State of the **Wildlife Economy** in Africa

Case Study: Ethiopia

ALU SCHOOL OF WILDLIFE CONSERVATION

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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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CONTENTS


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List of acronyms

AfDB: African Development Bank
AMCR: Arba Minch Crocodile Ranch
AU: African Union
AWF: African Wildlife Foundation
BMNP: Bale Mountains National Park
CBD: Covention on Biological Diversity
CDM: Clean Development Mechanism
CITES: Convention of International Trade in Endangered Species
CHAs: Controlled Hunting Areas
CMS: Convention on the Conservation of Migratory Species
CSA: Central Statistical Agency
DEFF: Department of Environment, Forestry and Fisheries
EBI: Ethiopian Biodiversity Institute
EEPA: Ethiopian Environmental Protection Authority
ERPA: Emission Reductions Purchase Agreement
ETB: Ethiopian Birr
ETSA: Ethiopia Tourism Satellite Account
EWCA: Ethiopian Wildlife Conservation Authority
FAO: Food and Agriculture Organization
FDRE: The Federal Democratic Republic of Ethiopia
FZS: Frankfurt Zoological Society
GEF: Global Environment Facility
GDP: Gross Domestic Product
GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit
HUSA: Hunting for Sustainability in Africa
IIAG: Mo Ibrahim Index of African Governance
IGAD: Inter-Governmental Authority in Development
IMF: International Monetary Fund
ISFL: Initiative for Sustainable Forest Landscapes
ITC: International Trade Centre
IWT: Illegal Wildlife Trade
MoA: Ministry of Agriculture
MEFCC: Ministry of Environment, Forest and Climate Change
NDC: Nationally Determined Contributions
NEB: National Bank of Ethiopia
NTFP: Non-Timber Forest Product
OLFP: Oromia Forested Landscape Programme
PAs: Protected Area
PFM: Participatory Forest Management
PPP: Public-Private Partnership
REDD: Reducing Emissions from Deforestation and forest Degradation
SDPASE: Sustainable Development of the Protected Area System of Ethiopia
TSA: Tourism Satellite Account
UNDP: United Nations Development Programme
UNEP: United Nations Environment Programme
UNEP-WCMC: United Nations Environment Programme World Conservation
UNESCO: United Nations Educational Scientific and Cultural Organisation
UNFPA: United Nations Population Fund
USD: United States Dollar
Monitoring Centre
UNWTO: United Nations World Tourism Organization
VCM: Voluntary Carbon Market
WEII: Wildlife Economy Investment Index
WCO: World Customs Organisation

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, as well as country case studies for all African countries, 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 had 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 was 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. Ultimately, the aim of the ALU SOWC research 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 full report focused on five main wildlife economy activities: ecotourism, hunting, wildlife ranching, carbon finance and 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 all ALU SOWC wildlife economy reports, including this one, 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 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 covered 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. Throughout the report, text boxes were 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, attempts were made to allow for generalisations, and where not possible, caveats or specific enabling factors have been highlighted.

This report is part of the series of national State of the Wildlife Economy reports for Africa to provide an important baseline for the country, as well as to identify challenges and opportunities for growing and unlocking the wildlife economy.

Data collection process

A research 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. Given various time and budget constraints, and limited access to printed documents, it was decided to largely focus on conducting a literature review, as well as desktop research and, where possible, contacting in-country sources to gather data.

Where possible, future research aims to conduct more primary research and data collection. Currency amounts 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.

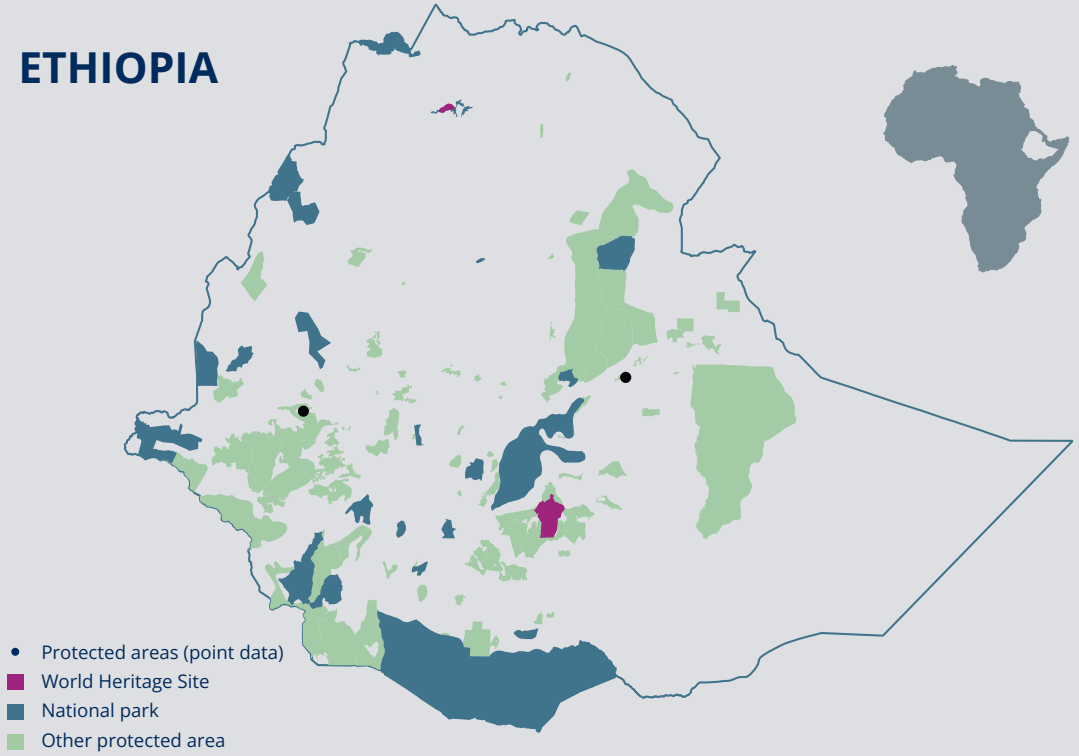
During the research for the full report as well as the subsequent national reports, it was found that very few countries in Africa have a good understanding of the value of the wildlife economy at a national level. For certain wildlife economy activities there was information and data available at a 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 includes 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. It also, where possible, includes stakeholder workshops and external reviews of the case study by relevant experts.

