected area estate. Uganda has two World Heritage sites, 12 Ramsar sites and two UNESCO Man and Biosphere Reserves (UNEP-WCMC, 2021).

Uganda hosts rich biodiversity, including 53.9% of the world's remaining mountain gorilla (*Gorilla beringei beringei*) populations; 50% of Africa's bird species; 39% of Africa's mammals; 19% of Africa's amphibian species, 14% of Africa's reptile species; 1,249 recorded butterfly species and 600 species of fish (NEMA, 2019a). **Most wildlife is found inside protected areas**, but the historical loss of wildlife species in the country has been considerable and the negative trends appear to be continuing for some species (UWA, 2018). Poaching and illegal over-hunting have in the past, contributed to the loss of the country's species richness (UWA, 2018). In a few cases (e.g. the mountain gorilla, elephant and Uganda kob), the trends show some increase, partly because of improved management due to political stability (Pomeroy & Tushabe 2004 in UWA, 2018). Table 1 shows the summary of species considered by the Ministry of Tourism, Wildlife and Antiquities (MTWA) (2018) for inclusion in the Red List for Uganda.

Table 1: Summary of species considered for inclusion in the Red List for Uganda

	Mammals	Birds	Reptiles	Amphibians	Butterflies	Dragonflies	Plants	Total
Total species considered	329	156	174	90	490	97	125	1461
Threatened Species								
Critically endangered	14	9	5	1	44	16	21	110
Endangered	25	24	9	11	69	4	32	174
Vulnerable	38	50	17	7	71	24	46	253
Other categories								
Data deficient*	48	32	70	25	235	19	6	435
Regionally extinct**	2	2						4
Near threatened	12	20	16	8	71	34	4	165
Least Concern	187	19	54	33			16	309
Not applicable***	3		3	5				11

* Data deficient describes where there was not sufficient data to allow assessment (these species are highly likely to be threatened).

**Describes species already considered to have been eradicated and to no longer have resident populations in Uganda

***Species considered never to have occurred in Uganda (misidentification, change of nomenclature for the species, or a vagrant)

Source: Ministry of Tourism, Wildlife and Antiquities, 2018

Table 2: Forest ownership in Uganda (1990 and 2015)

Types of forest ownership	1990		2015		% change
	Hectares	%	Hectares	%	
All forest area	4,933,271	100%	1,956,664	100%	-60%
Forests under UWA (National Parks & Wildlife Reserves)	794,881	16%	624,578	32%	-21%
Forests under NFA (Central Forest Reserves)	791,240	16%	504,391	26%	-36%
Forests on private land	3,347,150	68%	827,695	42%	-75%

Source: MWE, 2016 in NEMA, UNDP and Global BIOFIN, 2019:3

The **fish species diversity in Uganda is dominated by the Cichlid family consisting of 324 species**, of which 292 are endemic to Lake Victoria (UNDP & NEMA, 2017). Another 42 fish species (non- cichlid) are spread throughout aquatic resources with 15 of those endemic to Lake Victoria and there are 600 other species found in the major fisheries in Uganda – the main commercial species are Nile Perch (*Late nilotica*) from all the major lakes except Edward and George (UNDP & NEMA, 2017).

Nearly half of Uganda is affected by severe land degradation and deforestation is a major issue with Uganda having lost

62.5% of its forest cover: declining from 23.8% (4.8 million hectares) in 1990 to 9.9% (2 million hectares) in 2017 (NEMA, 2019a; NEMA, UNDP and Global BIOFIN, 2019). A recent study by the Ministry of Water and Environment (MWE) and the National Forest Authority (NFA) shows, however, that there has recently been an increase in forest cover up to 12% (pers. comm. O. Gowoyesigire, UWA, August 2021). **Forest loss in the country has mainly been due to the conversion of forest to agriculture.** Demand for fuelwood is also high. Over 75% of forests on private land were lost between 1990 and 2015 (MWE, 2016 in NEMA, UNDP and Global BIOFIN, 2019): see Table 2.

The **key drivers for a high rate of deforestation** have been: an increasing population (population growth rate of 3.2%) with a high demand for wood, and a poorly segregated governance system, as well as other factors such as civil strife in the woodland areas and limited livelihood options (NEMA, UNDP and Global BIOFIN, 2019). As of February 2019, Uganda is the third largest refugee-hosting country in the world, with a total of over 1.2 million refugees whose main source of energy for cooking is fuelwood derived from cutting trees (NEMA, 2019a). Under the Forest Landscape Restoration (FLR) Program, **8.08 million hectares have been identified for restoration** (NEMA, 2019a).

Wetland coverage reduced from 15.5% in 1994 to 13% (31,411km²) in 2017: **on average the country is losing approx. 791km² (2.12%) of wetlands per year** (NEMA, 2019a). If this trend continues, all wetlands in Uganda will be degraded by 2046. Of the remaining wetland, 8.9% is intact, while 4.1% is degraded (NEMA, 2019a). **Wetland conversion/degradation is mostly due to** conversion to subsistence cultivation (rice, sugarcane, maize) and demand for land for urbanisation (NEMA, 2019a). According to NEMA (2011 in UNDP & NEMA, 2017) wetlands in Uganda provide **320,000 people with direct employment and provide subsistence employment for over 2.4 million people**.

Kakuru et al. (2013 in UNDP & NEMA, 2017) estimated the annual contribution of wetlands on three agroecological zones of Uganda - the Kyoga plains, the Lake Victoria crescents and the South Western farmlands and found that the total economic contribution of wetlands in these three zones was estimated at USD 10,948; USD 10,388 and USD 11,358/ha/year. The estimated value included fish breeding and fish production, crop production, livestock grazing or pasture, livestock watering, value added through mulching, milk production and papyrus and domestic water supply (UNDP & NEMA, 2017).

In terms of the value of natural resources, according to the World Bank (2012) one third of Ugandans depend on wetlands for their domestic water supply, with these **wetlands providing provisioning services alone of over USD 100 million per year**. They also estimated that the **value of forest water services to only the 2.7 million people living adjacent to forests at USD 7.8 million per year** (World Bank, 2012). The **value of non-timber forest products** – excluding fuelwood – was valued at

USD 63 million a year and the **tourism value of forests** at USD 80 million a year (World Bank, 2012). The **estimated carbon storage value** of Uganda's current (2012) forest estate was estimated at USD 1.2 billion (World Bank, 2012). **The overall economic value of environmental and natural resource (ENR) goods and services was estimated at, at least, USD 4.44 billion per year**, when including only a few ENR goods and services, with the government only spending 0.36% of the ENR income to manage the sector (World Bank, 2012). Although these figures are nearly ten years old, they illustrate the huge contribution that wildlife resources make to the national and to local economies.

The largest protected area in Uganda, located at the northern end of the Albertine Rift, is Murchison Falls Protected Area (MFPA), a biodiversity hotspot, which comprises Murchison Falls National Park (MFNP), Karuma Wildlife Reserve and Bugungu Wildlife Reserve, and covers a combined area of 5,056km². Queen Elizabeth Protected Area (QEPA), part of the UNESCO Man and Biosphere Reserve network, comprises Queen Elizabeth National Park (QENP), Kyambura Wildlife Reserve and Kigezi Wildlife Reserve. It is also located within the Albertine Rift Valley and covers 2,465km² (Travers et al., 2017).

Community engagement has long been a part of Uganda's conservation policy. The goal of the Uganda Wildlife Authority's **Community Conservation Policy of 2019** is '*to achieve community appreciation and long-term support for conservation through enhanced institutionalised implementation of Community Conservation programmes, strategies and activities*'. The policy objectives are (UWA, 2019):

- 1) To strengthen community conservation in the management of wildlife resources inside and outside the PAs;
- 2) To enhance equitable sharing of wildlife benefits with local communities, local governments and landowners;
- 3) To promote sustainable wildlife-based enterprises;
- 4) To develop and implement mechanisms for addressing human-wildlife conflicts.
- 5) To strengthen collaboration, coordination and partnership with local governments, private sector, NGOs, local communities and other stakeholders in wildlife conservation initiatives;

- 6) To promote conservation education and awareness about wildlife (including climate change impacts on wildlife and human population, mitigation and adaptation measures); and
- 7) To mainstream local communities in wildlife crime management.

The **involvement of communities is also contained and elaborated on in the UWA Strategic Plans**. A key component of community engagement in Uganda has been the **revenue-sharing scheme** (see Text Box 1), which **redistributes 20% of park entry fees to villages adjacent to the parks**. The Uganda Wildlife Authority (UWA) also has a **resource access programme** which allows communities living adjacent to protected areas limited access to certain park resources, such as fish, grasses and firewood. Beehives are also allowed on protected land (Travers et al., 2017).

Biodiversity expenditure in Uganda increased when measured in nominal terms (NEMA, 2019b). The biodiversity expenditure review (BER) showed that Central Government appropriations for biodiversity increased from UGX 57.2 to 145.95 billion, between FY 2005/6 and 2014/15. The largest expenditure on biodiversity management was for tourism and wildlife management followed by the Agriculture Ministry (NEMA, 2019a). Whereas the magnitude of biodiversity expenditure increased in proportionate terms, biodiversity expenditure, as a proportion of the national budgetary expenditure decreased from 1.4% in 2005/6 to 0.9% in 2014/15 (NEMA et al. 2017b in NEMA, 2019b). Although the national budget expanded by 3.82 times between 2005/6 and 2013/14, the expenditure on biodiversity increased by 2.0 times (NEMA, 2019b). This decline in biodiversity expenditure is inconsistent with increased government expenditure on energy projects and transport infrastructure, and agricultural expansion, where heavy biodiversity loss occurred and thus restoration, mitigation and offset actions are required (NEMA, 2019b). As part of the implementation of NBSAP II, five new funds were established: one of which, the Uganda Biodiversity Trust Fund (UBTF), an independent conservation fund hosted by the Wildlife Conservation Society (WCS), has mobilized USD 100,000 from the US government since its launch in 2016 (NEMA, 2019a).



Text box 1

Revenue-sharing from protected areas in Uganda

The Uganda Wildlife Act Cap 200 (Wildlife Act section 69/2, under the establishment of the Wildlife Fund and also included in the Wildlife Act 2019), provides for the sharing of 20% of park entrance fees with local communities surrounding protected areas. **The main objective of revenue sharing is for the communities living adjacent to protected areas to derive benefits from tourism and conservation and thus be more committed to conservation.** The shared revenue is managed by the respective District Local Governments and is **used to fund livelihood and public goods projects decided upon by the beneficiary communities.** It has also been found that as a result of revenue-sharing, there was a

reduction in illegal activities, resulting in a positive impact on conservation and environmental management (MTWA, 2014). Communities also benefit directly from tourism through community-based tourism enterprise initiatives that have been established since 1998 under Uganda Community Tourism Association (UCOTA) and Community Based Tourism Initiative (COBATI). There are about 60 community initiatives under UCOTA.

UWA is piloting a conservancy concept in areas surrounding Kidepo Valley National Park, Murchison Falls National Park and Lake Mburo National Park in order to increase economic

benefits from wildlife to local communities and landowners through ecotourism.

Figure 1 shows the total revenues disbursed through the tourism-revenue sharing programme from 2005 to 2021 graphically, while Table 3 shows the breakdown per park, with Murchison Falls National Park receiving the highest amount over the period, followed by Bwindi Impenetrable National Park and Queen Elizabeth National Park. **A total of approximately USD 10 million has been paid since 2005.**



Sharing of 20% of park entrance fees with local communities

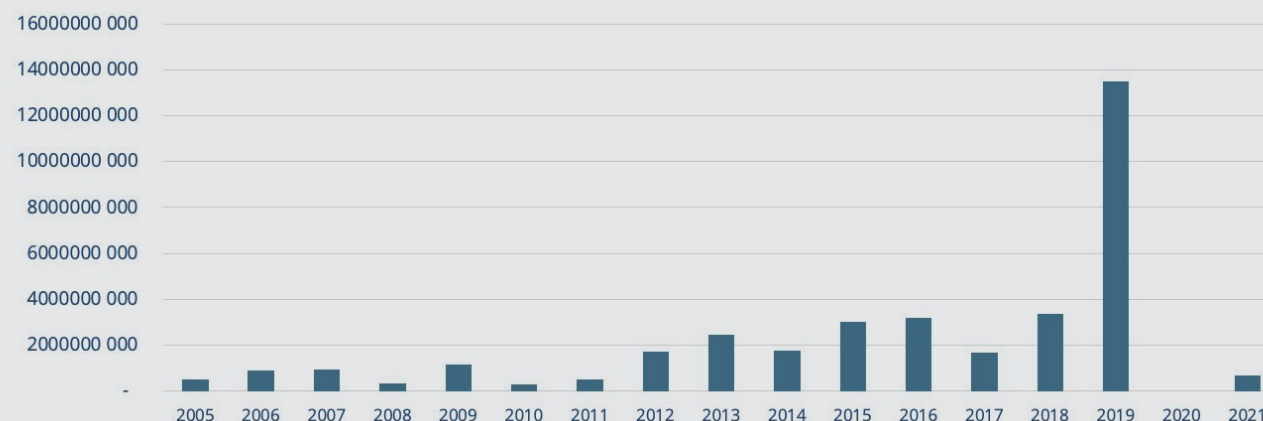


Main objective: communities to derive benefits from tourism and conservation



Reduction in illegal activities, resulting in a positive impact on conservation

Figure 1: Total revenues disbursed per year (2005 - 2021) (Ugandan Shillings)



Source: pers comm. UWA, August 2021

Table 3: Amount of revenue sharing disbursed (2005 - 2021) in Ugandan Shillings

Year	BINP	KNP	KVNP	LMCA	MENP	MFNP	QENP	TSWR	SNP	RMNP	MGNP	Total
2005	-	36 067 805	6 868 000	32 477 000	0	421 712 229	-	6 239 000	-	-	10 770 400	514 134 434
2006	316 480 000	0	0	221 849 000	15 000 000	0	331 306 747	-	-	-	-	884 637 753
2007	107 000 000	0	0	94 712 400	28 980 500	417 414 771	312 064 100	-	-	-	-	960 171 771
2008	-	112 932 951	0	60 634 236	0	107 700 000	-	-	1 500 000	52 834 800	18 634 375	354 236 362
2009	287 577 850	111 280 000	0	32 972 980	22 500 000	421 305 500	260 519 179	7 750 000	-	-	-	1 143 905 509
2010	100 004 000	0	0	177 294 500	0	-	-	-	-	-	-	277 298 500
2011	-	0	0	0	0	500 659 000	-	-	-	-	18 000 000	518 659 000
2012	661 774 809	0	0	234 465 229	48 381 864	0	619 500 000	-	-	143 897 100	-	1 708 019 002
2013	-	153 700 000	0	0	0	2 184 750 000	-	-	-	-	137 309 025	2 475 759 025
2014	500 241 012	0	62 863 000	455 957 607	0	0	728 359 212	-	-	-	-	1 747 420 831
2015	-	0	143 850 000	50 000 000	0	2 082 700 000	513 773 705	-	-	166 624 250	55 008 873	3 011 956 828
2016	-	0	-	0	-	2 275 900 000	907 328 137	-	-	-	-	3 183 228 137
2017	894 898 005	0	-	639 171 933	72000701	0	-	-	-	-	76 013 297	1 682 083 936
2018	0	435 414 515	428 185 240	634 178 736	0	1 877 960 000	-	-	-	0	0	3 375 738 491
2019	4 332 000 000	974 842 470	-	602 821 879	105 010 500	4 189 834 069	3 000 000 000	-	-	155 043 079	147 575 644	13 507 127 641
2020	-	-	-	-	-	-	-	-	-	0	-	-
2021	-	-	-	669 752 674	-	-	-	-	-	0	-	669 752 674
Total	7 199 975 676	1 824 237 741	641 766 240	3 906 288 174	291 873 565	14 479 935 569	6 672 851 080	13 989 000	1 500 000	518 399 229	463 311 614	36 014 129 894

Source: NEMA, 2019a; UWA, 2018; UWA, 2019, pers. comm. UWA, August 2021

Related to biodiversity financing, the goal of the **National Biodiversity Finance Plan (NBFP)** for Uganda is to achieve *"optimal and sustainable financing for biodiversity conservation and management attained by 2027/28"*. (NEMA, UNDP and Global BIOFIN, 2019).

Three objectives complement the goal of the NBFP (NEMA, UNDP and Global BIOFIN, 2019):

1. to develop and implement a biodiversity and ecosystem index and payments for ecosystem services;
2. to enhance the use of economic instruments as incentives for biodiversity conservation and management; and
3. to scale up innovative biodiversity management and conservation actions that enhance livelihoods and increase national revenue.

The eight finance solutions are (NEMA, UNDP and Global BIOFIN, 2019):

1. A national biodiversity and ecosystem index and biodiversity fiscal transfers
2. A national programme on payments for ecosystem services
3. Scaling up bottom-up enforcement for biodiversity and ecosystem management based on community regulatory systems and incentives model
4. Upgrading the ecotourism value chain for Ramsar sites and Kampala city and Mbarara municipality
5. Upgrading the value chain for organic agriculture, natural ingredient, cosmetics and pharmaceuticals
6. Rationalise and implement revised charge systems for biodiversity and ecosystem conservation and management
7. A financing model for biodiversity conservation for central forest reserves
8. Standardize and regulate implementation of biodiversity offsets

The unlocking and diversification of wildlife economy activities can also make a significant contribution as a finance solution. Wildlife economy activities can provide important financing to governments, communities and the private sector.

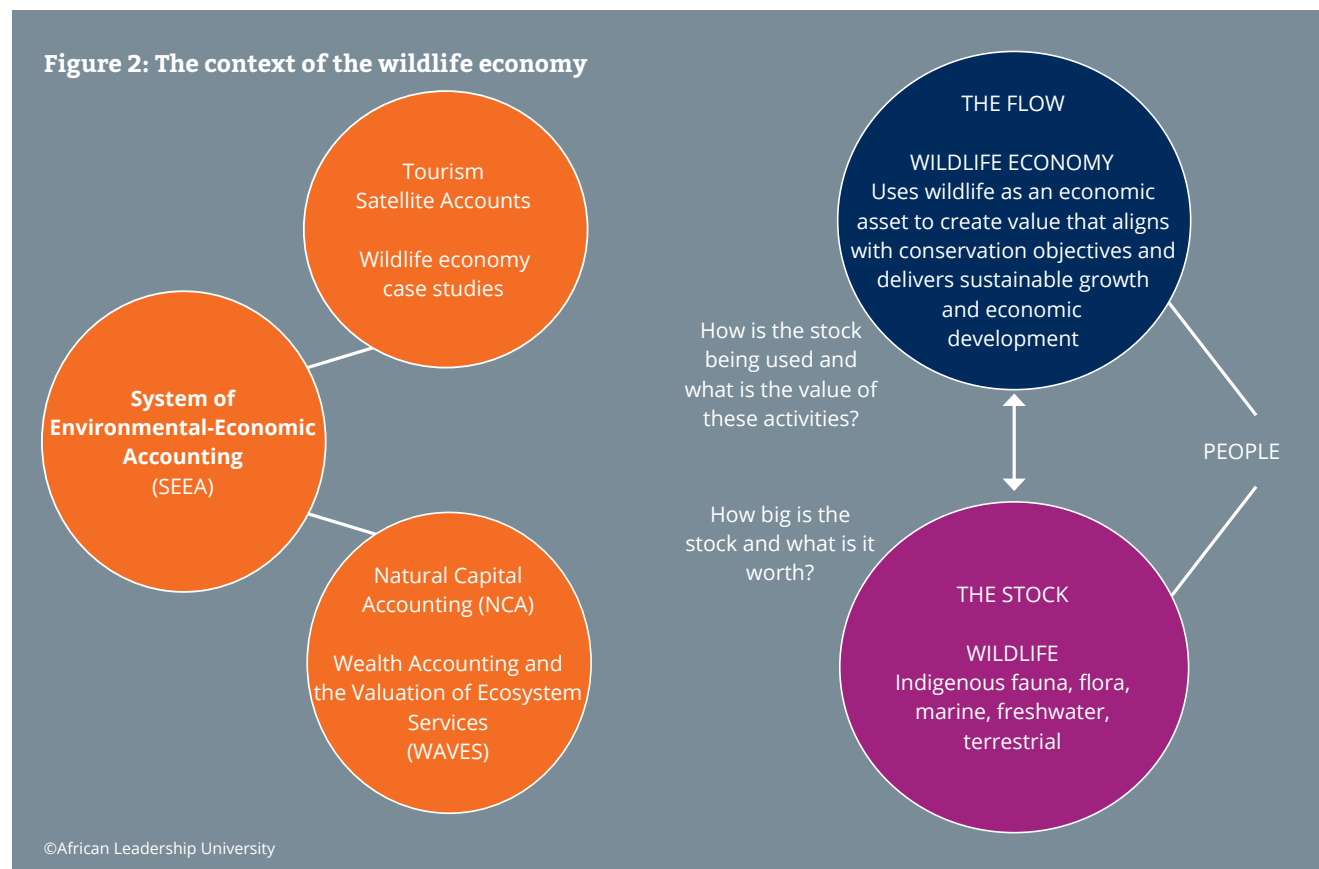
The NBFP (NEMA, UNDP and Global BIOFIN, 2019) highlights that biodiversity and ecosystem services (agriculture, forestry and fishing) although they are the mainstay of the economy have

been pushed to the background, due to the evolution of the economy. It also highlights that the **degradation of biodiversity and ecosystem services will lead to severe impacts on the national economy and subsistence livelihoods** (NEMA, UNDP and Global BIOFIN, 2019).