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 total value of the wildlife economy. The data collection process is in no way exhaustive and is done with the purpose of providing an illustrative overview of the wildlife economy. Following on from the full report, the Roadmap for Africa's Wildlife Economy report and numerous country case studies, this case study focuses on the state of the wildlife economy in Ethiopia. The data collection process for this case study followed the same steps as for the main report but also included a virtual stakeholder inception workshop.

All country case studies follow the same structure to allow for comparisons and ease of reading.

Please see https://sowc.alueducation.com/research/ for all publications to-date.

ETHIOPIA



Socio-economic/governance

GDP per capita (USD)
1,272

Gini coefficient
54.5

Transparency International Corruption Perceptions Index
Ranked 99th
out of 180 countries

Total population
129.7 million

Mo Ibrahim Governance Index
Scored 48.4
out of 100

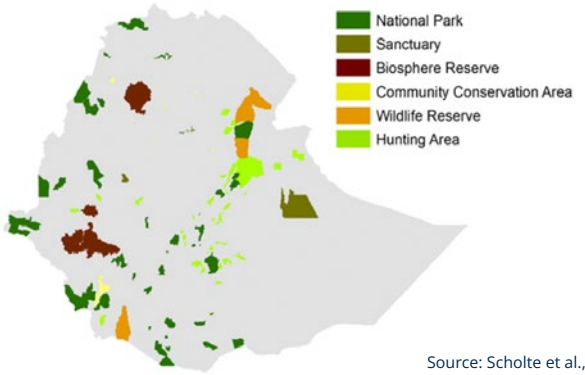
Mo Ibrahim Governance Index
Ranked 29th
out of 54 countries

Sources: IIAG (2024); Transparency International (2024); UNEP-WCMC (2025); UNFPA (2024); World Bank (2023); World Bank (2023); World Economics (2019)

Protected areas

1,128,980km² Total Land Area
139 Protected Areas
17.03% Terrestrial Protected Area
39 Controlled Hunting Areas
24 National Parks
57 National Forest Priority Areas
2 UNESCO-MAB Biospheres
2 World Heritage Sites
6 Game Sanctuaries
6 Wildlife Reserves

Actual wildlife protected area network in Ethiopia



Source: Scholte et al., 2025

Overview of the wildlife economy in Ethiopia

Forest products

- Approx. 11.6 million rural households in Ethiopia depend on Non-Timber Forest Products (NTFPs) for their livelihoods, with an estimated 57 million people engaged part-time or full-time in NTFP collection.
- The average annual income generated from NTFPs per household is approx. Ethiopian Birr (ETB) 16,086 (approx. USD 122), with forest coffee alone providing an average of ETB 12,745 (approx. USD 98) annually.
- Beekeepers produce between 53,000 and 58,000 tonnes of honey annually, managing around 6.98 million bee colonies.
- It has been estimated that NTFPs provide up to USD 2.3 billion per annum to the national economy
- Coffee exports reached 248,129 tonnes valued at USD 821.14 million during 2019/20, with the sector involving over four million smallholder farmers.
- As of 2018, Ethiopia was among the world's top honey producers, the fourth-largest beeswax producer globally, and the tenth-largest honey producer worldwide with more than one million beekeepers, generating approx. USD 3.26 million annually from honey production.
- In 2019, Ethiopia earned approx. USD 10 million from frankincense exports.

Wildlife ranching

- Arba Minch Crocodile Ranch (AMCR) holds a stock of 3,600 crocodile skins and 1,000 crocodiles ready for processing, but has had no commercial skin sales since 2000 due to a collapsed market.
- Over ETB 1 million (approx. USD 7,668) is required annually just to cover feeding costs at AMCR, highlighting the financial challenges of maintaining a crocodile ranch.

Carbon finance

- In total, over 2 million carbon credits have been issued in Ethiopia from both the Clean Development Mechanism (CDM) and Voluntary Carbon Market (VCM) standards.
- Under the Bale Mountains eco-region REDD+ project communities received USD 42,500 in carbon payments.

Tourism

- In 2019, visitors' direct spending was USD 2.4 billion while the overall contribution to GDP was estimated at USD 4.8 billion (2.7% of GDP).
- The overall contribution of ecotourism to federally managed wildlife areas was approx. USD 58.5 million in 2019, with direct revenue from park entrance fees amounting to approx. USD 4 million.
- It is anticipated that by 2030, tourism could contribute over USD 5 billion annually to GDP, with international arrivals exceeding two million visitors.
- Total visitors to Protected Areas (PAs) administered by Ethiopian Wildlife Conservation Authority (EWCA) reached approximately 408,600 in 2019, approx. 10% of all incoming tourism in the country and the overall estimated contribution was USD 58.5 million.

Wildlife trade

- Ethiopia generated over USD 2.6 million from legal live wildlife and civet musk exports between 2014 and 2023.
- Ethiopia is the world's leading supplier, contributing more than 90% of the total civet musk used globally in the perfume industry.

Fisheries

- The fisheries sector directly employs approx. 15,000 fishers and supports over 100,000 people through associated activities.
- Approx. 38,400 tonnes of fish are consumed domestically, though production potential exceeds 94,000 tonnes annually.
- The majority of fish consumed in Ethiopia come from the wild and are harvested using artisanal (small-scale) fishing techniques

Hunting

- Between September 2022 and August 2023, only 29.4% of the annual hunting quota was utilised in Ethiopia, with 207 animals hunted out of an allocated 704.
- The United States accounted for 71% of Ethiopia's CITES-listed trophy exports between 2014 and 2023, making it the leading importer.
- In 2014, Ethiopia's hunting industry generated approx. USD 4 million in direct revenue and an additional USD 1 million in related economic benefits.

Sources: Admasu, (2020); African Development Bank (AfDB) (2023); African Parks (2025); Asfaw et. al., (2022); Beyene et. al., (2025); BioCarbon Fund (2023); CITES (2025a); Eastern Africa Alliance On Carbon Markets And Climate Finance (undated); ETSA (2024); GIZ (2020); Gonfa (2019); Hagazi et al., (2021); Hebano & Wake, (2020); ITC (2020); Tourism Economics (2021); Worku, (2014, 2023).

Key messages

- Ethiopia has significant potential for growth in the wildlife economy, including ecotourism, hunting, wildlife ranching, aquaculture, non-timber forest products (NTFPs), and carbon markets. However, sustainable management and governance reforms are crucial to balance economic development with biodiversity conservation.
- Tourism is a major contributor to Ethiopia's economy, with international arrivals reaching 1.2 million in 2024 and the sector contributing nearly USD 4.8 billion to GDP. The tourism sector supports job creation and has a potential to contribute over USD 5 billion annually to GDP by 2030. To realise this potential, Ethiopia must strengthen its investment-enabling environment, improve infrastructure, and ensure security and access to remote protected areas.
- Ecotourism in Ethiopia leverages its rich biodiversity and high endemism, offering opportunities for nature-based tourism in protected areas. While the number of tourists visiting protected areas dropped due to COVID-19 and conflict, domestic tourism is rebounding. Improving infrastructure and marketing to diaspora and local tourists could help diversify the ecotourism base and increase revenues.
- Trophy hunting is a legal and regulated activity in Ethiopia, generating revenue for the country.
- Wildlife ranching presents an opportunity for diversification however, strategic investment, policy support, and learning from regional examples are essential to grow this sector.
- Fisheries play a key role in food security and income generation. Although annual fish consumption is approx. 38,400 tonnes, the production potential exceeds 94,000 tonnes, indicating significant untapped capacity.
- Non-Timber Forest Products (NTFPs), including wild coffee, honey, gums, resins, and medicinal plants, are vital for rural livelihoods. Over 11.6 million households rely on NTFPs, contributing an average annual income of USD 122 per household.
- Carbon markets are emerging as a promising sector, with over 10 million carbon credits issued from 35 registered Voluntary Carbon Market projects. Most credits are from forestry-based initiatives, demonstrating the country's potential to align climate mitigation with ecosystem restoration and rural development.
- Sustainable management and policy implementation are essential to ensure that Ethiopia's wildlife economy can support conservation and provide long-term socio-economic benefits. Improved governance, community participation, and private sector engagement will be key to unlocking this potential.

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Introduction to the natural resources and biodiversity in Ethiopia

Ethiopia is an **important biodiversity hotspot** characterised by diverse ecosystems ranging from Afro-alpine highlands to lowland savannas, and hosting numerous endemic species (Chimdesa & Begna, 2021). It has been noted that Ethiopia's topographical and environmental diversity has played a key role in shaping the country's biodiversity patterns (Fashing et al., 2022). **One of the most striking features of Ethiopia's biodiversity is its high level of endemism**. **Over 10% of Ethiopia's vascular plant species are endemic to the country** see Table 1 (CBD, 2024). This is largely attributed to Ethiopia's unique geology and topography, which has created a wide range of microhabitats that allow for the evolution of distinct and highly specialised plant species (Ibid.).

Ethiopia has established a variety of protected areas to conserve its diverse wildlife and ecosystems. **The country has a total of 139 protected areas covering 17.03% of the country, with 192,216 km² of land area covered** (UNEP-WCMC, 2025)**.** As of 2025, the distribution of these are shown in Table 2 (please note that data presented in this table is from UNEP-WCMC, 2025 but it was observed that different sources report different numbers of protected areas in Ethiopia) such as Scholte et al., 2025 reported Ethiopia's PAs coverage is approx. 10%.. For example UNEP-WCMC 2025 data reports two biosphere reserves yet the Ethiopian Biodiversity Institute reports five (EBI, 2025). **Ethiopia is home to two of the world's 36 recognised global biodiversity hotspots: the Horn of Africa Hotspot** and the **Eastern Afromontane Hotspot** (Sh. Abdirahman Elmi, 2025).

The country's protected areas are home to distinctive wildlife, including the Ethiopian wolf (*Canis simensis*), Mountain nyala (*Tragelaphus buxtoni*), Gelada baboon (*Theropithecus gelada*), and Walia ibex (*Capra walie*), all of which are endemic to Ethiopia (World Bank, 2021). These areas also support **globally significant bird populations**, **with 861 species recorded, of which 16 are endemic to Ethiopia** (CBD, 2024). Another report recorded more than 881 bird species with 18 of which are endemic (Asefa et al., 2024).

Ethiopia's highest species richness is found in the deciduous woodlands and bushlands in the southern and south-eastern parts of the country, but the highest richness of endemics is found in the south-eastern, north-western and southwestern highlands (Tessema et al., 2022). This is due to the geological diversity of these regions, which has created a range of different soil types and microclimates to support a wide range of plant and animal life (Ibid.). Biodiversity in Ethiopia does not follow the typical pattern of increasing species richness with higher altitude (Demissew et al., 2021). Instead, it peaks at intermediate elevations rather than in lowland or highland areas (Ibid.).