Figure 2 shows the linkages between Natural Capital Accounting (NCA) and the wildlife economy, where NCA looks more at the stock of natural resources (wildlife) and the wildlife economy analyses look at the flow of these activities, i.e. how are they being used.

Uganda published the world's first species diversity accounts

in March 2017 (WAVES, 2019). These experimental accounts built on the System of Environmental-Economic Accounting (SEEA) framework and generated a set of natural capital accounts to support improved management of biodiversity and to help monitor progress towards Aichi Biodiversity Targets and Sustainable Development Goals (SDGs) (WAVES, 2019). Also, in 2017, the Ministry of Water and Environment prepared preliminary forest accounts and a draft National Plan for Advancing Environmental Accounting was prepared in 2018, along with launching the first set of land and water accounts for the country in 2019 (WAVES, 2019). The land accounts show land use and changes in land cover associated with human activity such as agriculture, settlement, industry and natural



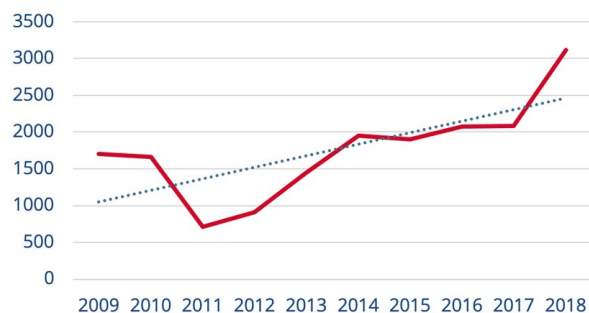
processes between 1990 to 2015 and found that the land cover for subsistence agriculture consistently increased while forest cover, particularly woodlands and natural forests declined (UBOS, 2019). The water accounts show the largest proportion of water is directly abstracted by households for own use, with agriculture being the largest economic activity extracting water (UBOS, 2019).

The main threats to wildlife conservation and biodiversity in Uganda are poaching, habitat fragmentation, degradation and loss, charcoal and firewood collection, climate change, invasive species, parasites and diseases, excessive harvesting of fauna and flora, plastic waste and pollution of water bodies and human-wildlife conflict (NEMA, 2019a; Rossi, 2018; UWA, 2018). The **underlying causes of these threats** include population growth, weak governance, limited opportunities for off-farm employment, poverty, lack of awareness and insecurity of land tenure (Anon, 2015a in Rossi, 2018). In terms of wildlife crime in Uganda, Travers et al. (2017) found that **commercial hunting for bushmeat was the most common wildlife crime** amongst households living adjacent to Murchison Falls PA (MFPA) and Queen Elizabeth PA (QEPA) and that most meat was sold locally to satisfy demand in villages near the protected areas. This highlights a potential opportunity for wildlife ranching to meet this demand legally.

The main drivers of poaching in Uganda are for sourcing meat, skins and other products for the domestic illegal market or for use in traditional rituals and African or Asian traditional medicine. (Rossi, 2018). Poaching for ivory and rhino horn is not a priority concern in Uganda, however the country is playing a **major role as a transit hub** for these products (Rossi, 2018).

A **major cost of conservation for local communities is human-wildlife conflict** which has had an increasing trend from 2009 to 2018 as shown in Figure 3, with the number of cases since 2009 having increased by 82% (UWA, 2020). Frequently reported species include elephant, hippo, buffalo, chimpanzee, crocodile and a few cats, which include lion, leopard, jackal and civet (UWA, 2020). The goal of the **National Strategy for Management of Human-Wildlife Conflicts (2020)** is to contribute to harmonious co-existence with wildlife, improved livelihoods and national development.

Figure 3: Trends in reported human-wildlife conflict (2009 - 2018)



Source: UWA, 2020

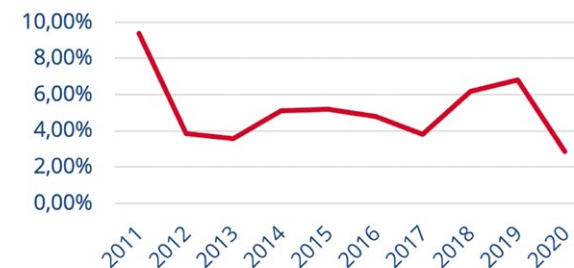
Socio-economic overview

Uganda is a low income country and the COVID-19 pandemic and subsequent lockdowns severely damaged Uganda's economy, with real GDP declining by 0.5% in 2020, after growing 7.5% in 2019 (AfDB, 2021). The **GDP per capita in 2019 was USD 932** (Uganda Bureau of Statistics (UBOS), 2021b). Tourism and hospitality were particularly hard hit by the global pandemic, but other sectors such as manufacturing and retail and wholesale trade were also affected (AfDB, 2021). Figure 4 shows the GDP growth rate for Uganda between 2011 and 2020 (World Bank, undated). The high GDP growth rate in 2011 resulted from a decade of strong growth (Reuters, 2011).

Despite huge improvements over the years Uganda remains one of the poorest nations in the world, with the poverty rate reducing from 56.4% in 1993 to 21.4% in 2016 (Development Initiatives, undated; World Bank, 2021b). The Gini coefficient for Uganda in 2016 was 42.8 and it has remained between 40 and 45 since 2005 (World Bank, undated).

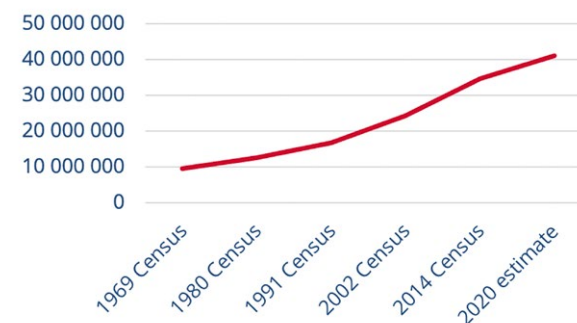
The **2020 estimate for the total population in Uganda is 41.1 million** (51% female: 49% male) (UBOS, 2021b), with a **population density (2018) of 213.09 people per km²** (World Bank, 2021a). Figure 5 shows the steadily growing population from 1969 to 2020. In 2020, the percentage of the total labor force who were unemployed was 2.44% (World Bank, 2021d). Over 80% of Uganda's population is based in rural areas where

Figure 4: GDP growth rate (2011 - 2020)



Source: World Bank, undated

Figure 5: Population in Uganda (1969 - 2020)



Source: UBOS, 2021a

very few alternative livelihoods exist outside of agriculture, forestry and fisheries (UNDP & NEMA, 2017). **Creating jobs is key to economic growth in Uganda: unlocking and diversifying the wildlife economy has a key role to play here.**

Uganda is ranked 142 out of 180 in terms of the **Perception of Corruption Index**, with a score of 27, where 0 is highly corrupt and 100 is very clean (Transparency International, 2020). The average regional score for sub-Saharan Africa since 2018 is 32/100 (Transparency International, 2020), indicating that Uganda has work to do in terms of perceptions as to the level of corruption in the country, which will impact on investment and the potential to unlock the wildlife economy.





Text box 2

Wildlife use rights in Uganda

The below use rights can be granted in any wildlife management area or any other area so declared, but not in a national park or some wildlife reserves (others do allow use).



A: Sport Hunting

Following the positive results of a pilot harvesting of impala carried out in 2000 that demonstrated how the generated revenue from the sale of hunting and trophy fees could incentivize conservation; UWA decided to extend the same approach by authorizing other farms/companies, and by adopting selective hunting of individuals past their reproductive age.



B: Farming

This refers to the rearing of wildlife in a controlled environment. The target species are ostrich, butterflies, and crocodiles.



C: Ranching

This type of animal rearing is usually done by large landholders, and examples of this type of wildlife use are Ziwa Ranch in Nakasongola (for the Southern White Rhino, *Ceratotherium simum simum*). There is a growing interest in this type of large game ranching, even if this is not yet well developed in Uganda.



D = Trade

This category covers both internal and external trade. Harvesting is permitted only for non-protected species for which wildlife user rights are granted, and it would require a use right certificate. A framework for regulating international trade is provided under CITES. UWA is the Scientific Authority giving the technical advice to the Management Authority on the trade of animals, and technical advice on plants is provided by the forestry sector.



E: Education

This includes using wildlife for educational or scientific purposes including medical experiments and developments. Some of the sites identified to be licensed as educational centres are: Kampala Snake Park, Kyahunje (Bunyonyi Island), Kavumba Recreation Centre, and Source of the Nile Recreational Centre.



F: General Extraction

This refers to the use of plants and animal parts in traditional medicine, which is well established in Uganda, but the extent of collection of wild animals and plants is not documented. It is unclear to what extent traditional medicine has contributed to the decline or extinction of wildlife as is evidenced by the presence of wild animals and plants in the local markets.

Regulatory framework of the wildlife economy

At a national level, Uganda has **extensive legislation relating to the regulation of the wildlife economy**. See Table 4 for a non-exhaustive list of specific national and regional legislation as well as other strategic plans and policies which provide a robust regulatory framework for the wildlife economy in Uganda. Text Box 2 describes wildlife use rights in Uganda. With regards to Use Right B: farming, there are also potential opportunities to expand this beyond the species indicated.

Institutions for managing the wildlife economy

Uganda has numerous institutions engaged in managing different aspects of the wildlife economy. Table 5 provides a non-exhaustive list of some of the main institutions.

The diversity of institutions, many with overlapping mandates, increases the complexity of managing the wildlife economy. It is **critical that overlapping mandates and conflicting policies, where applicable, are managed in order to streamline processes in unlocking the potential of the wildlife economy in Uganda and attracting greater investment in it**.

Wildlife economy activities in Uganda

Uganda already has a diversified wildlife economy, well supported by legislation and numerous institutions. There is, however, potential to grow and diversify the existing wildlife economy activities, as well as to unlock new activities. There was a large amount of data found for most of the existing wildlife economy activities, though the information was not centralized and was found in government, non-governmental and academic records, often not comparable, and with a large amount of data being quite old.

One of the main wildlife economy activities in Uganda is ecotourism, specifically gorilla tourism. This frequently draws people to the country, where they can then partake in other wildlife economy activities. The next sections look at the main wildlife economy activities in Uganda.

Sources: Moyini, Y. & Masiga, M. (undated) and A.K. Bintooro, Community Conservation Department, UWA, in litt., Uganda Wildlife Trafficking Stakeholder Workshop, August 2016; Rossi, 2018

Table 4: Regulatory framework governing biodiversity and the wildlife economy

Policy/legislation	Description	Source
The 1995 Constitution of the Republic of Uganda	Objective XIII of the 1995 Constitution of the Republic of Uganda provides for State protection of important natural resources such as land, water, wetlands, minerals, fauna and flora on behalf of the people of Uganda. The Constitution provides for creation and development of parks, reserves, recreation areas and conservation of natural resources by central and/or Local Governments under Objective XXVII. The same objective further obligates the state to promote the rational use of natural resources so as to safeguard and protect the biodiversity of Uganda. Under Article 237(b) of the Constitution, Government or a local government as determined by Parliament by law shall hold in trust for the people and protect natural lakes, rivers, wetlands, forest reserves, game reserves, national parks and any land to be reserved for ecological and touristic purposes for the common good of all citizens. Overall, it provides that the utilisation of natural resources of Uganda should be managed in such a way as to meet the development and environmental needs of the present and future generations of Ugandans.	UWA (2018). State of Wildlife Resources in Uganda 2018. Uganda Wildlife Authority (UWA), Kampala & Moyini, Y. & Masiga, M. (undated). Constitution available at https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/44038/90491/F206329993/UGA44038.pdf [Accessed 1st September 2021].
Uganda Vision 2040	Uganda Vision 2040 provides development paths and strategies to operationalize Uganda's Vision statement which is "A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years."	Available at http://www.npa.go.ug/wp-content/uploads/2021/02/VISION-2040.pdf [Accessed 1st September 2021].
Agenda 2063	Africa's blueprint and master plan for transforming Africa into the global powerhouse of the future. It is the continent's strategic framework that aims to deliver on its goal for inclusive and sustainable development.	African Union, undated, available at https://au.int/en/agenda2063/overview {Accessed 25th August 2021}.
The Fish Act, Cap 197, 2000	Regulates the fishery sector. It establishes restrictions concerning fishing methods and regulating activities in water, especially those water bodies within PAs.	Rossi, 2018. Act available at https://www.ecolex.org/details/legislation/fish-act-cap-197-lex-faoc096142/ [Accessed 1st September 2021].
Uganda Wildlife Act (Cap. 200) (1996) consolidated and reprinted in 2000	The Uganda Wildlife Authority was established in 1996 together with the enactment of the (original) Wildlife Statute that became an Act in 2000. The Act deals with all major aspects concerning wildlife protection, hunting, capturing, killing, trade and protection inside and outside protected areas. The Act introduces an approach whereby wildlife user rights are identified according to six main categories (section 29 of the Act) (See Text Box 2). An important feature of the Act is also a recognition of the need to provide incentives to local communities and share generated revenues towards wildlife conservation (Wildlife Act section 69/2).	Rossi, 2018. Available at https://www.ecolex.org/details/legislation/uganda-wildlife-act-1996-cap-2000-lex-faoc009000/ [Accessed 1st September 2021].
Uganda Wildlife Act, 2019	To provide for the conservation and sustainable management of wildlife; to strengthen wildlife conservation and management; to continue the existence of the Uganda Wildlife Authority; to streamline the roles and responsibilities of institutions involved in wildlife conservation and management; to continue the existence of the Wildlife Fund; to repeal the Uganda Wildlife Act, Cap. 200 and for related matters.	Available at https://www.informea.org/sites/default/files/legislation/Wildlife%20Act%2C%202019%20-Gazetted%20Version.pdf [Accessed 25th August 2021].
Animal Breeding Act, 2001	Created to establish the National Animal Genetic Resources Centre and Databank, to provide for the promotion, regulation and control, marketing, import and export and quality assurance of animal and fish genetic materials and generally to provide for the implementation of the National Breeding Policy in Uganda.	Moyini, Y. & Masiga, M. (undated). Act available at http://extwprlegs1.fao.org/docs/pdf/uga119210.pdf [Accessed 1st September 2021].
Uganda Wildlife Research and Training Institute (WRTI) Act, 2015	To establish the Uganda WRTI; to provide the objects, functions, powers and management of the Institute and for related matters.	Available at http://uwrti.ac.ug/wp-content/uploads/2020/03/Uganda-Wildlife-Research-and-Training-Institute-Act-2015.pdf [Accessed 25th August 2021].

Table 4: Regulatory framework governing biodiversity and the wildlife economy – continued

Policy/legislation	Description	Source
National Forestry and Tree Planting Act, 2003	States that all forest biological resources and their derivatives, whether naturally occurring or naturalised within the forest, shall be conserved and managed for the benefit of the people of Uganda. The Act also prohibits several illegal activities in forest reserves or community forests: including removal of forest; clearing or occupying land; livestock farming; recreational, commercial, residential, industrial or hunting purposes; collection of biotic and abiotic specimen; or construction of infrastructure.	Moyini, Y. & Masiga, M. (undated). Act available at https://www.nfa.go.ug/images/National_Forestry_and_Tree_Planting_Act_2003.pdf [Accessed 1st September 2021].
Uganda Wildlife Conservation Education Centre Act, 2015	To establish the Uganda Wildlife Conservation Education Centre; to provide for the board of trustees to the Centre; to provide for the promotion, conservation and sustainable development of wildlife resources through wildlife conservation education and wildlife breeding; and to provide for related matters.	Available at https://www.ecolex.org/details/legislation/uganda-wildlife-conservation-education-centre-act-lex-faoc180678/ [Accessed 25th August 2021].
The National Environment Act, 2019	To repeal, replace and reform the law relating to environmental management in Uganda; to provide for the management of the environment for sustainable development; to continue the National Environment Management Authority as a coordinating, monitoring, regulatory and supervisory body for all activities relating to environment; to provide for emerging environmental issues including climate change, the management of hazardous chemicals and biodiversity offsets; to provide for strategic environmental assessment; to address environmental concerns arising out of petroleum activities and midstream operations, to provide for the management of plastics and plastic products; to establish the Environmental Protection Force; to provide for enhanced penalties for offences under the Act; to provide for procedural and administrative matters; and for related matters.	Available at https://nema.go.ug/sites/all/themes/nema/docs/National%20Environment%20Act,%20No.%205%20of%202019.pdf [Accessed 25th August 2021].
Uganda Forestry Policy, 2001	Promotes the idea of an inclusive and sector-wide policy, supporting the intelligent use of forest resources for economic development, poverty alleviation, and environmental stability. The Policy is articulated into 11 policy statements addressing various aspects of the forestry sector such as the management of forests on government and private land, commercial plantations, forest biodiversity, and watershed management, among the others.	Rossi, 2018; Policy is available at https://www.nfa.go.ug/images/UgandaForestryPolicy2001.pdf [Accessed 1st September 2021].
Uganda Apiculture Export Strategy, 2005	Focuses on developing and marketing bee products especially in the EU and the USA. The major goals of the strategy include: advocate for and put in place a sector development enabling environment and policy; strengthening the private sector institutional framework involved with the development of the apiary industry; increasing the technical capacity of the sector to meet market place requirements; attracting the necessary investment in the sector; modernizing the production and processing systems along the entire value chain; and promoting the products in the regional and international markets mainly by branding Uganda as a source of natural and organic specialty honey.	Kalimo Trust, 2012
Biotechnology and Biosafety Policy, 2008	This policy was introduced as a commitment to the Cartagena Protocol on Biosafety which was ratified on 30th November 2008. Uganda established the National Biosafety Committee (NBC) in 1996.	NEMA, 2019
The National Coffee Policy, 2013	Guides the Ugandan coffee sector. The key policy goals are 1) increased productivity; 2) coffee area expansion; and 3) coffee business environment improvement. The policy also aims to diversify coffee markets, promote sustainable production systems and value addition, increase domestic consumption, and improve Uganda's coffee research capacity.	Available at https://ugandacoffee.go.ug/sites/default/files/Resource_center/National-Coffee-Policy.pdf [Accessed 31st August 2021].
Wildlife Policy, 2014	The Wildlife Policy 2014 provides for sustainable management and development of wildlife resources in a manner that contributes to the development of the nation and the well-being of its people. The theme of the policy is “enhanced wildlife contribution to national growth, employment and socio-economic transformation for prosperity.”	UWA (2018). State of Wildlife Resources in Uganda 2018. Uganda Wildlife Authority (UWA), Kampala.
Uganda Wildlife Authority (UWA) Community Conservation Policy, 2019	The goal of the Policy is to achieve community appreciation and long-term support for conservation through enhanced institutionalised implementation of Community Conservation programmes, strategies and activities.	https://pubs.iied.org/sites/default/files/pdfs/migrate/G04469.pdf

Table 4: Regulatory framework governing biodiversity and the wildlife economy – continued

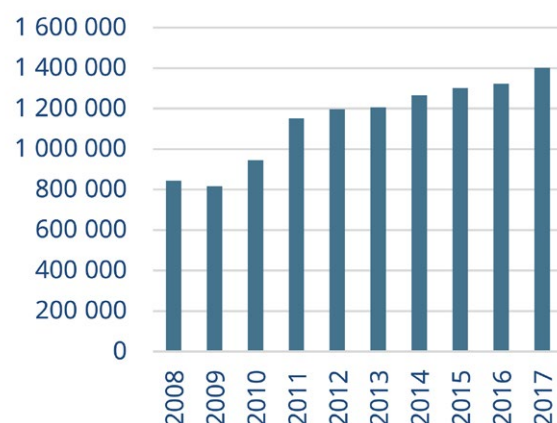
Policy/legislation	Description	Source
NDP III 2020/21-2024/25, 2020	The National Development Plan (NDPIII) is the third in a series of six NDPs that will guide the nation in delivering the aspirations articulated in Uganda Vision 2040. The overall goal of NDPIII macroeconomic management is to accelerate and sustain inclusive economic growth, while maintaining macroeconomic stability and debt sustainability.	Available at http://www.npa.go.ug/wp-content/uploads/2020/08/NDPIII-Finale_Compressed.pdf [Accessed 25th August 2021].
Tourism Sector Development Plan (TSDP), 2015	The vision of the tourism sector is sustainable tourism, wildlife and cultural heritage contributing to the transformation of the Ugandan society from a peasant to a modern and prosperous one.	Available at http://npa.go.ug/wp-content/uploads/2016/08/Tourism-Sector-Development-Plan-Final-13-May-2015.pdf [Accessed on 25th August 2021].
Uganda Wildlife Authority (UWA) Strategic Plan 2020-2025	The overall goal of the Strategic Plan is “Sustainably managed wildlife areas that are providing enjoyment, supporting community livelihoods and contributing to the overall national development agenda for Uganda.”	Available at https://www.ugandawildlife.org/phocadownload/conservation-publications/Strategic-and-management-plans/Strategic_Plan%20_2015-2020.pdf [Accessed 25th August 2021].
National Strategy for Management of Human-Wildlife Conflict, 2020	To contribute to harmonious coexistence with wildlife, improved community livelihoods and national development. The key components of this include: conflict mitigation; capacity development; community livelihoods; education and awareness; compensation; research and monitoring; coordination and collaboration; financial resources and monitoring and evaluation.	National Strategy for Management of Human-Wildlife Conflicts (2020). Uganda Wildlife Authority (UWA), Kampala.
Uganda National Bamboo Strategy and Action Plan, 2019-2020	The Strategy is designed to improve the livelihoods of Ugandans, especially those living in rural areas, through raising the incomes of the poor people, increasing the number of jobs and enhancing the contribution of bamboo forests to Uganda's economic development. It is aimed at propelling green economy development, achieving the domestic and international development targets and commitments of the Government of Uganda.	Ministry of Water and Environment of Uganda & the International Bamboo and Rattan Organisation (INBAR), 2020
East African Community (EAC) Treaty, 1999	The EAC now has six Partner States (Burundi, Kenya, Rwanda, South Sudan, Tanzania and Uganda) with a mission to widen and deepen economic, political, social and cultural integration in order to improve the quality of life of the people of East Africa. This includes commitments under the Treaty “to develop a collective and co-ordinated policy for the conservation and sustainable utilisation of wildlife and other tourist sites in the Community....” EAC's Strategic Plan of Wildlife Management includes an aim “To ensure that wildlife is a key driver in the regional economy.”	https://www.eac.int/overview-of-eac http://www2.ecolex.org/server2neu.php/libcat/docs/TRE/Full/En/TRE-001329.pdf
East African Community (EAC) Protocol on Environment and Natural Resources Management, 2006	This protocol obligates Uganda to cooperate with partner states and promote sustainable management of wildlife resources in partnership with the local communities.	Available at http://repository.eac.int/bitstream/handle/11671/1638/EAC%20PROTOCOL%20ON%20ENVIRONMENT%20AND%20NATURAL%20RES%20MGMT.pdf?sequence=1&isAllowed=y [Accessed 1st September 2021].
Greater Virunga Transboundary Collaboration (GVTC) Treaty, 2015	The objectives of the collaboration are: <ul style="list-style-type: none"> • Collaboration for improved transboundary conservation of natural resources • Ensuring improved and coordinated landscape level planning and management of natural resources • Sharing of skills and expertise • Benefit and cost sharing across borders • Ensuring all encompassing research and information management. 	GVTC, 2021



Table 5: Institutions responsible for supporting wildlife economy activities in Uganda

Institution	Description	Source
Ministry of Tourism, Wildlife and Antiquities (MTWA)	MTWA was created in 2011 with the mandate of overseeing tourism sector policy, planning, monitoring, and coordination. MTWA also houses several statutory bodies, including Uganda Tourism Board (UTB) and Uganda Wildlife Authority (UWA).	https://www.tourism.go.ug ; World Bank, 2020
Ministry of Water and Environment (MWE)	The Ministry of Water and Environment (MWE) was established in 2007, from the then Ministry of Water, Lands and Environment. It has the overall responsibility of developing, managing, and regulating water and environment resources in Uganda.	https://www.mwe.go.ug
National Environment Management Authority (NEMA)	The National Environment Management Authority (NEMA) is a semi-autonomous institution, established in May 1995, as the principal agency in Uganda, charged with the responsibility of coordinating, monitoring, regulating and supervising environmental management in the country. NEMA spearheads the development of environmental policies, laws, regulations, standards and guidelines; and guides Government on sound environmental management in Uganda.	https://www.nema.go.ug
Uganda Wildlife Authority (UWA)	UWA is responsible for overseeing the management of National Parks, Wildlife Reserves, Community Wildlife Management Areas and Wildlife Sanctuaries.	UWA (2018)
National Forestry Authority (NFA)	NFA is mandated to manage Central Forest Reserves (CFRs). The District Forestry Services oversee the management of Local Forest Reserves. NFA is responsible for coordinating the management of forest resources and areas declared as forests and forest reserves and the biological resources in them.	UWA (2018) and Moyini, Y. & Masiga, M. (undated).
Uganda Tourism Board (UTB)	UTB was created in 1994 and is charged with marketing and promotion, market research, product development, investment promotion, and quality assurance.	World Bank, 2020; https://utb.go.ug
Uganda National Apiculture Development Organization (TUNADO)	TUNADO is the umbrella organization that coordinates all activities relating to the honey value chain in the apiculture sub-sector. It was established with the mandate of government as the national apex body responsible for coordinating all stakeholders within the apiculture sector in Uganda. Some of the stakeholders include; Uganda Honey Bee Keepers Association (which is the largest producer), IRDI, Kabarole Beekeepers Association (KBA), Lira Beekeepers Associations, Hoima district Entomology department, Nakasongola district Entomology department, Mbarara district Entomology department and Soroti district Entomology department.	Kilimo Trust, 2012; http://tunadobees.org
National Agricultural Advisory Services Programme (NAADS)	Provides extension services to farmers and inputs such as improved hives, especially the Kenya Top Bar hives.	Kilimo Trust, 2012; https://naads.or.ug
Department of Fisheries Resources (DFR) under the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)	Is the competent authority with the responsibility of inspection, certification and approval of aquaculture establishments and related practices. The DFR is mandated to promote, guide and support public and private sector partners involved in fisheries and aquaculture activities in sustainable development as well as responsible for setting and enforcing regulations and standards for practices on fisheries and aquaculture (MAAIF 2012). The DFR also provides services such as technical back-up associated with fisheries and capacity building for Local Governments; information provided for all stakeholder groups; creation of funding strategies for sector development; ensuring sustainable resource utilization through good fisheries policy and equitable legal basis for sustainable fisheries and aquaculture management (FAO 2004-2020).	Taken from Adeleke et al., 2021
Uganda Coffee Development Authority (UCDA)	UCDA is a statutory body established by an Act of Parliament; Uganda Coffee Development Authority Statute 1991 as amended 1994 CAP 325 under the laws of the Republic of Uganda. It is a government agency mandated to promote and oversee the development of the entire coffee industry through research, quality assurance and improved marketing.	UCDA, undated; https://ugandacoffee.go.ug
Uganda Investment Authority (UIA)	Is responsible for providing information and streamlining the process of investing in Uganda. It provides investors and potential investors with the prospects that exist in several industries include the wildlife sector.	Moyini, Y. & Masiga, M. (undated); https://www.ugandainvest.go.ug
Uganda Wildlife Conservation Education Centre (UWEC)	A centre established for wildlife rescue, treatment of injured and sick animals, wildlife quarantine services; supporting species recovery and conservation education.	https://uwec.ug
Uganda Wildlife Research and Training Institute (WRTI)	Vision: A sustainable wildlife industry, based on professional management, informed by research and training to address the ever-evolving challenges. Mission: To coordinate, promote and undertake wildlife management oriented research that feeds into wildlife management; and spearhead training of professionals and practitioners in Uganda's wildlife-based industry.	http://uwrti.ac.ug

Figure 6: International visitor arrivals (2008-2017)



Sources: UBOS 2019 Statistical Abstract, UNWTO Barometers (2010–14) in World Bank, 2020



Tourism

Tourism exports are important from an economic policy perspective, as they provide foreign exchange earnings and contribute positively to the balance of payments (World Bank, 2020). Tourism exports are also closely linked to the hospitality sector, which is important in terms of the informal service economy, which is heavily dominated by women and can, therefore, provide employment opportunities for groups who might otherwise struggle to find employment (World Bank, 2020). **The extensive value chains and multiplier effects of tourism** are particularly important in terms of wildlife-based tourism, which generally takes place in remote rural areas, where there are few alternative income or employment opportunities. The COVID-19 pandemic has highlighted the extent of these multipliers and value chains in terms of the impact that a complete halt in tourism has had: see Text Box 3.

Table 6: Tourism statistics for Uganda (2019 & 2020)

Statistic	2019	2020	Source
Contribution of travel and tourism to GDP	6.2% of total economy (USD 2.0 million)	2.5% of the total economy (USD 798.1 million)	WTTC, 2021
Contribution of travel and tourism to employment	589.3 (000s) jobs – 3.6% of total employment	386.2 (000s) – 2.4% of total employment	WTTC, 2021
International visitor impact	17.9% of total exports (USD 1.170 million)	5.5% of total exports (USD 306.9 million)	WTTC, 2021
Inbound arrivals	28% rest of the world; 30% from Rwanda; 26% from Kenya; 6% from DRC; 6% from USA and 5% from Tanzania	27% rest of the world; 29% from Rwanda; 29% from Kenya; 6% from DRC; 5% from Tanzania & 5% from USA	WTTC, 2021
Leisure spending	87%	91%	WTTC, 2021
Domestic spending	29%	48%	WTTC, 2021
PA visitation	The PA visitation for FY 2018/19 was recorded at 332,197 leading to an increment of 27,315 visitors (9%) as compared to 304,882 visitations in FY 2017/18	In calendar year 2020, there were 101,331 visitors to national parks	UWA annual report 2019; Ministry of Tourism, Wildlife and Antiquities, 2021b

According to the Ministry of Tourism, Wildlife and Antiquities (MTWA), (2018b), the **private sector plays a significant role in the development and management of the tourism sector** and thus their participation in governance and regulation of the sector is paramount. The Ministry and Agencies coordinate with the private sector through the Uganda Tourism Association (UTA) which includes the membership of Uganda Hotel Owners Association (UHOA), Hotel and Catering Association of Uganda (HCAU), Uganda Community Tourism Association (UCOTA), Uganda Safari Guides Association (USAGA), The Uganda Travel Agents Association (TUGATA), and the Association of Uganda Tour Operators (AUTO) (MTWA, 2018b). MTWA and its related institutions are subject to the Tourism Act (2008) and the Uganda Tourism Masterplan (2014–24), the Wildlife Policy (2014) and the Wildlife Act (2019). The Tourism Masterplan aims to double tourism revenues, increase tourism jobs by 50 percent, and more than double arrivals by 2024.

The third Uganda National Development Plan (NDPIII), which covers the period of 2020–21 to 2024–25, **identifies tourism as one of five priority sectors** and sets the following five-year goals (World Bank, 2020):

- Increasing tourism revenues from USD 1.6 billion to USD 3 billion;
- Increasing the number of tourism jobs from 667,000 to 1,100,000;
- Increasing tourism revenues per visitor from USD 1,036 to USD 1,500;
- Increasing the number of international tourist arrivals from the US, Europe, and China from 210,000 to 500,000; and
- Increasing the proportion of leisure to total tourists from 20.1% to 30%.

In terms of international tourism arrivals, they have been overall, pre-COVID, increasing year on year since 2008. Figure 6 shows international tourism arrivals from 2008 to 2018.



Text box 3

Impact of COVID-19 on tourism in Uganda

Tourism came to a standstill on March 21, 2020 when Uganda officially closed all of its borders. A business survey conducted by the Uganda Bureau of Statistics (UBOS) in March and April 2020 showed the following:

- Earnings of accommodation and food service establishments in April decreased by 70% from the previous year. The biggest losses were posted by establishments located near national parks.
- The survey also found that approximately 30% of accommodation and food service establishments had closed their doors and 77% had laid off staff.
- A May 2020 survey conducted by the Association of Uganda Tour Operators (AUTO) found that 88% of tour operators were unable to pay their workers and 38% anticipated filing for bankruptcy. Business has also completely come to a halt for community tourism enterprises and tour guides.

Other impacts of COVID-19 on tourism included:

- 1 million expected loss in foreign tourists
- 7/10 jobs have been lost in tourism
- 8/10 hotel businesses registered cancellations in bookings
- 448,996 hotel room bookings were cancelled between March and June 2020
- 9/10 tour businesses registered cancellations in bookings

The loss in tourist arrivals would translate into loss in foreign exchange earnings of up to USD 1.06 billion (UGX 3.91 trillion in 2020). Losses due to booking cancellations just in the months of March to June 2020 were estimated at USD 367.2 million (UGX 1.37 trillion), placing tremendous pressure on tourism entities to refund clients, especially when some of these funds could have already been spent on paying other service providers along the tourism value chain.

The hotel sector was projected to lose USD 0.50 billion in revenue by December 2020 as a result of COVID-19. Tour business revenues of over USD 30.4 million (UGX 0.11 trillion) were lost as a result of COVID-19 in the period March 2020 through to June 2020 and it was **projected that the Tour Business will lose up to USD 0.35 billion by December 2020 as a result of COVID-19.**

The average number of workers employed in the tourism industry dropped from 18 workers in January 2020 to only 2 workers per establishment in June 2020. This represents **a loss of 74.4% of jobs in the tourism sector.** The hotel industry that employed an average of 18 workers had to downsize to at least an average of 5 workers per establishment, a reduction of 72.2% in jobs in the hotel sector. Employment in tour and travel agencies had declined by 97.1 percent by June 2020 as literally all the tour guides/agents were asked to take unpaid leave.

COVID-19 severely impacted on visitation to national parks, with visitation in 2020 being 101,331 visitors, one third of the 323, 861 visitors in 2019. Uganda thus lost revenues from over 220,000 potential visitors in 2020. There was a 72.2% decline in foreign non-residents in 2020. There was a decline in all parks, but the highest declines were in Rwenzori Mountain National Park (81%) and Bwindi Impenetrable National Park (73%).

The immediate COVID-19 response suggested in the World Bank (2020) report included:

- **Creating a Tourism Sector Observatory** to regularly measure the performance of businesses along the tourism value chain.
- **Conduct visitor surveys to track sentiments after the tourism sector reopening** to understand evolving traveller profiles, patterns, and sentiments regarding

relevant elements of the travel experience such as hygiene protocols, immigration procedures, and tourism business preparedness.

- **Expand market intelligence capabilities and efforts** including the collection of key statistics and trends in target countries and market segments, data from competitors, and information about relevant marketing channels.

According to the World Bank (2020), **the recovery and further development of the tourism sector in Uganda will depend upon key policies and institutions of government.**

In addition to the above, **the World Bank (2020) report provided the following tourism policy recommendations:**

- Publish timely tourist arrivals data;
- Conduct visitor surveys more regularly, strengthen sampling, and disseminate results widely;
- Support tourism product development, whether in the commercial or community sectors;
- Support product innovation in the tourism sector;
- Develop a tourism marketing and promotion strategy: build a tourism brand for Uganda;
- Broaden digital marketing and assist SMEs to participate in this endeavour;
- **Invest in the wildlife resource and protected areas,** including increased financing for UWA;
- Facilitate investments in the domestic tourism market; and
- Create a forum for regular public-private dialogue on the development of the sector.

Sources: Ministry of Tourism, Wildlife and Antiquities, July 2020 & 2021a; World Bank, 2020

Table 6 shows various tourism statistics for Uganda in 2019 and 2020. The majority of these statistics are for tourism as a whole, though given that 25% of tourists are leisure tourists (World Bank, 2020), and a number of these will visit one or more of the national parks, tourism as a whole depends, to some extent, on wildlife.

According to the World Bank (2020), in 2019 leisure tourists accounted for 25% of all tourists (up from 21% in 2012) and constituted the largest segment of travellers. The next largest groups are tourists visiting family and friends with 24% in 2019 (up from 18% in 2012), followed by business travellers, with 19% in 2019 (down from 32% in 2012), and travellers attending meetings or conferences with 13% (the same percentage in 2012 and 2019) (World Bank, 2020). According to the World Bank (2020) report, the large drop in the percentage of business travellers could be explained by the introduction of the new 'Education' category of recording travellers, and the increase in leisure tourists suggests a successful promotion of Ugandan nature tourism.

In 2019, **leisure tourists had the highest value added, highest value of tourism exports and the highest value added as a percentage of GDP** compared to all other traveller types (World Bank, 2020), highlighting the importance of this traveller type, a large percentage of whom are nature-based travellers.

According to the World Bank (2020) as **leisure tourists spend the most per visit and are also the tourist type most influenced by government policy**, it is important to look at the impact of an increase in leisure tourists to Uganda would be: see Table 7. The table shows that adding an additional 100,000 leisure tourists would increase tourism exports by USD 98 million (or 1.5% of 2019 exports), and generating additional value added in the range of 0.4 percent to 0.9 percent of GDP (World Bank, 2020). The second simulation showed that if each tourist in 2019 had spent one more night in Uganda, this would increase tourism exports by USD 67 million, equalling one percent of total exports and additional value added in the range of 0.3 percent to 0.7 percent of GDP (World Bank, 2020).

The World Bank (2020) report also shows that overall **1 USD of tourist exports created between USD 0.9 (direct + indirect effects) and USD 2.5 (direct + indirect + induced effects) of value added**, i.e. the multiplier was between 0.9 and 2.5. This was found to be the same for both years that the Tourist Expenditure and Motivation Survey was conducted and all tourist types except for leisure tourists where the multiplier was found to be between 0.9 and 2.4 (World Bank, 2020). This multiplier is slightly higher than the corresponding multiplier range of 0.8 to 2.3 for Uganda's overall export basket, meaning that **tourism exports are closely linked to the rest of the Ugandan economy and, therefore, that tourism exports benefit the entire Ugandan economy** (World Bank, 2020). Text Box 4 provides more information from the World Bank (2020) report.

Table 7: Leisure and all tourism exports and total economic activity of tourists in 2019 (absolute values in constant 2019 USD)

	Leisure tourists	All tourists
Single tourist		
Tourism exports	981	713
All tourists		
Number of tourists	125,800	603,800
Tourism exports	123 million	431 million
Tourism exports % exports	1.8%	6.3%
Direct, Indirect and induced effects		
Value added	301 million	1,075 million
Value added % GDP	1.2%	3.1%
Direct and indirect effects		
Value added	109 million	387 million
Value added % GDP	0.4%	1.1%

Source: World Bank, 2020

Table 8: Two different tourism scenarios and their impact on the economy

	100,000 additional leisure tourists	1 additional night for all tourists
Tourism Exports		
Additional tourism exports	98 million	67 million
Additional tourism exports (% of exports)	1.5%	1.0%
Direct, indirect and induced effects		
Additional value added	240 million	166 million
Additional value added % of GDP	0.9%	0.7%
Direct and indirect effects		
Additional value added	87 million	66 million
Additional value added % GDP	0.4%	0.3%

*Value added in constant 2019 USD & relative to 2019 exports & GDP.

** Note that the additional night is for all tourists, not only leisure tourists.

Source: World Bank, 2020: 37



Text box 4

Statistical and Economic Analysis of Uganda's Tourism Expenditure and Motivation Survey 2019

The Statistical and Economic Analysis of Uganda's Tourism Expenditure and Motivation Survey 2019 (World Bank, 2020) showed that in 2019, 52% of tourists to Uganda came from African countries, increasing from 47% in 2012, while Europe accounted for 20% and North America 14%. Leisure tourists increased from 21% of the sample in 2012 to 25% in 2019 (from 89,000 to 126,000 tourists) and now form the largest share of tourists, followed by tourists visiting friends and relatives (VFR) (18% in 2012 and 24% in 2019). The increase in leisure tourists may reflect successful promotion of Uganda nature tourism in the intervening years.