The protected areas serve as lifelines to many Ethiopian communities who depend on natural resources for their livelihoods through the sustainable harvest of forest products, ecotourism opportunities, and ecosystem services (GEF, 2016). **Forests play a vital role in ensuring food security and sustainable livelihoods for most households** (Tazebew & Woldie, 2023). Forest biodiversity provides ecosystem services, including provisioning, regulating, supporting and cultural services, with an estimated contribution of 4% to GDP, through the production of honey, forest coffee, natural gums and timber (CBD, 2014). **In 2014 it was estimated that approx. 26-30% of the country's total coffee production originated from wild and semi-managed coffee forests** (Ibid.). However, **overexploitation of these forest products is a pressing concern** and continues to demand attention (Van Zyl, 2015).

Ethiopia harbours 1,715 vertebrate species, including 188 (11%) endemic species (Asefa et al., 2024). However, many of them have an unfavourable conservation status: 109 species are globally threatened, and 384 species are experiencing decreasing trends in population sizes (Ibid.). **The main direct threats to Ethiopia's biodiversity are habitat degradation, unsustainable grazing practices, deforestation, and agricultural expansion, which continues to disrupt and fragment critical habitats** (Chimdessa & Begna, 2021). These activities severely degrade biodiversity and compromise essential ecosystem services (Ibid.). **Climate change further exacerbates these challenges**, with droughts and extreme weather events increasingly threatening already vulnerable protected areas (Van Zyl, 2015).

Table 1: Endemic species found in Ethiopia

Species	Count	Endemic species	Conservation status	Source
Amphibians	79	35	9 threatened	Spawls et al., 2023
Birds	861	16	31 threatened	CBD, 2024
Fish	200	40	2 threatened	CBD, 2024
Mammals	284	29	20 threatened	IUCN, 2019
Plants	6,000	600	103 threatened	CBD, 2024
Reptiles	220	21	1 threatened	Spawls et al., 2023

Table 2: Number of protected areas in Ethiopia based on the national designation*

Designations	Numbers
Controlled Hunting Area	39
Forest Priority Area	57
Open Hunting Area	3
Wildlife Reserve	6
Sanctuary	6
National Park	24
International designation	**Numbers**
Ramsar Site, Wetland of International Importance	2
World Heritage Site (natural or mixed)	2

*Please note that data presented in this table and the main map on page 7 is from UNEP-WCMC, 2025 but it was observed that different sources report different numbers of protected areas in Ethiopia (see map bottom of page 7 and Scholte et al., 2025 for more information).
Source: UNEP-WCMC, 2025

Among Ethiopia's 10 ecosystems, **the Afro-alpine and Sub-Afro-alpine ecosystems are particularly impacted by habitat conversion** (CBD, undated). As listed above, unsustainable resource use poses significant threats to the country's ecosystems, while invasive species specifically jeopardise the Acacia-Commiphora Woodland, Desert and Semi-Desert Shrubland, and Aquatic ecosystems (CBD, undated).

Conservation efforts are underway to address the threats to Ethiopia's unique biodiversity. One such effort is the establishment of national parks and protected areas, including the Simien Mountains National Park and the Bale Mountains National Park (Dawson et al., 2019). These parks provide a habitat for many of Ethiopia's iconic species and are important for both conservation and ecotourism (Ibid.). **Partnerships and collaboration are essential in restoring and managing protected areas in Ethiopia.** A key example is the recent collaboration between African Parks, the Ethiopian Wildlife Conservation Authority (EWCA) and the President of the Gambella Peoples' National Regional State (See Text box 1 for more details).

Unlocking and growing the wildlife economy in the country offers opportunities to address the various challenges and threats to conservation. One opportunity is developing diverse eco-friendly and sustainable ecotourism in protected areas, which can, if sustainably managed, generate income for conservation initiatives, create employment opportunities, and improve living standards for local communities. These economic benefits, in turn, encourage active participation in conservation efforts (World Bank, 2021; Amare, 2015). Other opportunities include expansion and diversification in wildlife ranching, forest products and aquaculture.

Ethiopia's rich biodiversity and natural resources are not only vital for ecological balance but also serve as unique assets that set the country apart. With high levels of endemism, including iconic species such as the Ethiopian wolf and Walia Ibex, Ethiopia holds significant potential for conservation-driven tourism and sustainable economic opportunities. However, the effective management of these assets requires urgent attention, as threats such as habitat loss, climate change, and unsustainable resource use continue to put pressure on the country's wildlife and ecosystems. **Strengthening conservation policies, enhancing community involvement, and investing in sustainable management strategies will be essential to safeguarding Ethiopia's unique biodiversity while unlocking its full potential for economic and environmental resilience.**

Text box 1

African Parks and Ethiopia partner to restore and develop Gambella National Park

In 2024, African Parks entered into a 10-year renewable management agreement with the Ethiopian Wildlife Conservation Authority (EWCA) and the President of the Gambella Peoples' National Regional State (the Gambella State) to help restore the landscape and channel significant investment into the region. **Gambella National Park is one of Ethiopia's largest protected areas**, spanning 4,575 km² along the South Sudan border. Home to some of Ethiopia's richest biodiversity, Gambella hosts the country's largest remaining population of savanna elephant (*Loxodonta africana*), along with Nubian giraffe (*Giraffa camelopardalis*), white-eared kob (*Kobus kob leucotis*), and the threatened Nile lechwe (*Kobus megaceros*). The partnership aims to boost tourism in Gambella, an under-visited yet ecologically rich destination. The Park is part of a transboundary ecosystem, linked with Boma and Badingilo National Parks in South Sudan, also managed by African Parks. Aerial surveys have confirmed an annual migration of six million antelope, making it **the largest terrestrial wildlife migration on the planet,** surpassing even the Serengeti's famous wildebeest movement. It is not only the largest but also the longest mammalian migration: a reported round-trip distance of 825 km, which is 325 km longer than the Plain zebra trip made in Namibia and Botswana (Schapira et al., 2017).