The average expenditure per tourist while in Uganda decreased very slightly from USD 994 in 2012 to USD 897 in 2019 (all dollar figures are in constant 2019 dollars: the difference is not significant owing to the rough inflation adjustment made in the study, using changes in the price level of aggregate gross domestic product (GDP)). Of the different categories of tourists, **the largest expenditures per person were made by leisure tourists, amounting to USD 1,146 in 2012, and USD 1,091 in 2019.**

The analysis showed that **tourist exports amounted to USD 431 million in 2019, representing 6.3% of total exports**, compared with USD 374 million in 2012, representing 9.4% of total exports. **Between 2012 and 2019 tourist exports grew by 15.2%.** The estimated contribution of foreign tourists to GDP lay in the range of 1.3% to 3.7% of GDP in 2012, compared with 1.1% to 3.1% of GDP in 2019. Wages for skilled labour amounted to 19% of the value add generated by tourist expenditures in 2012, compared with an 8% share for unskilled labour.

Source: World Bank, 2020



In 2019, 52% of tourists to Uganda came from African countries



Leisure tourists increased to 25% in 2019



The average expenditure per tourist in 2019 was USD 897



Between 2012 and 2019 tourist exports grew by 15.2%



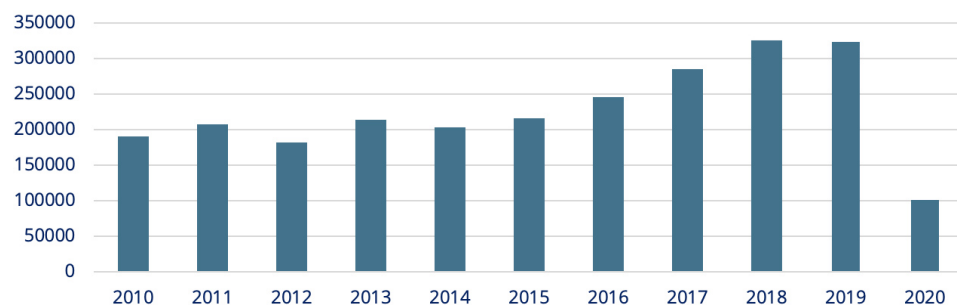
Ecotourism

According to the Ministry of Tourism, Wildlife and Antiquities (2021b) **visitation to national parks and wildlife reserves had been steadily increasing since 2014**, but was heavily hit by the COVID pandemic in 2020: see Figure 7. It is important to note that the revenues received by the Uganda Wildlife Authority for park entrance fees, concession fees, activity fees, etc. are a small percentage of the revenues earned as a result of the wildlife in Uganda. The revenues earned and employment created by the flights, accommodation, food, transport, etc. for visitors to national parks are all related to tourists coming to see wildlife in Uganda.

Prior to the COVID-19 pandemic, the positive trend in visitor numbers was attributed to (UWA, 2019):

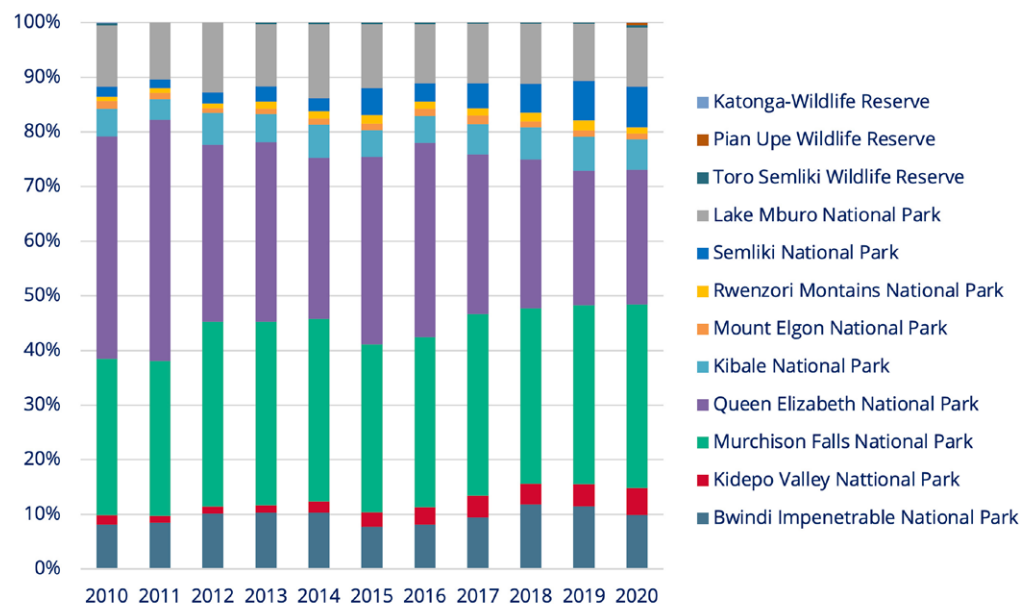
- **increased promotion and marketing of UWA products** in international, regional and local markets, through various platforms such as exhibitions, print media, TV, radio, and digital platforms;
- **Stronger partnerships with other tourism stakeholders** in the marketing of UWA products and services;
- The **collaborative sale and marketing of UWA products and services** between UWA and government Ministries, Departments and Agencies (MDAs) such as MTWA, Uganda Tourism Board (UTB), Parliament, foreign missions and embassies as well as collaboration with private sector stakeholders such as the Association of Uganda Tour Operators (USAGA), Uganda Safari and Guides Association (USAGA), UWA concessionaires, leisure activity providers, etc.;
- **Introduction of incentives by UWA**, such as gorilla and chimp complimentary permits to UTB and Association of Uganda Tour Operators (AUTO) for familiarisation trips for marketing purposes;
- **Improved customer care within UWA and the tourism industry** at large through improved processes and continuous training;
- **Introduction of four more gorilla groups** namely Christmas, Katwe, Mucunguzi and Rwigy;
- The **newly developed Sebwe and Bughalista tourism trails** and the introduction of the UWA mountain climbing rate of USD 50, USD 50 and UGX 50,000 for Foreign Non-Residents, Foreign Residents and EAC respectively which attracted more clients;
- The **discontinuation of fees for accessing the Sempaya Hot Springs** has immensely increased the number of visitors in the PA especially school groups.

Figure 7: Visitation to national parks and wildlife reserves (2010-2020)



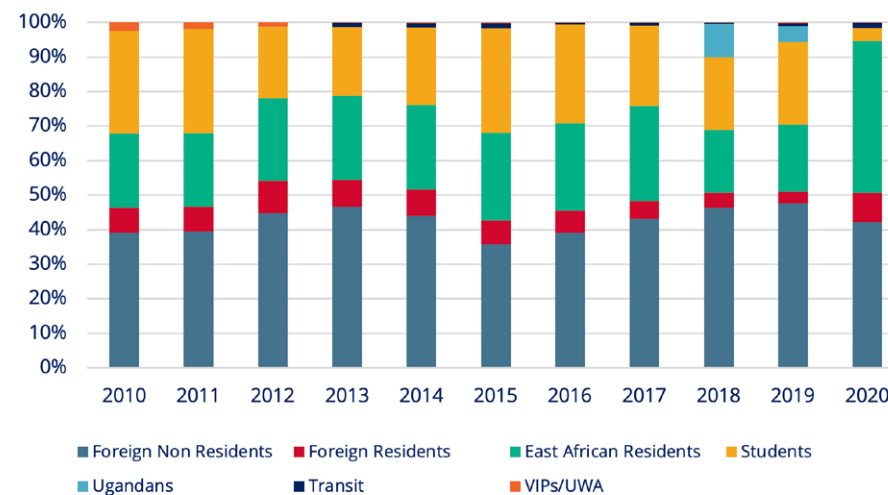
Source: Ministry of Tourism, Wildlife and Antiquities, 2021b

Figure 8: Number of visitors per national park (2010-2020)



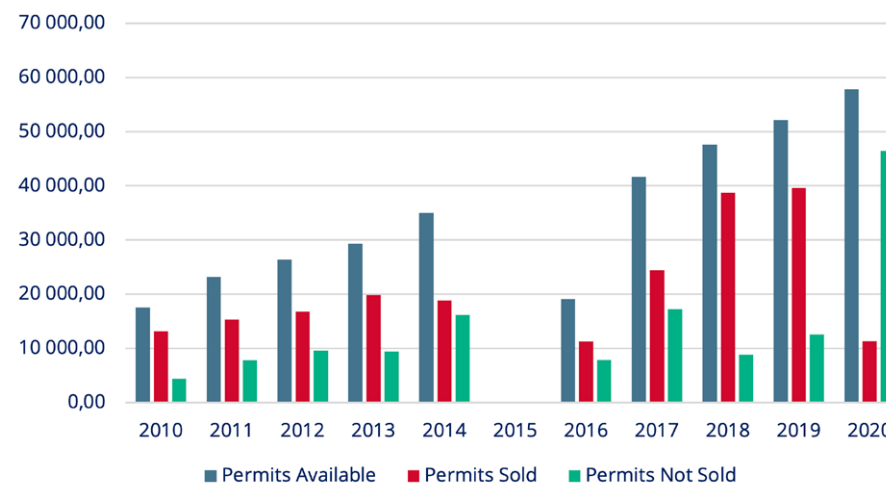
Source: Ministry Of Tourism, Wildlife and Antiquities, 2021b

Figure 9: Category of visitor to national parks (2010-2020)



Source: Ministry Of Tourism, Wildlife and Antiquities, 2021b

Figure 10: Analysis of Gorilla Permits (2010-2020)



Source: Ministry Of Tourism, Wildlife and Antiquities, 2021b

* No data was found for 2015

Figure 8 shows the number of visitors per national park from 2010 to 2020, with Queen Elizabeth National Park and Murchison Falls National Park receiving the most visitors per year.

Figure 9 shows the category of visitor to the national parks from 2010 to 2020. From 2010 to 2019, the majority of the visitors were Foreign Non-Residents, but in 2020 the majority were East African residents. A large number of students also visit the national parks each year.

Figure 10 shows an analysis of gorilla permits from 2010 to 2020, showing that there is still scope to grow gorilla tourism as there are always permits unsold each year.

Table 9: Fees payable for community development and conservation (pers. comm. UWA, August 2021)

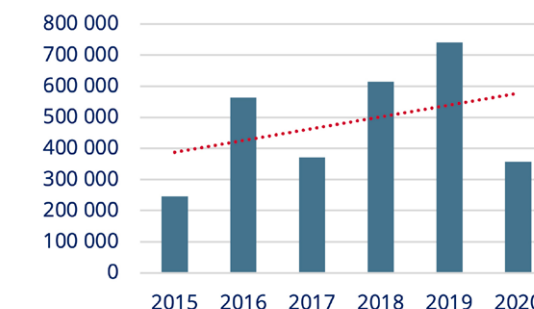
Type of fee paid by different stakeholders	Rate (USD)
Community development fee – hunter (per day)	20
Community development fee – observer (per day)	20
Conservation fee – hunter (per day)	200
Conservation fee – observer (per day)	200
Animal fee - hunter	Depends on the animal
Hunting permit – hunting company (per year)	600
Trophy handling – hunter (per animal)	300
Daily fees - hunter	Variable
Anti-poaching fees – hunter (per animal)	20% of animal fees

Table 10: Number of hunting licenses and permits issued in 2018

License	Total
Hunting permits	78
Export license	74
Import license	2
Total	154

Source: UWA, 2019

Figure 11: Revenue (USD) generated from sport hunting in Uganda (2015 to 2020)



Source: pers. comm. UWA, 2021

Table 11: General use fees under wildlife use rights for 2021 and 2022

Type of fee	Foreign residents (USD)	Ugandan nationals (USD)	Notes
Sport-hunted trophy export fees	300		Paid to UWA per client for export of trophies obtained from sport hunting only
Professional hunters licensee fees	1,500	200	Paid to UWA per year
Hunting permit fees	600	200	To be paid per year
Conservation fees			
a) Hunter	50	20	Paid by the sport hunter and observer per hunting day. In all hunting blocks this fee is paid to Community Wildlife Associations
b) Observer	30	10	
Census fees/anti-poaching fees	200	50	Paid once to UWA by each hunting client and utilised through joint planning within the block or charged per agreement

Source: UWA, 2021

The UWA 2019 corporate report showed that gorilla permit sales increased by 40% from FY 2017/2018 to FY 2018/2019 - 30,763 to 40,331 permits sold respectively. The gorilla permit sales revenue also increased by UGX 24,737,318,400 (approx. USD 7 million) which resulted in a total of UGX 93,804,373,600 (approx. USD 26 million) from UGX 69,067,055,200 (approx. USD 19 million) in FY 2017/2018 (UWA, 2019). Over and above gorilla tourism, it is **important to diversify wildlife tourism products and services to encourage tourists to stay in the country for longer**.



Hunting

The hunting section includes sport hunting, bushmeat hunting as well as fishing.

Sport hunting

Sport hunting started in the 1900s to meet the demands of the colonial administrators and African kings and chiefs (Ayorekire et al., 2011 in Ochieng et al., 2018) and rural communities for subsistence. It was legalized in 1926 through the Game Ordinance (Ochieng et al., 2015 in Ochieng et al., 2018). Hunting was then banned in Uganda in 1979 but reintroduced in 2001 around Lake Mburo National Park (LMNP) and then in 2006 in the Kabwoya and Kaiso-Tonya Game Management Area, with the aim being to reduce human-wildlife conflict, especially poaching, by providing incentives to local community members (Ochieng et al., 2020).

According to UWA (2019) hunting generated over USD 611,000 in 2018, which was shared between partners in the collaborative hunting agreements. Table 8 shows some of the fees payable in terms of hunting. Table 9 shows the number of hunting licenses and permits issued in 2018.

According to Ochieng et al. (2015) sport hunting around Lake Mburo National Park (LMNP) generated USD 323,086, from animal and other fees, between 2001 and 2007, which is distributed among different stakeholders including: Community Wildlife Associations (CWAs): USD 199,170; UWA: USD 68,110; landowners: USD 26,566; Community Protected Areas Institution (CPI): USD 14,120 and sub-counties: USD 14,120 (Muhumbura & Namara, 2009 in Ochieng et al., 2015). Local

governments and CPIs no longer receive revenue from animal fees, but a community development fee of USD 20 each, which is paid by the sport hunters and observers (Ochieng et al., 2015). Figure 11 shows revenue generated from sport hunting from 2015 to 2020.

Bushmeat hunting

In Uganda, all citizen hunting is illegal under the Uganda Wildlife Act of 2019 except for vervet monkeys (*Chlorocebus pygerythrus*), olive baboons (*Papio anubis*), and bushpigs (*Potamochoerus larvatus*) which are permitted to be hunted under the supervision of UWA when they are found to be raiding crops (Dell et al., 2020). As is the case in most African countries, there is a however a **large amount of unregulated and illegal bushmeat hunting in Uganda**.

Olupot et al. (2009) found that, on average, bushmeat cost UGX 2,000 (USD 1.17) per kg or its approximation near hunting sites and just under UGX 3,000 (USD 1.75) per kg in distant areas. They also found that between villages near hunting sites and distant areas, bushmeat prices appreciated by approximately 40%, fetching more money for hunters than if they moved it themselves and attractive profits for the middlemen. Hippo meat was found to be the most highly prized, with bushbuck, duiker and Uganda kob being the cheapest meat types near hunting sites (Olupot et al., 2009).

Olupot et al.'s (2009) main findings, which it would be useful to test again, included the following:

- **bushmeat was not the main source of meat for an average household living in and around major hunting sites.** It was eaten by 5-32% of the households, and rarely so (1-12 days in 100 days)
- **high income earners were more likely to eat bushmeat than low income households**, and farming households more than ranchers and pastoralists
- bushmeat was the main meat source for hunters. It contributed significantly to the hunter's income, and the trade was profitable to the dealers
- **bushmeat was on average cheaper than livestock meat in rural sites, but higher in Kampala**
- most of the meat hunted in Queen Elizabeth Conservation Area (QECA) was consumed in the neighbouring villages

usually within 20km of the protected area boundary, while there was virtually no bushmeat trade associated with Rwenzori Mountain National Park (RMNP). Meat hunted from the Kafu Basin and south of Murchison Falls Conservation Area (MFCA) supplied a much wider market, including Kampala to the south, and Gulu and Kitgum in the north

- in both rural and urban sites, bushmeat was never sold in market stalls and very rarely in restaurants, it was all underground; during transportation it was disguised as agricultural produce or other legal merchandise and usually moved at night
- there were indications that the bushmeat trade and consumption was reducing, but offtake was still high and likely not sustainable
- ungulates were the main animals hunted for bushmeat, and primates rarely, except in RMNP
- spears, snares, and traps were the main hunting implements, and gun use was frequent
- hunting incidence inside protected areas and their environs were comparable
- crop raiding and other forms of human-wildlife conflict drive hunting but to a lesser degree than the need for bushmeat
- uses placed on parts such as skins, tusks, hair, canine teeth, fats, oils and a variety of other body parts also drive hunting, particularly of the big predators, elephants, and pythons
- **hunters were mainly driven to hunt by the need to make money and both need and preference for bushmeat for subsistence**
- certain bushmeat species were considered more tasty than others, and were thus preferred for that reason. In general, **all forms of bushmeat were regarded as tastier than livestock meats and fish.**

Recent research (2020) conducted through the USAID-funded CONNECT project, interviewed 129 consumers and 14 traders in the bushmeat market in Uganda to assess the impacts of COVID-19 on the bushmeat market. In the consumer group, a total of 53 respondents (41%) stated that they consumed bushmeat before the COVID-19 pandemic. Of the same respondents, 43 (33%) stated that they continue to consume bushmeat during the COVID-19 pandemic. Of the 129

Table 12: Formal exports of Uganda's five top commodities from 2014 to 2018 (USD '000)

Commodity	2014	2015	2016	2017	2018
Coffee	410,064	402,634	371,674	555,454	436,084
Fish & fish products	134,791	117,597	121,467	136,201	169,905
Tea	84,739	70,317	71,488	79,713	88,831
Tobacco	66,018	72,897	64,061	52,762	86,372
Cotton	21,918	20,778	31,571	50,776	44,346

Source: NEMA, 2019a from UBOS, 2019

Table 13: Weight (tonnes) and value (USD million) of fish products exported to international markets by industrial fish processors

	2018		2019	
	Weight (tonnes)	Value (USD million)	Weight(tonnes)	Value (USD million)
Fish product	19,840.6	100.6	26,432.7	101.4
Fillets	531.6	52.9	740	76.3
Fish maws	20,372.2	153.5	27,172.7	177.7

Source: MAAIF-DFR, 2019 in NEMA, 2019a

Table 14: Estimated weight (tonnes) and value (UGX billion) of catch per water body

Water Body	2018		2019	
	Weight (tonnes)	Value (UGX billion)	Weight (tonnes)	Value (UGX billion)
Lake Victoria	165,583	990	208,861	1,033
Lake Kyoga	41,585	167.8	16,108	80
Lake Albert	218,420	491.9	313,546.6	756.7
Albert Nile	5,062	14.3	5,062.1	14.3
Lake Edward	1,772.5	6.6	2,745.6	19
Lake George	1,621	2.2	3,431	29.3
Kazinga Channel	244	0.2	461.8	2.9
Minor lakes	13,005.6	41.7	8,830	30.6

Source: MAAIF-DFR, 2019 in NEMA, 2019a

respondents, 57% stated that they do not eat different meat now compared to before the COVID-19 pandemic. Respondents were asked where they source their bushmeat during the COVID-19 pandemic: 61% said that they sourced meat through connections, the forest, and nearby markets. For the traders, a total of 13 taxa were commonly hunted, including wild pig and duiker.

Both studies indicate a demand for wild meat and indicate an important gap for wildlife ranching which could assist with meeting this demand in a sustainable, regulated way.

Fisheries

Twenty percent of the country is covered by water: there are five major lakes (Victoria, Albert, Kyoga, Edward and George) and over 165 small water bodies, river systems and swamps in the country (FAO, 2017). **Capture fisheries production is approximately 570,000 tonnes per year, while the annual aquaculture production is around 100,000 tonnes** (FAO, 2017). The main commercial species are: *Lates niloticus* (Nile perch), *Oreochromis niloticus* (Nile tilapia), *Clarias gariepinus* (African catfish) and *Rastrineobola argentea* (mukene/dagaal/omena) (FAO, 2017).