A year-long transition phase will allow African Parks to assess socio-political dynamics, strengthen community relations, and develop tourism infrastructure. **Improving accessibility and local engagement will be key priorities,** ensuring that conservation strategies are context-sensitive and inclusive of surrounding communities. Gambella has, however, faced long-standing conflicts between Nuer and Anuak communities, encroachment from agricultural expansion, and persistent poaching, including by South Sudanese refugees and local settlers. Reports in 2015 highlighted wildlife killings by soldiers, reflecting the complex conservation landscape.

Despite these challenges, this partnership marks a turning point, promising both biodiversity protection and economic benefits for local communities. The partnership between African Parks, EWCA and the Gambella State will not only protect the region's natural heritage but also create economic opportunities for the surrounding communities. By integrating conservation with sustainable development, this initiative sets the foundation for a prosperous and resilient future for Gambella National Park.

Sources: African Parks, 2025; Mukpo, 2025

Socio-economic overview

As of 2024, Ethiopia's population was estimated at approx. 129.7 million people (UNFPA, 2024), making it the **second-most populous country in Africa** after Nigeria. **Ethiopia is characterised by remarkable ethnic diversity, with over 80 different ethnic groups**, the largest being the Oromo (approx. 35%), followed by the Amhara (27%), and Tigrayans (6%) (CSA, 2022). The country has a **relatively high population density** of 115 people per km^2 (World Bank, 2023b). The population shows a nearly equal gender distribution, with females accounting for 49.9% and males 50.1% of the total population (CSA, 2022). **Ethiopia remains predominantly rural, with about 78% of the population living in rural areas** and only 22% in urban settings (World Bank, 2023b). This rural-urban distribution significantly influences the country's development dynamics and economic activities, particularly in the agricultural sector. The population is also notably young, with a median age of 19.8 years, presenting both opportunities and challenges for the country's development (UNFPA, 2024).

Ethiopia's economy has demonstrated significant growth over the past decade, with a Gross Domestic Product (GDP) of USD 163.7 billion in 2023 (World Bank, 2023a). The GDP per capita was approx. USD 1,272 in 2022, positioning Ethiopia as a low-income country aspiring to reach lower-middle-income status (World Bank, 2023b). **The country maintained an average annual GDP growth rate of approx. 9.5% between 2010-2020, making it one of Africa's fastest-growing economies** (World Bank, 2023b). However, this growth has been challenged by recent internal conflicts, the COVID-19 pandemic, and climate-related shocks (AfDB, 2023).

The Ethiopian economy is structured around three main sectors: agriculture, services, and industry. **Agriculture remains fundamental to Ethiopia's economy**, serving as a primary source of livelihood for the majority of the population, particularly in rural areas (World Bank, 2023b). The service sector has shown growth in recent years, particularly in urban areas, while the industrial sector, though smaller, continues to develop (AfDB, 2023). **Ethiopia's export earnings are significantly dependent on agricultural products, with coffee being a key export commodity** (World Bank, 2023b). This economic structure reflects Ethiopia's status as a primarily agrarian economy in transition, though exact sector contributions fluctuate yearly based on various factors, including climate conditions and global market prices.

Unemployment remains a significant challenge, particularly in urban areas. The unemployment rate was estimated at 19.1% in 2023, with youth unemployment being particularly high at approx. 25.9% (CSA, 2022). Urban unemployment rates are significantly higher than rural rates, partly due to rural-urban migration and limited formal sector job opportunities in cities (World Bank, 2023c). **Ethiopia faces substantial challenges related to poverty and inequality.** According to the World Bank (2023c), **approx. 24% of the population lived below the global poverty line in 2022**. The country's Gini coefficient was recorded at 54.5 in 2019, indicating moderate income inequality compared to other African countries (World Economics, 2019). While this represents an improvement from previous decades, significant disparities persist between urban and rural areas.

In terms of governance indicators, Ethiopia ranked 99th out of 180 countries on the Transparency International Corruption Perceptions Index in 2023, with a score of 37/100 (Transparency International, 2024), indicating a moderate level of perceived public sector corruption. The Mo Ibrahim Index of African Governance (IIAG) scored Ethiopia at 48.4/100 in 2023 (giving it a ranking of 29th), highlighting areas requiring improvement in terms of governance, particularly in human rights and participation (Mo Ibrahim Foundation, 2024).

Land tenure in Ethiopia follows a unique system established by the 1995 Constitution, where all land is owned by the state and the people, with people and communities granted user rights (Cochrane & Bekele, 2022).

The current land tenure system recognises three main categories (Ibid.):

1. **State land:** owned and administered by the federal or regional governments
2. **Communal land:** community use rights for grazing and other shared purposes
3. **Individual holdings:** where farmers have use rights but cannot sell or mortgage the land.

This land tenure system has implications for agricultural development, investment, and natural resource management. While it provides some security of tenure for smallholder farmers, it can also constrain agricultural modernisation and limit access to credit since land cannot be used as collateral (Wossen & Abdullahi, 2023).

The development trajectory of Ethiopia is guided by its Ten-Year Development Plan (2021-2030), which aims to achieve inclusive growth and development through structural transformation (National Planning and Development Commission, 2021). The Plan focuses on the following:

1. Agricultural modernisation
2. Industrial development
3. Private sector development
4. Digital transformation
5. Climate resilient green economy

Despite significant economic progress in the country, Ethiopia continues to face various **socio-economic challenges**, including:

- High inflation rates which averaged 33.7% in 2022 (NBE, 2023; World Bank 2023a)
- Persistent foreign exchange shortages affecting trade and investment (AfDB, 2023; IMF, 2023)
- Significant infrastructure gaps, particularly in rural areas (World Bank, 2023a; National Planning and Development Commission, 2021)
- High climate vulnerability affecting agricultural productivity and food security (World Bank, 2023d; FDRE, 2021)
- Limited access to basic services in rural areas, impacting human development outcomes (World Bank, 2023c; UNDP, 2023)

Ethiopia's growth is fueled by its rich resources, diverse population, and strategic reforms. However, challenges such as unemployment, poverty, and climate vulnerability persist. Text box 2 gives an overview of Ethiopia's scoring and ranks in the African Leadership University School of Wildlife Conservation's Wildlife Economy Investment Index. **Sustainable economic diversification and inclusive development will be key to unlocking the country's full potential and ensuring long-term resilience**.