Fisheries in Uganda are critical for local livelihoods and food security, as well as being an important export. The fisheries sector in Uganda contributes to about 2.5% of GDP and 12% of agricultural GDP and **supplies 50% of the animal protein consumed in the country** (NEMA, 2019a; UNDP & NEMA, 2017). The fisheries sub-sector is important in terms of economic development and social transformation in Uganda but there is **concern over the depletion of stocks and falling prices** (NEMA, 2019a). **The sector supports the livelihoods of nearly 5.3 million people** including youth and women through direct involvement in fishing, fish processing and trading (UNDP & NEMA, 2017).

Some of the **threats to the fishing sub-sector** include over-fishing, indiscriminate fishing methods, trade in illegal, unregulated and unreported (IUU) fishing, catching of immature fish and governance weaknesses in the sub-sector (NEMA, 2019a).

The fisheries sub-sector relied entirely on subsistence capture fisheries (harvesting of fish or other related fish products from the wild) until the introduction of netting materials in the 1920s transformed it into more commercial fisheries (Graham, 1929 in NEMA, 2019a). **Freshwater capture fisheries are the most important source of fish in the country** with the most significant commercial fishery being Lake Victoria (the world's largest tropical lake) of which 45% lies in Uganda (NEMA, 2019a). Other fish sources include Lakes Albert, Kyoga, Edward, George, and Wamala, as well as the River Nile (NEMA, 2019a). Other fish sources at a subsistence level include about 160 minor/satellite lakes and wetlands across the country (NEMA, 2019a).

Fish and fish products have from 2014-2018 consistently scored second to coffee with respect to Uganda's formal exports by value (NEMA, 2019a). Table 11 shows the value of Uganda's five top commodities from 2014 to 2018. The 11% increase for fish in 2018 can be attributed to high demand and comparatively good foreign prices compared to local markets (NEMA, 2019a).

In Table 12, although the value of fish maws increased, fish fillets was insignificant likely due to a drop in the value of fillets in international markets (MAAIF-DFR, 2019 in NEMA, 2019a).

Despite the size of Lake Victoria, from 2018 to 2019 **Lake Albert dominated as the biggest contributor to the proportion of freshwater fish production**, accounting for 43% in 2018 (NEMA, 2019a). Table 13 shows weight and value of catch per water body. **Uganda imported fish and related aquatic products, such as ornamental fish, crustaceans, molluscs and fillet fish for consumption, to the value of USD 90.9 million in 2018/19** (NEMA, 2019a). Imports have been increasing each year and may be due to high demand attributed to increasing population in the country (NEMA, 2019a). This highlights an important role for aquaculture to increase local supply and reduce imports and the associated cost of these.

Fish production in the country generally remains higher than it was 20 years ago with total fish production in 2018 being 456,000 MT (NEMA, 2019a). Although it was slightly less than in 2016 (467,500 MT), it was higher than 2017 (451,900 MT) (NEMA, 2019a). **Over-fishing and the use of illegal fishing gears have, however, led to a decline in fish productivity,**

for example, 4,222 new fishers entered the Lake Albert fishery, increasing the total number of fishers by 17.8% since 2016 (NEMA, 2019a). Over the same period, illegal gillnets increased by 196.3% and this was compounded by an infestation of the Kariba weed (*Salvinia molesta*) (NEMA, 2019a). Other threats are cultivation of the waterbody shoreline and aquatic plastic pollution (NEMA, 2019a).

Establishment of the **Fish Protection Unit in 2017** and the promotion of cage aquaculture have led to a reduction in illegal fishing activity and fishing pressure on the water bodies (NEMA, 2019a). **In terms of the sustainability of fisheries**, more effort should be made towards the restoration of forests and wetlands in the water catchments, protection of water body buffer zones and the promotion of sustainable agronomic practices in areas adjacent to water bodies (NEMA, 2019a).

The main markets for Uganda's fish are the European Union (EU), Japan, Hong Kong, Singapore, Australia, Dubai, Israel and the United States, with **Uganda earning USD 171.5 million from the export of fish and fish products in 2018**: this is the highest ever amount the country has earned from fishery-based exports (NEMA, 2019a). Fish and related aquatic product imports have, however, also continued to the increase, with aquatic product imports increasing from USD 70 million in 2016/2017 financial year to USD 90.9 million in the 2017/18 (NEMA, 2019a).

Artisanal/small-scale fisheries

At least **80% of fishers are categorised as 'artisanal'**, meaning fish are largely caught for domestic use or sold directly to consumers (UNEP-WCMC, undated). According to UNEP-WCMC (undated) there is a **widely acknowledged lack of information on artisanal fisheries in Uganda**, which means that their contribution can often be underestimated in national accounts, such as GDP, which then has a knock-on effect on policy, as it can mean that **artisanal fisheries are not fully accounted for by officials and policymakers when making decisions that directly affect the sector**.

According to FAO (2017), the main challenges and opportunities for small-scale fisheries in Uganda include:

Challenges

1. human population growth;
2. increasing fishing pressures because of market demand;
3. climate change (e.g. water level reduction, the reversal of river flow direction, falling productivity, limited policy instruments, species migration);
4. illegal fishing gear usage;
5. absence of a regional cooperation framework (Lake Albert);
6. budget constraints;
7. invasive weeds; and
8. a lack of quality aquaculture inputs.

Opportunities

1. a favourable political environment;
2. access to international and regional markets;
3. capacity to ensure quality and safety of fish;
4. processing capacity;
5. technology for catfish (*Clarias gariepinus*) and ningu (*Labeo victorinus*) production; and
6. aquaculture potential on land and in water.

Aquaculture

Aquaculture is reported to have been introduced by colonists in 1941 and is **important to minimize fishing pressure on natural ecosystems** (NEMA, 2019a). According to the National Fisheries Resources Research Institute (NaFIRRI) (2013), however, aquaculture was introduced in Uganda in 1953 with the establishment of an aquaculture experimental station at Kajjansi off the Kampala-Entebbe Road, with the main objective of the station being to conduct research, offer extension services and to produce and distribute fish fry to farmers.

On Lake Victoria alone, there are currently (2018) 14,000 fish farmers with a total of 30,000 ponds, as well as 2,135 cages, employing 24,160 people (Sserwambala, 2018 in NEMA, 2019a). The major fish species under aquaculture include the African catfish (*Clarias gariepinus*), Nile tilapia (*Oreochromis niloticus*) and carp (*Cyprinus carpio*) (NEMA, 2019a). The sub-sector is mostly small-scale but in 2018 a small group of medium-scale farmers generated more than 50 tonnes/annum (Bas Bolman et al., 2018 in NEMA, 2019a).



Aquaculture has experienced exponential growth in Uganda over the last 16 years (but with a drop in 2018 due to constraints including marketing, limited capital investment, weak institutional frameworks, etc.), with **Uganda being the largest aquaculture producer in sub-Saharan Africa after Nigeria** (Adeleke et al., 2019 in NEMA, 2019). In 2018, Uganda had 4.72% regional share (Nigeria had 13.26% and Egypt 71.1%) and 0.13% global share of the aquaculture market (NEMA, 2019a). As a result of government intervention and general awareness, aquaculture grew from 2,360 tonnes in 2001 to 103,737 tonnes in 2018 (NEMA, 2019a). Out of the top ten aquaculture producers in Africa, Egypt, Nigeria, Uganda, and Ghana contribute about 93% of total regional production output (Adeleke et al., 2021).

Some of the limiting factors challenging the growth of aquaculture in Uganda include: challenges such as marketing, transaction costs, availability of feed, limited supply of fingerlings, limited availability of suitable land, fish disease management, regulatory framework and policies amongst other factors of production (Cai et al., 2017 in Adeleke et al., 2021).

Despite the drop in 2018, there are a **number of opportunities for aquaculture in Uganda** (Adeleke et al., 2021; NEMA, 2019a):

- Favourable climatic conditions for fish growth;
- Sufficient water resources for tanks, cages and ponds;
- Growing adoption of cage culture is also contributing to the development of the sector;
- Available fish seeds and feeds;
- High market demand for fish;
- Uganda is a major supplier of fish to her neighbouring countries and potentially positioned as a key fish processing hub in the East African region (Cai et al., 2017);
- Existing robust institutions and human capacity; and
- Supportive government systems.

Sport fishing

Source: UWA, conservation tariff, July 2020 to June 2020, pers comm. G. Owoyesigire, August 2020

Sport fishing is allowed in Uganda as long as one has a sport fishing permit. A sport fishing permit at Murchison Falls National Park (MFNP) is required and costs (2020/2021) USD

50 per day or USD 150 for four days, with park entrance fees being paid separately. An annual fishing permit for MFNP costs USD 300. Lake Mburo National Park also offers sport fishing and contains six species of fish, with tilapia the most common: a permit costs (March 2019) USD 15 for one day and USD 25 for two days, with park entrance fees being paid separately (UWA, undated). Data was not found on the overall value of the sport fishing sector in Uganda.



Wildlife trade

Wildlife trade in Uganda is officially recognised as one of the wildlife use rights in the Wildlife Act (2019) and the main institution charged with regulating wildlife trade is the Uganda Wildlife Authority (UWA). Wildlife trade encompasses wild animals (terrestrial and aquatic) as well as flora.

Uganda, as a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1991, has two other important authorities that regulate trade in wildlife. The Management Authority (MA) for CITES in Uganda is the Department of Wildlife Conservation in the Ministry of Tourism, Wildlife and Antiquities (CITES, undated). The Scientific Authorities, as recognised on the CITES website, include UWA, the Ministry of Water and Environment, and the Ministry of Agriculture, Animal Industry and Fisheries and the designated national (CITES) wildlife rescue centre is the Uganda Wildlife Conservation Rescue Centre (CITES, undated).

Wildlife trade in Uganda is largely restricted to birds, reptiles and amphibians, even though, trade in non-timber forest products (NTFPs) occurs it is largely unregulated or monitored and the actual volume or value of trade is unknown (Moyini & Masiga, undated). **The legal trade in CITES-listed timber**, which includes *Prunus africana*, *Dalbergia latifolia*, *Osyris lanceolata*, and *Dalbergia melanoxylon* has, however, been large over the period 2016-2020, including mostly bark, oil and logs (CITES trade database, 2021).

Six wildlife exporters in Uganda managed **regulated wildlife trade valued at an estimated USD 3 million per year**, which is small compared to cotton (USD 16 million) and tourism (USD 160 million) (Moyini & Masiga, undated). The Uganda Investment Authority has not indicated the wildlife sector as

one of the key sectors for investment, except the commercial rearing of crocodiles, which is actually considered under skins and hides and as a component of the agricultural sector (livestock products) (Moyini & Masiga, undated). There is only one crocodile ranch in Uganda and no commercial ostrich ranches and it is estimated that, it would take three to five years to reach full production for crocodile and ostrich ranches (Moyini & Masiga, undated).

Rossi (2018) found that **reptiles were traded mainly between 2000 and 2005**, with a prevalence of trade in chameleon species, followed by Leopard Tortoise (*Stigmochelys pardalis*), totalling 10,000 animals. Trade declined between 2005 and 2009 for most reptile species and then resumed again from 2009 to 2014. The export of live CITES-listed reptiles from 2000 to 2015 reported by the CITES Trade database was 66,284 reptiles distributed across six taxa (crocodiles, chameleons, Monitor Lizards, iguanas, snakes and tortoises) (Rossi, 2018). From 2016-2020, however, the export of live CITES-listed reptiles was 280 reptiles, across two taxa (chameleons and tortoises) (CITES Trade Database, 2021). **For all CITES-listed species trade was mainly in the form of trophies, specimens, skins, scales, bark and bone pieces, rather than live animals.**

The main importers from 2000 to 2015 were the United States, Germany and Japan (Rossi, 2018). **Illegal trade in reptiles has been found to be running in parallel to the legal trade** (Rossi, 2018). The **factors which enable this illegal trade** include the difficulty in identification and inspection of big shipments, unclear taxonomy and distribution range of some species, as well as corruption at the inspection checkpoints (Rossi, 2018).

The legal trade in mammals took place mostly between 2000 and 2015, with the most common species being the Common Hippopotamus (*Hippopotamus amphibius*), the Topi (*Damaliscus lunatus*), and Olive Baboon (*Papio anubis*) (Rossi, 2018). Interestingly from 2016 to 2020, no Topi were legally traded, and 1,183 Chimpanzee (*Pan troglodytes*) are included as specimens traded in the CITES trade database (CITES trade database, 2021). Evidence of illegal trade in mammals referred mainly to pangolin scales and ivory (Rossi, 2018). Illegal trade in birds and reptiles also exists for the international pet trade (Rossi, 2018). Due to Uganda's role in the ivory trade (along with Kenya and Tanzania) between 2013 and 2018 it was part of the

National Ivory Action Plan process (pers. comm., J. Thomson, September 2021).

According to Rossi (2018), data from UWA, referring to live mammal exports between 2000 and 2015 reports 300 specimens exported (including non-CITES-listed species); while the CITES Trade Database reports 229 live animals registered at export (the majority of which were Vervet Monkeys (*Chlorocebus pygerythrus*)); these two figures are consistent considering that, in general terms, global trade (CITES and non-CITES species) is supposed to exceed CITES trade. The main importing countries were the United States, Germany and South Africa (Rossi, 2018).

Over 14,000 live birds were exported from Uganda between 2000 and 2015, including CITES and non-CITES listed species (A. K. Bintooro, Community Conservation Department, UWA, *in litt.* Uganda Wildlife Trafficking Stakeholder Workshop, August 2016 in Rossi, 2018). The two major importers for CITES-listed live birds were the Netherlands and Germany, with South Africa being the largest importer on the continent (Rossi, 2018). From 2016 to 2020, 204 CITES-listed live birds were legally exported (CITES trade database, 2021).

According to Moyini & Masiga, (undated) **future opportunities for wildlife trade lie in diversification into other commodities** such as ornamental fish and NTFPs (such as aloe vera, gum arabic and honey), and intensification (farming) of crocodiles, tortoises, birds, chameleons and others. They (Moyini & Masiga, undated) highlight, however, that **challenges include:**

- the limited human resource capacity among regulators of the industry and the traders and business service providers and business regulators (Uganda Revenue Authority and Uganda Export Promotions Board and Uganda Investment Board and others);
- infrastructure in Uganda is inadequate: roads and poor electricity supply in several areas where wildlife farms could be located;
- poor data management and monitoring of trade in some wildlife products especially NTFPs; and
- the costs of operation in a landlocked country, where wildlife trade depends on air transport are high.

The **Bio-Trade Programme was introduced in Uganda in May 2003** with the overall objective to enhance trade and investment

in biological resources while ensuring their sustainable utilisation (Moyini & Masiga, undated). The programme is also aimed at diversifying the country's export base through the introduction of non-traditional high value products, for improved livelihoods and ultimately contributing to overall economic development (Moyini & Masiga, undated). The Uganda Bio-Trade Programme is implemented by the Uganda Export Promotions Board (UEPB) under the supervision of Ministry of Trade Tourism and Industry (MTTI) (Moyini & Masiga, undated)



Wildlife ranching

Although there is wild animal farming in Uganda, this includes a different class of use rights to wildlife ranching which has not yet started. Wildlife ranching will be operationalised as soon as guidelines are in place (pers. comm. J. Makombe, UWA, August 2021). The objectives of the Uganda Wildlife Authority **Farming and Ranching Guidelines** (2018) are, however, to:

1. Provide guidance for the operationalization and implementation of wildlife use rights classes B and C of the Act under section 29 (see Text Box 2);
2. Promote understanding and guidance on tourism and wildlife-based benefits for enterprise development outside the Protected Areas;
3. Promote the initiative of farming and ranching of wildlife on private, community land and Community Wildlife Areas;
4. Harmonise the procedures for establishment and registration of wildlife farmers and ranchers;
5. Encourage standards of management and monitoring of wildlife farming and ranching; and
6. Promote successful wildlife production systems and sustainable utilisation of the wildlife and other natural resources.

Table 17: Total economic value under different land management arrangements

Forest type	Forest authorities	UWA	Private	Total
Total forest cover (ha)	773,255	676,659	3,448,378	4,898,292
% of total forest cover	15.8	13.8	70.4	100
Value (Billion USh)	93.65	81.95	417.64	593.24

Source: Bush et al., 2012

The regulatory framework is, therefore, in place to unlock the potential of wildlife ranching in Uganda, but it will be important to ensure institutional support, as well as capacity building for stakeholders to engage in this activity, as well as market access, which includes a good road and air network, as well as refrigerated transport and storage.

Table 15: Income derived from the forest in Uganda

Forest (n)	Mean income from the forest (Ush per annum)	Mean % income from the forest
Budongo (154)	118,672	8.4
Bugoma (175)	320,049	16.3
Kasagala (151)	182,512	10.6
Rwenzori (159)	727,104	35.6
All forests (639)	339,696	19.0

Source: Bush et al., 2012.

Table 16: Indirect use values of the forest in Uganda

Ecosystem and option values	Ush (billion)	Level of benefit to society
Watershed benefits	60.8	Household, local community, national
Carbon sequestration	56.4	Global community
Biodiversity value	5.8	National, global community
Soil conservation	99.2	Household, local community, national

Source: Bush et al., 2012



Forest products

According to the National Statistics Office (UBOS 2015 in UNDP & NEMA, 2017) forests contributed 3.5% to national GDP. However, a study on the economic contributions to the national economy found that the forestry sector contributed USD 1.27 billion/year, about 8.7% of national GDP in 2010 (NEMA 2011 in UNDP & NEMA, 2017) and FAO (2013) state that, including the role of forest products consumed domestically, results in forest's actual contribution to the Ugandan economy being 15% of GDP. **Many NTFPs are, however, collected, traded and consumed outside of the cash economy and, therefore, not captured in national statistics** (Chidumayo, 2013 in Tugume et al., 2019). Tugume et al. (2019) highlight that **inadequate data on the economic significance of forests and forest products** influences people's perceptions about the usefulness of the resources resulting in poor management and consequently forest degradation. This highlights the **importance of understanding the use of, and valuing, NTFPs**.

Field surveys by Bush et al. (2012) found income from the forest as per Table 14 and when these values were scaled up for the total amount of forest cover of each forest type in Uganda, the **total contribution of forests to local people's livelihoods at the national level was calculated to be USD 190 million**. They further found that although poorer households derived proportionately more of their income from forests, in absolute terms, wealthy households captured more of the financial value that was available (Bush et al., 2012).

When indirect use values of the forest are included (see Table 15), Bush et al. (2012) calculated that the combined value of all services and option values was USD 127 million and that the **total economic value including all marketable and non-marketable values of Uganda's forests is approximately UGX 593.24 billion (USD 168 million), approximately 5.2% in GDP terms**.

Bush et al. (2012) went further to look at the total economic value under different land management arrangements: see Table 16. They highlight that it is important to note that **a large portion of the values derived from forests come from forests on private land**, but there are **few incentives or regulations to**

promote sustainable forest management on private land (Bush et al., 2012).

In Uganda, communities can enter into **Collaborative Forest Management (CFM) agreements** with the government (National Forest Authority (NFA)), which provides a formal arrangement for collaboration in forest protection, sustainable harvesting of forest products, and the development of alternative sources of income to reduce pressure on the forest (Ssemmanda et al., 2020). The CFM model requires communities to formally organise in CFM groups, which commit to regulating forest use, through patrolling the forest, and they are allowed to benefit from activities within the forest reserve, such as beekeeping, collecting non-timber forest products, and developing tree plantations in degraded areas (Ssemmanda et al., 2020). At present, there are **67 CFM agreements signed with the NFA, covering approx. 85,000 hectares** (Ssemmanda et al., 2020). The revenues earned through CFM agreements are usually used for collective investments by the group or invested into local Savings and Credit Cooperative Organisations (SACCOs), where members can then borrow money, usually with very low interest rates (Ssemmanda et al., 2020).

In terms of timber, in 2014, Uganda produced 46.6 million tonnes of round wood worth UGX 774 billion (approx. USD 293 million), registering an increment of 12.1% in value from 2013 (UNDP & NEMA, 2017). The principle use of wood in Uganda is for energy for heating, cooking and lighting among households and at a commercial level (UNDP & NEMA, 2017).