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Text box 2

Wildlife Economy Investment Index (WEII) results for Ethiopia

According to the WEII report for Ethiopia, the country scored in the bottom third in terms of investment safety, specifically in terms of property rights and security and stability. The country performed averagely in terms of overall wildlife status and investment-enabling environment. The country scored in the upper third in a number of indicators including wildlife legal framework, money growth and endemic species.

In terms of recommendations from the WEII report, the below were highlighted:

- To reduce competition barriers;
- To invest in infrastructure for tourism;
- To promote peace;
- To improve waste management practices;
- To reverse wetland loss;
- To enhance wildlife management.

For more detail on these recommendations and for the full scorecard for Ethiopia on all 280 indicators, please see Ethiopia's WEII report. The Wildlife Economy Investment Index (WEII), developed by the African Leadership University's School of Wildlife Conservation, aims to evaluate the potential of African countries in terms of their wildlife assets and the investment-enabling environments related to the wildlife economy. It is a comprehensive tool that gauges five fundamental pillars: wildlife assets, wildlife management, ease of doing business, public sector capacity, and investment safety.

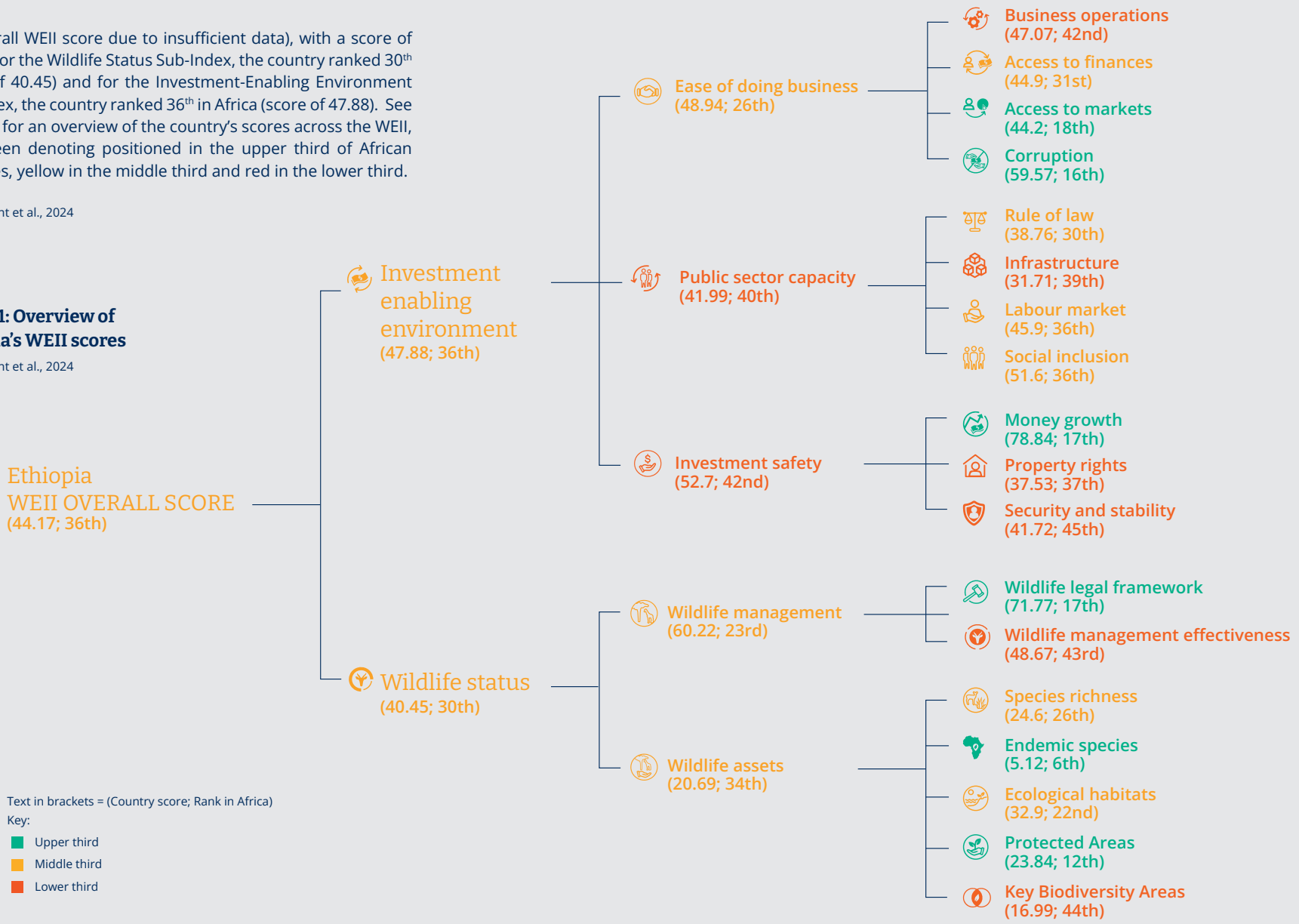
In the overall WEII rankings, Ethiopia was 36th out of 53 countries (São Tomé and Príncipe were not included in

the overall WEII score due to insufficient data), with a score of 44.17. For the Wildlife Status Sub-Index, the country ranked 30th (score of 40.45) and for the Investment-Enabling Environment Sub-Index, the country ranked 36th in Africa (score of 47.88). See Figure 1 for an overview of the country's scores across the WEII, with green denoting positioned in the upper third of African countries, yellow in the middle third and red in the lower third.

Source: Kant et al., 2024

Figure 1: Overview of Ethiopia's WEII scores

Source: Kant et al., 2024



Regulatory framework for the wildlife economy

Ethiopia has a comprehensive policy and legal framework for the wildlife economy. The Federal Democratic Republic of Ethiopia (FDRE) Constitution provides legitimate protection of natural resources, conservation of land, and historical heritages. It provides rights for every citizen to a clean and healthy environment. The Constitution also provides for individual responsibility to the environment by committing every citizen to support federal and regional agencies in protecting and conserving the environment. Tourism is recognised as the major economic driver in Ethiopia's Ten Years Development Plan 2021 - 2030 (FDRE Planning and Development Commission, 2020). **Recent initiatives show a positive trend of considerable government support for Ethiopia's tourism sector,** which is likely to grow as public-private partnerships increase in number and productivity (EWCA, 2024).

The Ethiopian Government formulated a Wildlife Strategy and Policy (2011) which aims to protect and conserve Ethiopia's wildlife resources, with special attention to threatened and endemic species. The objective of the Policy is to arrest the decline of wild animal populations and to enable the country to realise the maximum benefit from the sub-sector, thereby creating a conducive environment by which the country's wildlife and their habitats are protected and developed sustainably. This will enable the sector to play an important role in the economic development of the country. Accordingly, it has become imperative to support the country's economy through the revenue generated from wildlife resource development, reduce the threats to the country's wildlife resources, establish participatory and sustainable wildlife development, and put into effect relevant international wildlife conventions and agreements.

The Ethiopian Wildlife Conservation Authority (EWCA) was created in 2008, under Proclamation No. 575/2008. **The proclamation recognises the diverse, rare, and endemic wildlife species that Ethiopia possesses which are of great value to tourism, education, and science.** The Proclamation also emphasises that it is necessary to undertake appropriate conservation and development of wildlife for its sustainable use, by halting the threats to wildlife and enabling the country to obtain economic and social benefits from its wildlife resource.

The Wildlife Development, Conservation, and Utilisation Regulations No. 163/2008, prohibit hunting of the species listed in Table 3 of the Regulations, including giraffe, except with a special hunting license acquired following Article 22 of the Regulations. The same Regulation also prohibits unlawful possession of wildlife and wildlife products. Moreover, the Government of Ethiopia has endorsed a Public-Private Partnership (PPP) Proclamation No. 1076/2018 to facilitate private sector engagement particularly in infrastructure development and public service delivery. The PPP Proclamation creates an enabling environment for PPPs in conservation. This can significantly change the conservation landscape by leveraging the resources and capacity required for conservation in Ethiopia.

The Development, Supervision, and Utilisation of Community Watersheds Proclamation No. 1223/2020 was endorsed to support the creation of payment for ecosystem services (PES). It specifies that persons benefiting from watershed development shall have the duty to support and pay for the ecosystem rendered due to the development of the community watershed. The recently ratified Green Legacy, Degraded Land Rehabilitation Special Fund Proclamation No. 1361/2024 is designed to ensure the sustainability of the extensive initiatives being implemented under the Green Legacy Initiative. Additionally, it aims to affirm the multifaceted significance of the forestry sector. Moreover, the Special Fund is intended to facilitate the restoration of degraded landscapes through forestry and agroforestry practices which will augment the social, economic, and ecological advantages of the landscape.

The Rural Land Administration and Use Proclamation No. 1324/2024 established a new framework for the management and utilisation of rural land, as well as the sustainable planning of rural land use, which is predicated on the diverse agro-ecological zones present in the country and is essential for the conservation and management of natural resources.

In terms of carbon, the Council of Ministers have ratified the Ethiopia Forest Development Protection and Utilisation Regulation No. 544/2024 to address the escalating demand for carbon market initiatives. The Regulation aims to stimulate the engagement of private investment, enhance the transformation of Ethiopia's forestry sector, boost the contribution of forest resources to the national economy, generate employment, contribute towards self-sufficiency in forest products, and save foreign currencies spent for importing those products.

Ethiopia has ratified several conventions and agreements that govern international obligations for the conservation of the environment and natural resources, including, amongst others, the Convention of International Trade in Endangered Species (CITES), World Heritage Convention; UN Framework Convention on Climate Change; Convention of Biological Diversity (CBD); Convention on Conservation of Migratory Species (Gebretensae & Gebremicheal, 2018). These form the body of legislation that governs the wildlife economy in Ethiopia. Table 3 provides a non-exhaustive overview of the regulatory framework governing biodiversity and the wildlife economy in the country.

Institutions for managing the wildlife economy

The Ethiopian Wildlife Conservation Authority (EWCA) is the sole mandated public agency of the federal government for wildlife and protected areas in Ethiopia. Regulation number No. 163/2008 allows the EWCA to manage protected areas that have transboundary status, fall under two or more regional states, and PAs possessing endemic, unique, and representative ecosystems. Currently, the EWCA is managing 13 Protected Areas (PAs) covering approx. 2.7% of Ethiopia's landmass (Scholte et al., 2025). EWCA also provides financial and technical support to the other PAs under regional and community governance, covering approx. 7.3% of Ethiopia's landmass (Ibid).

The Ethiopian Biodiversity Institute (EBI) is mandated to conserve and sustainably utilise all forms of biological resources, including plants, animals, and microbial genetic resources, as well as associated indigenous knowledge. Ethiopian Forestry Development (EFD) was created in 2021 to sustainably develop and protect forest resources and to increase the production and productivity of forests and forest products in Ethiopia. Additionally, regional governments have established their own units to protect and develop the environment, forest, and wildlife conservation system in line with the federal agencies.