A study by Cottray et al. (2003) looked at a **spatial analysis of NTFPs in Uganda** in terms of access to markets, distribution of resources, etc. and they found that their model revealed that the potential resource base was within an acceptable distance of the market for selected NTFPs. They concluded that the successful commercialisation of such NTFPs could help provide income-generating opportunities to the poorest sections of Ugandan society, while at the same time providing incentives for the long-term management of environmental resources (Cottray et al., 2003). It would be useful to conduct another study of this nature to inform policy and practice and ensure careful planning, management and monitoring of NTFPs going forward.

Barirega et al. (2012) found the following as some of the wild plants found at Ugandan markets, almost all of which come from wild populations as there is **little cultivation of wild plants for commercial purposes**: *Mondia whitei* (Mulondo), *Prunus Africana* (Red stinkwood), *Solanum nigrum* (eshwiga), *Rubus pinnatus* (enkyerere), *Munodota junodoii* (Ebyuufa), *Physalis peruviana* (Entuutu), *Cyphomandra betacea* (amashararazi), *Luffa cylindrica* (echangwe), *Afromomum angustifolium* (amatehe), amongst others. The **successful commercialization of such plants requires a clear understanding of the demand and production systems of the plants and their derivative products** (Barirega et al., 2012). **Commercialisation and value addition of wild plants has been found to positively influence attitudes towards the need to conserve them to guarantee benefits** (Marshall et al., 2006 in Barirega et al., 2012).

Tugume et al. (2019) studied the value of NTFPs from Mabira Central Forest Reserve (CFR) used for subsistence and trade by adjacent communities and found that it was mainly poor women and men aged below 61 years and with low education levels who were extracting NTFPs. The NTFPs collected were used for nutrition, construction, energy demands and primary health care among others (Tugume et al., 2019). They found that the **annual value of identified NTFPs was USD 860,470** of which USD 58,688 was attributed to subsistence use and USD 801,782 to cash income (Tugume et al., 2019). Charcoal was found to have the highest annual value of USD 327,686, with firewood the second highest, valued at USD 153,879 and palm leaves the lowest at USD 187 (Tugume et al., 2019). See Table 17 for the top five NTFPs. They concluded from their study the **need for urgent intervention measures for alternative sources of income and sustainable extraction of NTFPs to minimise pressure on the forest reserve** (Tugume et al., 2019).

FAO (2013) research found that in the northern and eastern regions of Uganda, forests make up 34% and 35% respectively of household incomes and although households in all four regions still get approximately 60% of their household income from agriculture, **income from forest products is more important than income from livestock and employment/trade combined**. The FAO (2013) study further found that the total value of forests to rural people in Uganda (across the great majority of the country covered in their analysis) comes to more

Table 18: Annual value of the top 5 NTFPs extracted by communities around Mabira CFR for subsistence and commercial purposes

NTFP	Subsistence use (annual USD)	Commercial use (annual USD)	Total value (USD)	Value, %
Charcoal	9,419 (3%)	318,263 (97%)	327,682	38.1
Firewood	34,398 (22%)	119,480 (78%)	153,879	17.9%
Medicinal plants	3,295 (4%)	77,190 (96%)	80,485	9.4%
Mats		75,331 (not available)	75,331	8.8%
Construction materials	6,502 (9%)	66,234 (91%)	72,736	8.5%

Source: Tugume et al., 2019

Table 19: The value of forests to the people of Uganda

Energy	In 2011, Uganda's energy budget was expected to rise to USD 514 million	Energy from the forest used by rural people is worth almost USD 1.6 billion
Housing	51% of houses in Uganda are made from wood-fired bricks, 46% of mud & poles and 3% of 'modern' building materials; 40% have thatched roofs (UBOS, 2010b in FAO, 2013)	Most of these housing materials are taken from the forest, to a value of more than USD 1 billion a year. Other important domestic materials for making rope, string, mats and baskets, etc. come to USD 325 million
Health and food security	Uganda spends USD 10.4 per head per year on health. The Ministry of Health says it would need an additional USD 28 per head to treat numerous other diseases not covered in the USD 10.4	Rural Ugandans collect at least USD 27 worth of forest foods a year for nutrition and another USD 7 worth of herbal medicines: forests are vital for supplementing government health budgets and contributing to food security

Source: FAO, 2013

Table 20: Resources used from 2014 to 2020 (quantities)

Resources	Unit of measurements	2014	2015	2016	2017	2018	2019	2020
Fish	Kilograms	534,901	478,888	439,149	514,105	416,176	537,914	176,169
Bamboo	Bundles	7,241	8,756	7,871	6,566	7,352	7,704	4,708
Firewood	Bundles	26,472	30,911	41,743	32,865	53,002	189,580	183,079
Honey	Kilograms	4,465	7,917	4,782	8,179	10,237	12,142	3,568
Grass	Bundles	4,689	8,694	8,686	6,213	9,660	25,459	54,724
Medicinal Herbs	Basket	613	1,128	1,234	1,679	1,253	160	755
Snail shells	Tonnes	138	1,037	653	1,015	192	81,828	170,932
Vegetables	Bundles	446	991	917	981	590	174	436
Others	Assorted	274,749	537,608	528,211	728,296	456,950	5,389	57,327

Source: pers. comm. UWA, August 2021



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Table 21: Total quantity and value of resources used (2014 to 2020)

Resources accessed	Total quantity	Estimated unit cost (Ugandan Shillings)	Total Value
Fish (kilograms)	3,097,301	15,000	46,459,521,000
Bamboo (bundles)	50,198	5,000	250,990,000
Firewood (bundles)	557,652	5,000	2,788,260,000
Honey (kilograms)	51,289.5	15,000*	769,342,500
Grass (bundles)	118,125	3,000	354,375,000
Medicinal Herbs (baskets)	6,821.5	3,000	20,464,500
Snail shells (tonnes)	255,794.6	2,500	639,486,500
Vegetables (bundles)	4,535	3,000	13,605,000
Others** (assorted)	2,588,531	9,207	23,832,601,234
Total value			75,128,645,734

*The "other" resources include; Ambatch, Bean stakes, Broom, Cattle leaks, Cawrie shells, Charcoal, Clay, Cultural Sites, Cyphostema, Dombeya, Draceana, Exotic Poles, Govania longispilata, Honey, Monanthotaxis, Papyrus, Piper guineense, Prunus Africana, Rattan Cane, Reeds, Rope, Rytigynia Kigeziasis, Sickie bush and Smilax

**this is the farmgate price. The actual retail price is UGX 30,000 per kilogram.

Source: pers. comm. UWA, August 2021, pers. comm. D. Aturinde Elly, TUNADO, August 2021

than **USD 4 billion per year, nearly USD 146 for each man, woman and child, or about USD 730 per year per household**. Of this value, 72% is used domestically (subsistence), and 29% is cash derived from sales (FAO, 2013). For an average household, the value of forest products breaks down into USD 290 from fuel, USD 180 from building materials, USD 135 from forest foods, USD 60 from fibre, USD 35 from herbal medicines and USD 30 from timber (FAO, 2013). Table 18 illustrates further the value of forests to the people of Uganda.

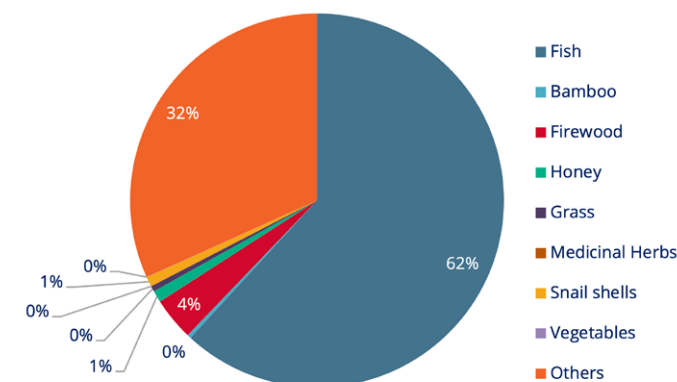
According to UWA (2019), a total of 75 **Memorandums of Understanding (MoUs) to access the available resources in protected areas** were signed with communities and implemented in the reporting period 2017-2018. Twenty-two (22) MoUs were signed with resource use groups in LMNP, RMNP, KNP and MENP while fifty (50) MoUs in MFNP, RMNP, KNP, MENP and BINP which had expired were reviewed and revised (UWA, 2019). MoUs of this nature help improve the livelihoods of communities neighbouring protected areas, minimize pressure on resources and develop a positive attitude

by communities towards the protection of wildlife resources (UWA, 2019).

Resources worth UGX 556,955,900 (approx. USD 156,500) were shared with the communities neighbouring the protected areas in 2018 (UWA, 2019). These resources differed per protected area and included but were not limited to (UWA, 2019):

- Bamboo, mushrooms, vegetables and salty rocks for livestock
- Fish
- Firewood
- Papyrus and ambatch (*Aeschynomene elaphroxylon*) for use as floats for fishermen
- Medicinal plants
- Wild coffee
- Grass for thatching
- Water collection in the protected area
- Weaving materials.

Figure 12: Percentage distribution of resources used



Source: pers. comm. UWA, August 2021

Tables 19 & 20 and Figure 12 shows the quantities, values and percentage of resources used from 2014 to 2020.

Given the lack of consistent data in terms of forest products, **the valuation of forest resources should be developed within routine systems for monitoring and evaluating NTFP benefits on a local and national scale**, e.g. UBOS household survey or part of the NFA monitoring programme (Bush et al., undated). A comprehensive survey of market prices, performance, supply, and demand for forest products should also be conducted to provide insights into how trade could be regulated (adapted from Bush et al., undated).

The following sections look at some of the main forest products in Uganda, in terms of use and where data was available, including values in terms of revenues and employment.



Gum arabic

Source: Egadu et al, 2007

Gum Arabic is an alternative source of livelihood for several households in Karamoja region. Several families collect gum arabic which is used in the production of food stabilizers, ink and textiles. It comes from the hardened sap of the *acacia Senegal* and *acacia seyal* trees. Apart from textiles, the gum is also used in printing, photography, pharmaceutical industries and production of soft drinks, syrups, sweets, glue and paints among others. UNCTAD (2017) found that exports were reported, on average, to be only USD 8,000 per annum between 2005-2016.

Shea

Shea trees are found in a belt covering the following districts in Uganda: Lira, Otuke, Alebtong, Pader, Agago, Dokolo, Soroti, Serere, Amuria, Katakwi, Abim, Moyo, Arua, Kitgum, Nebbi and Nakasongola (NEMA, 2019a). Traditionally, most of the shea nuts are processed into shea butter for home consumption and to meet local market demand but today there is also a large export market. The **major threats to shea trees** are continued fire outbreaks and the cutting down of mature trees for charcoal (NEMA, 2019a). The hub of the shea sector in Uganda is the northern town of Lira, with shea butter nearly almost always been sold by women (Masters, 2002).

Uganda exports shea products to Germany, Japan, Kenya, India, Canada, Middle East, Rwanda and France (Business Week, 2019 in NEMA, 2019a). Uganda Export Promotions Board (UEPB) has set a target of supporting and enabling shea product producers to have at least 200,000 to 500,000 tonnes of shea nut produced by 2022: UEPB stated that the trade targets will be achieved by conserving and stopping the depletion of the shea butter trees, which are largely cut down for charcoal burning (Business Week 2019 in NEMA, 2019).

In 2015, NEMA supported private sector and District Local Government stakeholders in the Shea Belt of Northern Uganda to develop a national strategy for the conservation and sustainable use of the threatened shea butter trees in Uganda (NEMA, 2019). Implementation of the strategy is estimated at a total cost of USD 21.65 million over the 10-year period:

Government of Uganda (GoU) and local governments are expected to provide the funds for implementation of the project (NEMA, 2019).

Okullo et al. (2017) interviewed 160 shea collectors/processors, 79% of which were female, highlighting that the **shea business in Uganda is dominated by women**.

Their research (Okullo et al., 2017) found that the proper trade in shea products is limited by the following:

- a) High levels of consumption of the shea oil in the shea belt
- b) A lack of proper market linkages between gatherers and users within and outside Uganda
- c) A lack of adequate commercial markets in which to trade the commodity
- d) A lack of market information and awareness of the higher market opportunities.

They further found (Okullo et al., 2017) that 72% of the the shea producers interviewed had not received any formal training in shea gathering, processing or marketing and that **indigenous knowledge of production, storage and processing of shea** is commonly used. They found that there were a number of shea products utilised for a number of different things including shea oil as a medicine or for soap making; wood for poles, charcoal and firewood; bark for treating malaria, tooth defects and diarrhea; fruits are eaten; seed cake as fertiliser and for killing termites and wax for treating cut wounds. Less than 20% of the shea producers interviewed sell their nuts to organisations such as the Northern Uganda Shea Processor's Association (NUSPA) or the Community Organisation for Rural Enterprise Activity Management (CREAM).

Opportunities for the shea industry highlighted by Okullo et al. (2017) included:

- a) Establishment of market information centres where communities can easily access market information
- b) More research on processing techniques and technology needed for improving processing and post-harvest handling
- c) Enhancing naturally regenerating young shea
- d) Provision of appropriate training in techniques of shea gathering, processing and marketing
- e) Involvement in carbon trade, and
- f) Grants to support the industry.

Text box 5

Northern Uganda Shea Processor's Association (NUSPA)

The Northern Uganda Shea Processors Association (NUSPA) was established in 1997 and is a Ugandan association comprising mostly women who collect and process shea kernel. In 2006 and 2008, NUSPA managed to achieve organic certification under USDA-NIP and EEC 2092/91 regulations.

The **main objectives of NUSPA** are to:

- Improve the standard of living of the members
- Look for markets for the shea
- Promote community-based resource conservation
- Improve village level processing technologies
- Create employment opportunities for local communities.

Source: Progreso Network and Solidaridad Netherlands, 2011

African Mahogany

African Mahogany (*Azalia africana*) is a tree species in the *Fabaceae* family and is found in Arua and Yumbe districts. It is prized for its' quality wood, the bark is used for medicinal purposes and the nitrogen-rich leaves enrich the soil (NEMA, 2019a). The wood is used in carpentry, canoe- and house-building and furniture-making. In terms of medicinal purposes it is used as a analgesic, laxative, emetic and aphrodisiac amongst others. There is illegal cutting of the trees, which are then smuggled to Asia and other parts of the world, resulting in the trees being under threat of extinction (NEMA, 2019a).

Table 22: Import and export of bamboo products for Uganda

Product	Value (USD)	
	Import	Export
Bamboo	95,913	161,922
Preserved bamboo shoot	4,048	0
Bamboo mats/screens	18,294	997
Bamboo plaits & plaiting material	1,101	0
Bamboo basket work	7,331	0
Bamboo charcoal	0	1,480
Bamboo flooring	10,150	20,880
Bamboo plywood	49,902	18,180
Bamboo pulp	0	0
Bamboo paper based articles	994	213
Bamboo and rattan seats	18,514	0
Bamboo and rattan furniture	98,085	0
Total	304,332	203,672

Source: UN COMTRADE Data base <https://comtrade.un.org/data/> Note: Averaged values of 2014, 2015 and 2016 in International Bamboo and Rattan Organisation, 2018.

Bamboo

Bamboo in Africa is mostly used to meet subsistence needs, and to cater to the demands of local markets, with Ethiopia being the only country in Eastern and Southern Africa, which has a comparatively well-developed bamboo industry producing bamboo panel, stick based and bio-energy products (International Bamboo and Rattan Organisation, 2018). South Africa is the most significant importer of bamboo products in Africa (International Bamboo and Rattan Organisation, 2018). Uganda has an estimated bamboo growing area of 18,000 hectares (World Bamboo Resources, 2005 in International Bamboo and Rattan Organisation, 2018). The **overall state of bamboo forests in Uganda is degraded and unhealthy** due to the lack of sustainable harvesting practices, over-exploitation, and forest disturbances such as wild fires, animal disturbances, pest and insect attack (International Bamboo and Rattan Organisation, 2018). The extraction level of bamboo poles and bamboo shoots (Mount Elgon) for subsistence use, and product

production is high compared to the sustainable regeneration capacity of bamboo clumps (International Bamboo and Rattan Organisation, 2018).

Both Uganda's Vision 2040 and Uganda's Forest Policy provide a framework for the sustainable production of NTFPs including bamboo (Kalanzi et al., 2017). **In Uganda, two indigenous species of bamboo**, *Yushania alpina* and *Oxytenanthera abyssinica*, are found in the protected areas of Mt. Elgon, Rwenzori, Mgahinga, Bwindi Impenetrable National Park, Otzi West and East, Ayipe, Atiya, Agoro-Agu and Echuya (International Bamboo and Rattan Organisation, 2018). The indigenous bamboo species are mostly found in the natural forests under government control, but some small-holder farmers around Mgahinga and Bwindi have started bamboo cultivation on their farms (International Bamboo and Rattan Organisation, 2018). The International Bamboo and Rattan Organisation (2018) found that the **reasons for a general lack of interest among farmers to grow bamboo included**: i) shortage of land, ii) proximity to the park (bamboo is a common property resource), iii) maturity of bamboo (takes up to five years for first harvest) and iv) limited awareness about the bamboo.

The International Bamboo and Rattan Organisation (2018) found **little information in terms of the number of people in Uganda involved in the cultivation of bamboo**, but key informants in their study said that the number was limited and the **bamboo industry as a whole is underdeveloped**. Uganda is a negligible player in international bamboo trade representing 0.023 and 0.014 per cent of global imports and exports respectively (International Bamboo and Rattan Organisation, 2018). Table 21 shows import and export values, with Uganda importing more than it is exporting. This highlights an opportunity to unlock the potential of the indigenous bamboo industry as a means to create employment and generate revenue.

Kalanzi et al. (2017) interviewed 114 bamboo harvesters in south western Uganda and found that 87% of them **obtained bamboo from the forest and that activities were dominated by men**, with the average total household income obtained from the sale of bamboo products being UGX 125,902 (approx. USD 35), with a gross margin of 51.6%.

The overall management of bamboo as a natural resource falls under the jurisdiction of National Forestry Authority

(NFA) and Uganda Wildlife Authority (UWA), Ministry of Water and Environment (MWE), while bamboo value-addition and enterprise development activities are managed by the Uganda Industrial Research Institute (UIRI); investment promotion is handled by Uganda Investment Authority (UIA) (International Bamboo and Rattan Organisation, 2018).

The International Bamboo and Rattan Organisation (2018) found that the **existing bamboo value chains in Uganda include**: (i) nursery, (ii) bamboo pole, (iii) bamboo shoot, (iv) bamboo furniture, (v) bamboo handicrafts and ornaments, (vi) bamboo charcoal, and (vii) industrial product and the bamboo value chain actors consist of: i) resource producers, ii) collectors or harvesters, iii) processors, iv) traders, and v) consumers, with **approx. 1 million people involved**. They found, however, that the **five main bamboo value-chains which can be developed in the short-term** included: 1) bamboo shoots, 2) bamboo furniture, 3) bamboo handicrafts, 4) bamboo construction, and 5) bamboo energy products (International Bamboo and Rattan Organisation, 2018).

Uganda has a **National Bamboo Strategy and Action Plan, 2019-2020** with the vision of:

"Sustainably managed bamboo resources for community livelihoods, socio-economic development and environmental protection" and four strategic objectives (Ministry of Water and Environment of Uganda & the International Bamboo and Rattan Organisation (INBAR), 2020):

- To increase production and productivity of bamboo forests in Uganda
- To increase return on investment (ROI) in the bamboo industry through processing and value addition
- To improve knowledge management in the bamboo industry through awareness creation, education and research, and
- To improve governance and institutional arrangements in support of the bamboo industry.

The Ministry of Water and Environment of Uganda and the International Bamboo and Rattan Organisation (INBAR) (2020:5) listed the following **factors as contributing to the slow development of the bamboo industry in Uganda**:

1. Difficulty in obtaining bamboo, that is, the limited bamboo supply. People have destroyed a large amount of bamboo forest, and this has resulted in a scarcity of bamboo raw materials for industries
2. Lack of sustainable management of bamboo, resulting in poor quality of bamboo
3. Lack of interest among communities and private growers in bamboo planting, mainly due to negative attitudes (makes soil infertile, organised markets are lacking)
4. Lack of awareness on the possibilities and potential of bamboo, which is still considered a poor man's timber used for low-quality and less durable products
5. High cost of planting materials prohibit growers from investing in large bamboo plantations
6. Inadequate capital for establishing and maintaining the bamboo industry
7. High taxation of bamboo products (value-added tax [VAT], excise duties); the upcoming industry needs to compete with imported products and cheaper alternatives
8. Limited technology and capacity for production and value addition, and
9. No established institutional support that focusses on the bamboo industry development.

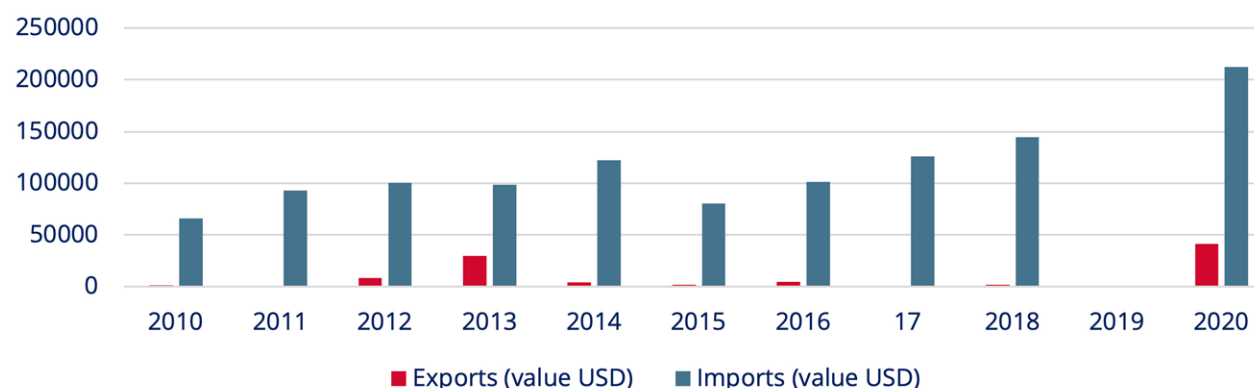
For a full SWOT analysis of the bamboo sector in Uganda see [International Bamboo and Rattan Organisation \(2018: 49-50\)](#).

The Bamboo Strategy says that the development of the bamboo industry should be private sector led (Ministry of Water and Environment of Uganda & INBAR, 2020). This will require a supportive legislative framework and relevant institutional support.

Apiculture

The **main honey producing areas in Uganda** are: the West Nile region in Northern Uganda and the Western Uganda (Kabarole, Kisoro, Mbarara, Ntungamo, Kabale, Bushenyi and Rukungiri districts) (Kilimo Trust, 2012). Northern Uganda, which produces the highest volumes, records about 640 MT

Figure 13: Import and export value of honey (USD)



Source: Trendeconomy, 2021

Table 23: Yields and revenue from different types of hives

Type of hive	Estimate cost	Harvests in a season	Yield/season (kg)	Selling price (UGX/kg)	Total revenue (UGX)	Products
Traditional hive	10,000-50,000	1	5-10	2,500-3,500	12,500-17,500 – 25,000-35,000	Honey, wax, propolis, pollen
Kenya Top Bar (KTB)	85,000	1	10-15	2,500-3,500	25,000-35,000 – 37,500- 52,500	Honey, wax, propolis, pollen
Langstroth hive	150,000	2-3	15-20	2,500-3,500	75,000-105,000 – 100,000 – 140,000	Honey and pollen

Source: Adopted from Bee House Products Ltd, 2012 in Kalimo Trust, 2012.

per annum while the central region records the least volume of about 85 MT, with Yumbe, Nakapiripirit, Pader, Moroto, Amuru, Oyam, Nyadri, Nebbi, Apac and Lira districts being the leading producers of honey in Uganda (Kilimo Trust, 2012).

Amulen et al. (2019) state that the average price per kg of honey is estimated at USD 6, with **Ugandan beekeepers harvesting just 1% of the estimated production potential of 500,000 tonnes** (Kajobe et al., 2009 in Amulen et al., 2019). This illustrates huge scope for growth in the honey market in Uganda. Amulen et al. (2019) found that **low production was attributed to several factors** including weak policies,

investment and knowledge exchange between stakeholders and that the greatest potential to increase beekeeping yields was in northern Uganda where 60% of households own beehives (TUNADO, 2012; UBOS, 2009 & Amulen et al., 2017 in Amulen et al., 2019). Figure 13 shows that Uganda imports much more honey than it exports, highlighting an **opportunity to grow the honey export market in the country, as well as the market to supply local demand**.

The **majority of beekeepers in Uganda are small scale producers** using mostly traditional hives and indigenous management practices to maintain their bee colonies (Kilimo

Trust, 2012). It is **estimated that there are about 2 million hives in Uganda**: 87% of which are traditional log hives with about 66% of them getting colonized per season (Kilimo Trust, 2012).

According to the Plan for Modernisation of Agriculture (PMA) (2005 in Kilimo Trust, 2012), the demand for honey in Uganda is up to 3,600 MT but the estimated annual production is 1,538 MT, resulting in **a deficit of 2,062 MT/per annum** (Kilimo Trust, 2012). Bee products are mostly traded in the form of pure honey, combed honey, boiled honey, propolis, beeswax and honey wine, with royal jelly, pollen and venom not yet having been explored (Kilimo Trust, 2012). There is a **lot of informal cross border trade between Uganda and its neighbouring countries** (Rwanda, DRC, Kenya, and South Sudan), with this market growing fast and having less stringent requirements compared to the European market (Kilimo Trust, 2012).

The **main actors in the honey value chain** are (Kilimo Trust, 2012): input suppliers, beekeepers, bulkers, processors, transporters (who also double as traders), processors, exporters, wholesalers, retailers and consumers. The **honey value chain is still relatively unstructured**, with the majority of players being micro and small players at production and trade levels (Kilimo Trust, 2012). **Structuring of the honey value chain offers the opportunity for growth and expansion and the inclusion of a larger number of people.**

Temporary employment at the trading stage of honey is dominated by women with, on average, four women (as opposed to three men) being employed as casual labourers at this stage and earning an average wage of UGX 150,000/month (Kalimo Trust, 2012). Women also dominate activities at the marketing and processing levels (Kalimo Trust, 2012).

The **biggest challenges in the honey value chain** are poor quality of honey and insufficient, unreliable volumes supplied due to inefficient production and processing methods (Kalimo Trust, 2012). There is an **opportunity for new investment in the honey inputs sub-sector**, which is under-developed in terms of the supply of packaging jars (Kalimo Trust, 2012). **Other challenges along the honey value chain** include limited business and apiary management skills of producers, inability to deal with risks brought about by weather variability,

theft of hives, low adoption rates of technology, inadequate technologies and packaging materials and inadequate access to appropriate financial products (Kalimo Trust, 2012).

Edible insects

There are less than 10 species of edible insect in Uganda, with the two most common species of commercial importance being: *Macrotermes spp* (termites, *nswa*) and *Ruspolia differens* (long-horned grasshoppers, *nseene*).

The East African longhorn grasshopper (*R. differens*)

The East African longhorn grasshopper (*Ruspolia differens*), locally known as *nseene*, is the **most commercialized insect in Uganda**: it is consumed either boiled, raw, sun-dried, fried and flavoured with onions, or to make a soup (Odongo et al., 2018).

Household collection of East African longhorn grasshoppers is largely consumed within the home and a small proportion is sold to neighbours (Odongo et al., 2018). Odongo et al. (2018) found that in terms of marketing, there was **minimal value addition, a lack of standardization and inadequate market information** but there was **high market potential**, with demand outstripping supply throughout the year and unit prices being higher than competing products such as beef, pork and poultry.

In Odongo et al.'s (2018) research in the Lake Victoria basin they found that commercial collectors, on average, could collect and sell 70 bags (approx. 100 kg each) of the grasshoppers daily during the peak swarming season and **gross revenue estimates were UGX 6,740,000 (USD 2,696) per swarming season**. These collectors were found to mostly sell to other wholesalers and retailers in both urban and rural areas. Retailers were found to add value by frying and packaging before selling, for which they received on average UGX 1,727,000 (USD 690.80) per season.

Odongo et al. (2018) also found the following:

- A kilogram of grasshoppers was sold at USD 3, which competes with alternative food sources such as beef (USD 3.50) and fish (USD 1.95);
- Gross margin analysis also showed the income generating potential of edible insects with retailers earning USD 690

and wholesalers USD 2,633 per season from the trade in edible insects alone;

- The market demand for edible insects was high in all markets that they visited;
- Minimal value is currently added: value addition could be done through preserving the edible insects to extend their shelf life beyond the harvesting season(s); designing appropriate packaging that is appealing to the consumers; and promotion of edible insects consumption on print and online media;
- There is a lack of standardisation: establishment of a standard for grades, packaging, and labelling would improve pricing and consumer perceptions and confidence in consuming edible insects.

Mushrooms

Source: Wendiwo et al., 2019

There are at least 10 mushroom species in Uganda that support the livelihoods of many people. **All mushrooms species, except commercial oyster species, are collected from the wild and their availability is seasonal.** In 1990, the Ministry of Agriculture, Animal Industry and Fisheries of Uganda, introduced oyster mushroom production in the region. Commercial mushroom production methods can protect against climate risks and seasonal variability. Over 10,000 farmers have been introduced to artisanal mushroom production in Kabale district alone. It is also possible to develop value-added products to increase income and further improve the livelihoods of producers. Through the sale of mushrooms and value-added mushroom products, there can be greater opportunities for low- and very low-income communities to participate in the local economy, and, in future, access international markets through the export of value-added products.

Medicinal plants

It is estimated that **approximately 80% of Ugandans depend on indigenous medicine**, using various plants such as Moringa, *Aloe vera*, *Prunus africana*, African tulip or African flame tree (*Spathodea campanulata*) and African tonic among others (NEMA 2016 in NEMA, 2019b). Despite the importance of medicinal plants, **only about 1% of the 250,000 species of higher plants known to have medicinal value have had their biomedical potential determined** (UNDP & NEMA, 2017).

Tugume et al. (2016 in NEMA, 2019b) identified a total of 190 species of medicinal plants being used in Uganda distributed in 61 families and 152 genera. Namukobe et al. (2011) found 131 different species of medicinal plants distributed over 55 families, used to treat 43 physical illnesses/diseases, being used by local communities around Kibale National Park. They found that **most of the medicinal plants being used were not cultivated and ran the risk of depletion or extinction through habitat destruction and over-exploitation** (Namukobe et al., 2011). Recent ethno-botanical research has identified more than 300 plants (trees, shrubs, flowers and weeds) growing wild across the country associated with medicinal value (NEMA, 2019b). Some of these crops have gained value in the pharmaceutical industry and are now grown on a commercial scale while others are harvested by herbalists (NEMA, 2019b).

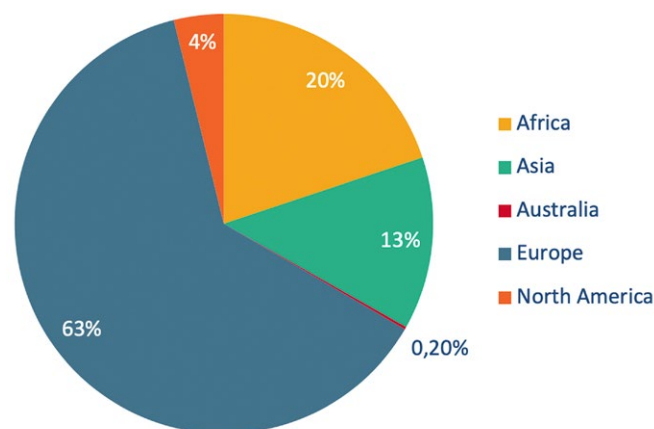
Coffee

Although coffee is technically an agricultural product in economic accounting, indigenous coffee grows in forests and can contribute to the conservation of the forest and has, therefore, been included under Forest Products.

Robusta coffee, which is cultivated along the Lake Victoria crescent, is indigenous to the *Nganda* regions of Uganda, with wild varieties still found in the foothills of the Rwenzori Mountains in western Uganda, where they are harvested as a specialty ECO coffee and marketed as the "Kibaale wild" (UCDA, undated). **Robusta makes up 80% (by weight) of the coffee exported by Uganda** (UCDA, undated). Coffee accounts for the bulk of export revenues for Uganda, contributing 15% of total goods exported (UCDA, undated). **Uganda is the fourth largest Robusta producer in the world**, after Vietnam, Brazil and Indonesia (UCDA, undated). According to UCDA (undated) 112 Districts grow coffee, with 88 growing Robusta only, 15 Arabica only and nine Districts growing both Robusta and Arabica, with a total of **1.7 million households growing coffee** and an average coffee farm size of 0.18 hectares.

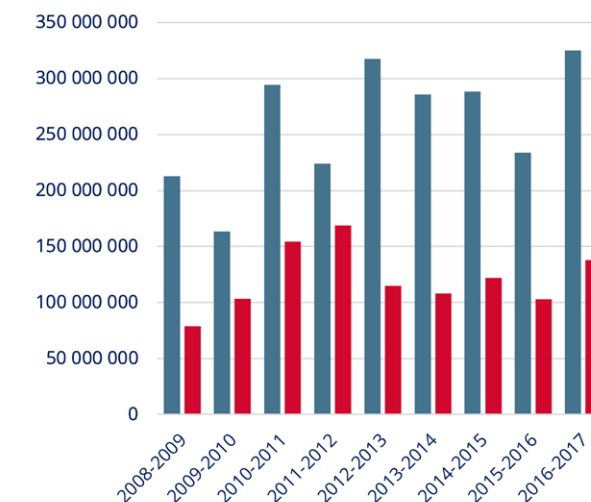
According to Gitonga (2018), the government does not levy tax on Uganda's coffee exports, but the UCDA levies a 1% local tax on all marketed coffee. **More than 95% of Ugandan coffee is exported through direct sales** by more than 30 companies, with 10 companies controlling more than 80% of the business (Gitonga, 2018). The main export destinations for Uganda coffee are the

Figure 14: Share of coffee destination by continent (December 2020)



Source: UCDA, 2020

Figure 15: Total value (USD) of exports (2008-2017)



Source: UCDA, undated

Table 24: Comparison of coffee exports in 2019/20 and 2020/21

Coffee type	2019/20		2020/2021		% change	
	Quantity (60 kg bag)	Value (USD)	Quantity (60 kg bag)	Value (USD)	Quantity (60 kg bag)	Value (USD)
Robusta	920,399	83.53 million	1,118,678	92,35 million	Increase 21.54	Increase 10.56
Arabica	228,285	27.65 million	162,561	22.33 million	-28,79	-19.22
Total	1,148,684	111.08 million	1,281,239	114.69 million	11,54	3,25

Source: UCDA, 2020

Text box 6

ECOTRUST: Trees of Global Benefit

The aim of Trees for Global Benefit (TGB) is to produce long-term, verifiable voluntary emission reductions by combining carbon sequestration with livelihood improvements. TGB is a cooperative carbon offsetting scheme that focuses on the smallholder farmer who is linked to the voluntary carbon market through the tree planting initiative based on the Plan Vivo standard. TGB started in 2003, in the Rubirizi and Mitooma districts. The project also aims to measure its impact with regards to climate change adaptation, biodiversity enhancement, watershed services and renewable energy provision. To-date there are 11,798 smallholder households with payment for ecosystem services (PES) agreements; 1,950,274 TCO₂ in terms of emissions reduction, 3,386,240 total PES payments, with 9,241 hectares under management. As of 2016, TGB commanded about 1.8% of the voluntary carbon market share, with 1,321.85 hectares of farmland for 1,533 farmers yielding an equivalent of 1 million tonnes of carbon worth USD 6 million. By the end of 2020, TGB was just short of 2 million tonnes with over 10,000 farmers.

Source: ECOTRUST, undated

European Union (71.9% in 2019) (pre-Brexit), US (9.92% in 2019), Morocco (5.85% in 2019), India (1.7% in 2019) and Russia (1.61% in 2019) (Gitonga, 2020). In the Eastern African region, Sudan is the main export destination for Uganda, with some of Uganda's robusta coffees also exported to Tanzania for processing into soluble coffee, which is packaged, and distributed to the regional market (Gitonga, 2020).

According to the June 2020 coffee export figures (Ministry of Finance, Planning and Economic Development, 2020), Uganda's coffee export performance in FY 2019/20 set a new record of 5.06 million 60-kg bags, an increase of 84% over the first decade of Vision 2040, with **export earnings also reaching a new level of USD 494 million**, representing an increase of 88% over the same period the previous year. According to the Ministry of Finance, Planning and Economic Development (2020), depending on how production figures for FY 2019/20 turnout, the year 2020 could see **Uganda, which is already Africa's largest coffee exporter, overtaking Ethiopia as Africa's largest coffee producer as well**. Coffee is one of the 14 focus commodities identified by H.E the President for Uganda's economic transformation in the wake of the COVID-19 pandemic and it is also one of the nine commodities under the Public Investment Management for Agro-industry (PIMA) strategy formulated by MoFPED in FY 2019/20 (Ministry of Finance, Planning and Economic Development, 2020). According to UCDA (undated) the **estimated number of people who depend on coffee is 12.1 million**.

Table 23 shows coffee exports for robusta and arabica for 2019/20 and 2020/21.

Coffee exports for the calendar year, January 2020 to December 2020, totalled 5.49 million bags worth **USD 515.94 million**, compared to 4.51 million bags valued at USD 436.54 million the previous year: this represents a 22% increase in quantity and 18% increase in value (UCDA, 2020).

Conclusion

Uganda already has a diversity of forest products, many of which are already providing substantial income and employment in local and national economies. There is, however, **a general lack of data on quantifying NTFPs and attaching value to these**. It is important to understand the value and the contribution

specifically to household incomes to highlight the importance of NTFPs and to encourage their sustainable use and long-term conservation.

A large part of the NTFP market is informal, and also in many cases illegal, so there is a need to create more formal markets and to regulate the trade in NTFPs to maximise the benefits from them, both locally and nationally.



Carbon

Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda have established the **East African Alliance on Carbon Markets and Climate Finance** (BMU, undated). The Alliance was officially launched in June 2019, with the specific objectives of (BMU, undated):

- Promoting a common vision on carbon markets and climate finance in the region;
- Fostering an active and better coordinated participation of delegates from the region in the UNFCCC negotiations on market mechanisms and climate finance as well as other international fora;
- Supporting readiness to implement Article 6 of the Paris Agreement.

Carbon storage in Uganda is characterised by biomass and soil organic carbon, with the highest storage for both above ground and soil carbon occurring in the montane areas of Elgon and Rwenzori (NEMA, 2019b). For above ground carbon, the high carbon storage in the montane areas is followed by the storage in a stretch of area along the Eastern border, the Lake Kyoga Basin and south-western Uganda (NEMA, 2019b). An assessment of soil carbon stocks (Soil Organic Carbon (SOC)) distribution in Uganda in 2010 showed that the Rwenzori region has the highest SOC (250-300 t/ha) followed by the Mt Elgon region and the Kisoro area (200-250 t/ha) (NEMA, 2019b). The northern and eastern regions including the Karamoja region have the lowest soil organic carbon content in the country (100-200 t/ha). The rest of the country has an SOC content of 150- 200 t/ha (GOU 2018 in NEMA, 2019b). The highest SOC is under the forest followed by crop land and shrubs, herbs and other vegetation. Between 2000 and 2010, 59 km² of forest was converted into cropland and 78 km² into shrub-grassland and sparse vegetation: this induced a change of 0.01% of total soil



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carbon stock in the top 30 cm of soil. An area of 130 km² initially under forest which has been converted into cropland, grassland and sparse vegetation is associated with a net loss of 146,961 tonnes of SOC that represents 0.01% of the total soil carbon stocks (GOU 2018 in NEMA, 2019b).

A comparison of carbon stock changes for protected areas shows that the area-weighted mean annual carbon changes in PAs of Uganda for the period 2000–2012 was 0.22 ± 1.36 t/ha, estimated to be a total carbon gain of 0.70 mega tonnes (Mt) per year (NEMA, 2019b). With a comparison of carbon stock changes for protected areas showing that the area-weighted mean annual carbon changes in PAs in Uganda showed annual carbon loss and gain ranging from –16 tonnes/ha to 13 tonnes/ha, on average (NEMA, 2019b). **National Parks and Wildlife**

Table 25: Landscape restoration opportunities in Uganda

Landscape zonation	Deforested land (ha)	Degraded land (ha)	Area for restoration opportunity (ha)
Afro-montane	133,613	8,997	691,161
Lake Victoria crescent	706,376	205,640	394,491
Northern moist	4,553,045	932	2,631,315
South East Lake Kyoga floodplain	193,094	9,002	393,640
Southwest rangeland	1,506,253	347,428	1,154,340
Western mid-altitude	1,890,117	554,055	1,039,520
Karamoja	684,161	0	1,775,156
Total restoration opportunity			8,079,622

Source: MWE and IUCN, 2016 in NEMA, 2019b



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Text box 7

The Murchison-Semliki REDD+ Project

Wildlife Conservation Society (WCS) and partners are implementing the Murchison-Semliki REDD+ project which is situated in western Uganda east of Lake Albert. The REDD+ project helps to mitigate global climate change and conserve the forests and wildlife of the Murchison-Semuliki Landscape by strengthening the management capacity of the farmers and providing access to more profitable markets. The Northern Albertine Rift Conservation Group (NARCG) and the government of Uganda (GOU) are carrying out activities designed to address the main drivers of deforestation and forest degradation in the landscape.

Project activities include: conservation farming and business saving groups. It is anticipated that the Project will prevent an emission of 41.2 million tonnes of CO₂e going into the atmosphere from privately owned forests and an additional 20.8 million tonnes of CO₂e from public forests over a project life time of 30 years, improving the livelihoods of rural communities, reducing their risk of reaching a poverty trap, and saving threatened wildlife.

Source: Leal & Kihumuro, undated

Reserves gained carbon, while the Central Forest Reserves (CFRs), Local Forest Reserves (LFRs) and Dual Joint Management (DJMs) areas lost carbon (NEMA, 2019b). In terms of numbers of PAs, 63% of the PAs lost carbon and the majority (70%) of these were CFRs, as forest protection in Uganda has primarily been intended for water catchment protection, habitat and biodiversity conservation (NEMA, 2019b). The **net carbon gain estimated from PAs suggest that PAs are an effective policy tool to reduce carbon emissions**, while LFRs and CFRs, as a major source of carbon loss, are an indication of the ineffectiveness of the PA management in high carbon forest areas in Uganda (NEMA, 2019b). Gizachew et al. (2018) in NEMA (2019b) found that although PA area sizes varied considerably, the rate of carbon loss or gain did not appear to depend on PA size. Therefore, whether PAs in Uganda have been effective at conserving carbon remain inconclusive, making the climate benefits of PAs uncertain (NEMA, 2019b).

According to NEMA (2019b), the restoration efforts in the country have been modest. Between 2011/12 and 2017/18, the Ministry of Water and Environment (MWE) documented restoration of just over 25,000ha of forests and wetlands (NEMA, 2019b). Under the Forest Landscape Restoration (FLR) Programme part of contribution to the Bonn challenge, the Ministry of Water and Environment and the International Union for Conservation of Nature (IUCN) identified about 8.08 million hectares for restoration (NEMA, 2019b): see Table 24.

Table 25 shows a list of some of the REDD+ projects in Uganda. All the projects in Table 25 are estimated to have total emission reductions of approximately 13.6 million tCO₂ and based on an average carbon price of USD 5 per tonne, these projects could provide a total income of approximately USD 68 million over the next 30-60 years (author calculations).

Film and photography

No data was found on the value of wildlife film and photography to the national economy. This wildlife economy activity has potential given the abundant natural resources in Uganda and the opportunity to earn revenue and create employment through wildlife documentaries and other film and photography products and services.

Table 26: Selected REDD+ projects in Uganda

Source: CIFOR, CEC, CIRAD & IFRI, 2021

Project name	Key stakeholders	Size	Annual emission reductions (tCO ₂)	Total emission reductions (tCO ₂)/duration (years)	Estimated revenue (USD)	Payments to communities
Natural high forest rehabilitation project on degraded land of Kibale National Park	Uganda Wildlife Authority; Face the Future (Netherlands)	10,000 hectares	74,181	4,450,862 74 years (start date 1994)	To-date (2021) USD 59,994 + USD 4,1 million equity form partner + USD 9,999 from UWA national aid/grant	Guaranteed purchase system – project purchases seedlings raised by community members
Kikonda Forest Reserve Reforestation Project	Global woods (Germany); Sustainable use of Biomass (SUB); Kikonda Community Forest Association (KiCoFA)	121,182 hectares	4,267	213,368 49 years (start date 2002)	USD 10,98 million	Conditional cash payment; PES scheme planned in which farmers will be paid for caring for tree lots assigned to them
Uganda Nile Basin Reforestation Project No 1	Ugandan National Forest Authority (NFA)	468 hectares	5,881	117,620 20 years (start date 2009)	Not available	Conditional cash payment. Community groups will receive full revenues from tCER sales
Uganda Nile Basin Reforestation Project No 2	Ugandan National Forest Authority (NFA); Kingdom of Spain; Eco-Carbone, S.A.S; JAPEX; Sumitomo Chemical; Idemitsu Kosan Co. Ltd; Japan Iron and Steel Federation; The Okinawa Electric Power Co Inc.; TEPCO; Sumitomo Joint Electric Power Co Ltd; Suntory Holdings Limited; Government of Italy; Luxembourg Ministry	370 hectares	4,861	97,224 60 years (start date 2008)	Not available	Conditional cash payment. Community groups will receive full revenues from tCER sales
Uganda Nile Basin Reforestation Project No 3	Ugandan National Forest Authority (NFA); Government of Italy; Luxembourg Ministry; Kingdom of Spain; Government of Canada; Eco-Carbone S.A.S; Japan	342 hectares	5,590	11,798 60 years (start date 2007)	Not available	Conditional cash payment. Community groups will receive full revenues from tCER sales
Uganda Nile Basin Reforestation Project No 4	Ugandan National Forest Authority (NFA); Government of Italy; Luxembourg Ministry; Kingdom of Spain; Government of Canada; Eco-Carbone S.A.S; Japan	347 hectares	3,969	79,395 60 years (start date 2008)	Not available	Conditional cash payment. Community groups will receive full revenues from tCER sales
Uganda Nile Basin Reforestation Project No 5	Ugandan National Forest Authority (NFA); Government of Italy; Luxembourg Ministry; Kingdom of Spain; Government of Canada; Eco-Carbone S.A.S; Japan	488 hectares	5,925	118,504 60 years (start date 2006)	Not available	Conditional cash payment. Community groups will receive full revenues from tCER sales

Table 26: Selected REDD+ projects in Uganda – continued

Project name	Key stakeholders	Size	Annual emission reductions (tCO ₂)	Total emission reductions (tCO ₂)/duration (years)	Estimated revenue (USD)	Payments to communities
Trees for Global Benefit	Environmental Conservation Trust of Uganda (ECOTRUST); CARE International; Edinburgh Centre for Carbon Management; Bioclimate Research and Development Ltd.; UNDP-TACC project; District local governments of Bududa, Manafwa & Mbale; Tree Talk-Straight Talk Foundation; Bitereko Women's Group	2,773 hectares	36,000	900,000 50 years (start date 2003)	Not available	Conditional cash payment. Payments for carbon sequestration to farmer participants; average payment of USD 904 over 10 years for one hectare area; Payments over 10 years: 30% upon verification of plantings; 20% after the first year, 20% in year 3; 10% in year 5; and 20% in year 10.
Bukaleba Forest Project	Busoga Forestry Co Ltd.; Green Resources AS; NFA; District Land Board; NEMA; Directorate of Water Development; Makerere Univ; National Forestry Research Institute (KIFU); Uganda Timber Growers Association; Public Health Institute; National Tree Seed Centre; EU Sawlog Production Grant Scheme; local NGOs	2,062 hectares	11,903	499,918 40 years (start date 2004)	Not available	Conditional cash payment. 10% of carbon revenues generated from carbon offset sales will be given back to local communities. Decisions on how to spend the money is decided by the community depending on their priorities.
Kachung Forest Project: Afforestation on Degraded Lands	Green Resources AS; Lango Forestry Co. Ltd.; NFA; District Land Board; NEMA; Directorate of Water Development; Makerere Univ; National Forestry Research Institute (KIFU); Uganda Timber Growers Association; Public Health Institute; National Tree Seed Centre; EU Sawlog Production Grant Scheme; Swedish Energy Agency; local NGOs	2,099 hectares	24,702	547,373 60 years (start date 2006)	Not available	Non-conditional cash payment. 10% of carbon revenues generated by the project are dedicated to community development initiatives in the villages surrounding the project.
TIST Program in Uganda, VCS 006	Clean Air Action Corporation (CAAC); Institute for Environmental Innovation	2,493 hectares	72,348	2,170,440 29 years (starting in 2003)	Not available	Conditional cash payment. Farmers get annual advance on potential cash revenues of USD 0.02/tree/year; ultimately farmers receive 70% of carbon profits.
Namwasa Central Forest Reserve Reforestation Initiative	The New Forests Company Limited	2,481 hectares	11,328	226,563 19 years (start date 2005)	Not available	Non-conditional cash payment
TIST Program in Uganda, VCS 003	Clean Air Action Corporation (CAAC); Berkeley Reafforestation Project; Environmental Services, Inc.	443 hectares	13,112	393,358 29 years (start date 2003)	Not available	Non-conditional cash payment. Farmers receive an annual advance on their potential carbon revenues, which eliminates the need for credit.
TIST Program in Uganda, VCS 004	Clean Air Action Corporation (CAAC); Berkeley Reafforestation Project; Environmental Services, Inc.	102 hectares	2,958	88,750 29 years (start date 2003)	Not available	Non-conditional cash payment. Farmers receive an annual advance on their potential carbon revenues, which eliminates the need for credit.

Table 26: Selected REDD+ projects in Uganda – continued

Project name	Key stakeholders	Size	Annual emission reductions (tCO ₂)	Total emission reductions (tCO ₂)/duration (years)	Estimated revenue (USD)	Payments to communities
TIST Program in Uganda, VCS 002	Clean Air Action Corporation (CAAC); Environmental Services, Inc.	165 hectares	4,801	144,016 29 years (start date 2003)	Not available	Non-conditional cash payment. Farmers receive an annual advance on their potential carbon revenues; tree payment based on live tree counts & the long-term profit sharing arrangement with the Small Groups.
TIST Program in Uganda, VCS 001	Berkeley Reafforestation Project; Environmental Services, Inc.	777 hectares	24,348	730,450 29 years (start date 2003)	Not available	Non-conditional cash payment. Farmers receive an annual advance on their potential carbon revenues; tree payment based on live tree
TIST Program in Uganda, VCS 005	ONF International; Clean Air Action Corporation (CAAC); Berkeley Reafforestation Project	723 hectares	19,342	580,246 29 years (start date 2003)	Not available	Conditional cash payment; guaranteed purchase system. Farmers receive an annual advance on their potential carbon revenues; payments are paid annually based on the number of live trees counted each year at a payment of USD 0.02 per tree per year.
TIST Program in Uganda, CCB-002	Clean Air Action Corporation (CAAC); Farmers	1,006 hectares	27,128	813,845 30 years (start date 2003)	Not available	Guaranteed purchase system. Farmers receive an annual advance on their potential carbon revenues; payments are paid annually based on the number of live trees counted each year at a payment of USD 0.02 per tree per year.
TIST Program in Uganda, CCB-001	Farmers	1,488 hectares	9,999	1,356,574 30 years (start date 2003)	Not available	Guaranteed purchase system. Farmers receive an annual advance on their potential carbon revenues; payments are paid annually based on the number of live trees counted each year at a payment of USD 0.02 per tree per year.
Reducing Emissions from Deforestation and Forest Degradation in the Murchison-Semuliki Landscape, Uganda	Wildlife Conservation Society	113.446 hectares	9,999	62,000 30 years (start date 2006)	Not available	No payment

Challenges and opportunities in terms of the wildlife economy

The below are some of the challenges and opportunities related to the wildlife economy in Uganda. These were developed through the research process for this case study as well as received from stakeholders in the stakeholder validation workshop held online on the 27th August 2021. The list of stakeholders present in the workshop is available on request.

Challenges

Lack of consistent, comparable data over time

As with most other countries, for all the wildlife economy activities, data was found to be inconsistent, often incomparable and although often good at a site-level, lacking at a national level. It is essential that the value of the wildlife economy, to local and national economies in terms of revenues and employment, is understood to ensure that policymakers and those allocating budgets are fully aware of its value.

Policy divergence

There is a need to ensure that policies to manage the wildlife economy are aligned to promote and encourage investment in the wildlife economy and to improve the ease of doing business in Uganda. There are still gaps in policy, despite an extensive regulatory framework, which provide incentives for illegalities in forest products as well as in the parks, for example through the procurement of illegal timber which is cheaper than certified, legal timber – this needs to be rectified.

Degradation of natural resources

The degradation of natural resources, as well as extinction of species (such as rhino), declining populations (such as lion) and invasive species, all impact on the asset base of the wildlife economy and, therefore, on its sustainability. Additionally, agro-chemicals impact on wildlife, particularly bees, which can have long-term negative consequences on sustainability and health.

Poor budget for natural resource management

Natural resource management is usually not, in comparison to many other sectors, well considered in terms of national budget allocations. This is due in part to a lack of understanding by

politicians and other decision-makers as to the value that wildlife provides to local and national economies (see the first challenge listed above).

Poaching and other illegal use

Illegal, unregulated and unreported activities in the wildlife economy all impact on sustainability of resources and also undermine the ability of the wildlife economy to contribute positively to local and national economies.

Population pressure

The fast growing population is putting pressure on resources, especially land which is limited. This creates further competition between people and wildlife and leads to increased human-wildlife conflict as well as reduced habitat for wildlife. The lack of land and opportunities also results in conflict within communities.

Poverty levels

High poverty levels in Uganda impact on conservation as many people rely on natural resources for livelihoods and subsistence, and there is also competition over land, as mentioned above.

Human-wildlife conflict

Human-wildlife conflict is a big challenge in Uganda partly due to the increasing human population, a lack of buffers around protected areas, cultivation of crops right up to protected area boundaries and a lack of available land to expand agricultural activities and/or protected areas.

Climate change

The impacts of climate change on natural resources (wildlife), landscapes and people are already having an impact on the wildlife economy and this threat will continue to grow if investment is not made in mitigating the impacts.

Poor/inadequate infrastructure to support the wildlife economy

Poor roads, a lack of airfields at a protected area level, and a lack of diverse accommodation, amongst others (including affordable accommodation for Ugandans), are all factors which impact on the wildlife economy and unlocking its potential in Uganda.

Capacity building

There is a need for capacity building in terms of an understanding of the diversity of wildlife economy activities and how to engage in and develop them, as well as in terms of diversification of existing wildlife economy activities, such as tourism.

Marketing of wildlife economy activities and products

There is a need to improve marketing of wildlife economy activities and products. This is not limited to tourism marketing but also includes the marketing of forest products and the promotion of the use of local suppliers of goods and services. Community-based enterprises especially need to be marketed better and the quality of goods and services improved to meet required standards.

Transboundary issues

Transboundary resources can be a challenge in terms of poaching, illegal use, etc. but they also provide an exciting opportunity for regional collaboration and partnerships to unlock the potential of the wildlife economy and to share learnings.

Land use planning

Infrastructure development in and around protected areas, such as the upgrading of roads through protected areas, increasing number of tourism lodges which use natural resources such as water, etc., could negatively impact on wildlife and therefore the wildlife economy. Land use planning needs to be done collaboratively between different public sector institutions to ensure sustainability and long-term conservation of natural resources.

Macro-level economic challenges

Changes in terms of inflation, which affects production and value, impact on the viability of some wildlife economy activities and also on production, e.g. for forest products.

Opportunities

Enabling policy

The Wildlife Act and various other legislation supports the wildlife economy, though as discussed in the challenges, some areas of divergence and overlap need to be looked at to allow for increased growth in the wildlife economy.

Resource access

UWA allows community members to use the boundaries of protected areas to set up beehives and controlled access is also allowed to collect various resources: this helps to develop a constituency for conservation. There are other opportunities in terms of beekeeping (pers. comm. D. Aturinde Elly, TUNADO, August 2021): i) increase in beekeeping by setting up hives along the boundaries of the protected areas through Memoranda of Understanding ii) if the beekeeping activities work, then the bees can help with solving human-wildlife conflict iii) apitourism is possible where visitors can come in and see how beekeeping is done in Uganda, e.g. the BEESAFARI that TUNADO organised in 2020 with Bees for Development, a UK charity.

Good climate and diversity

Uganda has a good and diverse climate across the country which results in a diversity of species and landscapes which provide diverse wildlife economy activity options. Uganda's location in the region in terms of the eco-tones and regional vegetation results in great diversity and opportunities to diversify wildlife economy products and services.

Political stability

The current stable political situation is good for investor confidence.

Growth potential

The existing markets for different wildlife economy products and services are not yet saturated and there are numerous new markets available which provides many opportunities for growth and development. There is growing interest in wildlife-related farming, e.g. ostrich, especially around urban areas: this could provide more areas under conservation, employment, revenues and wild meat supply. There are also opportunities in terms of carbon credits due to the forests in Uganda and these

need to be unlocked, as well as in terms of other ecosystem services. Uganda currently imports many forest-based products which are expensive: the sustainable harvesting of forest-based products or the establishment of cultivated areas to provide these also offer opportunities in terms of employment and revenues.

Transboundary business agreements

To-date transboundary agreements include terms related to conservation but do not include anything in terms of business and it would be useful to include these to promote greater inter-regional trade and economic activities.

Improvement to existing models

Revenue-sharing also offers an opportunity as Uganda has one of the best models in East Africa which enables the communities to participate in conservation and ensures that the wildlife economy thrives. Effective administration of the scheme is, however, still lacking, which is a challenge as projects implemented to-date are not always encouraging and communities don't always see results. There is an opportunity to refine the legal framework and guidelines to ensure effective and efficient administration to improve results.

Technology

Innovations in technology offer an opportunity to engage the youth more in the wildlife economy through media communications, etc. They also allow for diversification of wildlife economy activities through virtual tours, access to markets, etc.

Competition and collaboration

The competition between countries and changes resulting from climate change both provide an opportunity for innovation, as does the emergence of economies from the COVID-19 pandemic. UWA is already innovating in terms of adding certification to management activities. There is a need now to establish creative, innovative collaborations and partnerships between the public and private sectors, as well as with communities and across countries in the region. Regional marketing of wildlife economy activities is one option, as well as ensuring ease of business between countries.

Main recommendations

Stakeholder dialogues

A series of stakeholder dialogues for the public sector, private sector, communities, NGOs, development partners, followed by a multi-stakeholder dialogue to discuss the challenges and opportunities and how to unlock the potential of different wildlife economy products and services could provide practical recommendations for policy and practice.

Policy and institutional review

Given the diversity of legislation related to the wildlife economy and the number of departments/ministries involved in it, it is recommended that there is a full policy review to streamline policies and avoid overlapping policies; identify policy gaps; etc. The same should be done for institutions involved in the wildlife economy to ensure greater efficiency and to maximise impact.

Regional collaboration

Regional collaboration can be encouraged through workshops/dialogues between East African countries where there is a sharing of best practices and lessons learned and discussions related to opportunities to partner and promote the region, maximising on the various strengths of the different countries. An EAC Regional Wildlife Economy Strategy, developed collaboratively, could provide direction and guidance for regional collaboration and unlocking the regional as well as national and local wildlife economies.

Establishment of data collection and analysis protocols

Given the large data gaps and inconsistencies in terms of data across wildlife economy activities it is recommended that there is the establishment of data collection and analysis protocols, which allow for the collection of comparable data over time, and would also be useful in terms of data-driven decision-making. The types of data that would be important include levels of investment in wildlife and wildlife economy activities, turnover, number of jobs, wildlife stocks, hectares under conservation management, management effectiveness of these areas, size of different sectors such as ecotourism, hunting, wildlife ranching, etc.

The **establishment of national-level data collection and M&E strategies**, as well as databases and a dedicated national



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team (or through collaborations with NGOs and academic institutions) to collect this data would be useful for long-term monitoring and evaluation. These systems and teams should be embedded within the National Bureau of Statistics or Ministries/ Departments of M&E or within Wildlife Research Institutes to ensure sustainability. The further aggregation of national data to a regional level in the East African Community would also enable data-driven decision-making at the regional level.

Conclusion

Uganda is endowed with rich natural resources which form the basis of the wildlife economy. Degradation and illegal, unreported and unregulated activities are, however, negatively impacting on the potential to grow the wildlife economy. These need to be addressed along with improving rankings in terms of the Corruption Perception Index to improve investor confidence and unlock new and innovative wildlife economy activities.

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