Table 3: Regulatory framework governing biodiversity and the wildlife economy

Policy/Legislation	Description	Sources
Federal Democratic Republic of Ethiopia (FDRE) Constitution	Article 44/1 states that all persons have the right to a clean and healthy environment (environmental rights). Article 51(5) states that it shall issue legislation on the conservation of land, natural resources, and historical heritages.	Available at https://www.ethiopianembassy.be/wp-content/uploads/Constitution-of-the-FDRE.pdf [Accessed 25th November 2024].
Ten Years Development Plan (2021-2030). A Pathway to Prosperity	Aims to ensure macroeconomic stability to sustain rapid economic growth; rebalance the public and private sector's role in the economy; and unlock new and existing sectors with growth potential. The tourism sector is a prime pillar of the economic reforms to develop high-end tourist accommodation facilities and attractions, through public-private partnerships (PPPs).	Available at https://www.mopd.gov.et/en/ [Accessed 25th November 2024].
Agenda 2063	Africa's blueprint and master plan for transforming Africa into the global powerhouse of the future. The continent's strategic framework 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].
Proclamation No. 482/2006 and Regulation No. 169/2009	These laws provide a legal framework for access to genetic resources, community knowledge, benefit-sharing mechanisms, and community rights. They clarify ownership rights, conditions for resource use, and responsibilities of users and providers.	Available at https://www.cbd.int/abs/submissions/icnp-3/Ethiopia-Guide-Access-Genetic-Resources.pdf [Accessed 5th December 2025].
Fisheries Development and Utilisation Proclamation No. 315/2003	This Proclamation aims to sustainably manage and develop its freshwater fisheries, focusing on conserving fish biodiversity, preventing overfishing, boosting fish supply for food security, ensuring quality, and expanding aquaculture, by setting rules for protected areas, licenses, fishing gear, seasons, and environmental standards to realise economic benefits from the resource.	Available at https://justice.gov.et/en/law/fisheries-development-and-utilization-proclamation/ [Accessed 5th December 2025].
Proclamation No. 541/2007	This Proclamation makes provision with respect to the development, conservation and sustainable utilisation of wildlife resources in Ethiopia, including those species migrating from country to country and temporarily staying in Ethiopia. Other provisions of this Proclamation concern the authorisation of activities, including hunting, in wildlife conservation areas and regulation-making powers.	Available at https://www.ecolex.org/details/legislation/development-conservation-and-utilization-of-wildlife-proclamation-no-541-of-2007-lex-faoc095249/ [Accessed 5th December 2025].
Proclamation No. 575/2008	This Proclamation serves for the establishment of the Ethiopian Wildlife Conservation Authority. The Proclamation recognises the diverse, rare, and endemic wildlife species that Ethiopia possesses which are of great value to tourism, education, and science.	Available at https://faolex.fao.org/docs/pdf/eth85165.pdf [Accessed 25th August 2021].
Proclamation No. 1065/2018	Forest Development, Conservation and Utilisation Proclamation introduced carbon trading in the country's forestry sector. This Proclamation also institutionalises Participatory Forest Management (PFM), offering legal and policy solutions to overcome previous implementation challenges.	Available at https://faolex.fao.org/docs/pdf/eth182203.pdf [Accessed 25th August 2021].

Table 3: Regulatory framework governing biodiversity and the wildlife economy (continued)

Policy/Legislation	Description	Sources
Proclamation No. 1361/2024	Set special fund for degraded landscape restoration through forestry and agroforestry practices.	Available at https://www.efd.gov.et/wp-content/uploads/2025/08/Green_legacy_and_degraded_landscape_restoration_special_fund_proclamation-1.pdf [Accessed 28th October 2025].
Proclamation on PES drafted	Set the first-ever Proclamation to establish a genuine value to the natural ecosystems that underpin economic benefits and human lives.	In final preparation
Regulations No.163/2008	This Regulation prohibits unlawful possession of wildlife and wildlife products. It details rules for protected areas (National Parks, Sanctuaries), hunting licenses (prohibiting hunting of certain species such giraffes without special permits), management of wildlife, import/export of wildlife products, and penalties for violations, and establishing the framework for the Ethiopian Wildlife Conservation Authority (EWCA).	Available at https://faolex.fao.org/docs/pdf/eth136632.pdf [Accessed 25th August 2021].
Regulation No. 544/2024	Set the first detailed legal parameters for carbon trading in Ethiopia.	Available at https://genderlex.fao.org/en/country/profiles/ETH/see-more/Women%E2%80%99s%20empowerment/Ethiopia/document/LEX-FAOC230228 [Accessed 28th October 2025].
Environmental Policy (1997)	The overall goal of the Policy is to improve and enhance the health and quality of life of all Ethiopians and to promote sustainable social and economic development through the sound management and use of natural, human-made, and cultural resources and the environment as a whole to meet the needs of the present generation without compromising the ability of future generations to meet their own needs.	Available at https://www.epa.gov.et/images/Polices/ENVIRONMENT_POLICY_OF_ETHIOPIA.pdf [Accessed 25th August 2021].
Wildlife Policy (2005)	The Ethiopian government formulated a Wildlife Policy and strategy in tune with the objective reality of the country as well as the existing international natural resources development and protection principles. affords special attention to the protection and conservation of threatened and endemic species.	Available at https://faolex.fao.org/docs/pdf/eth174956.pdf [Accessed 25th August 2021].
Tourism Policy (2025)	The vision is to ensure a competitive and sustainable tourism industry by 2035, making Ethiopia one of Africa's leading tourism destinations.	In final preparation
Forest Policy and Strategy (2006)	The Policy promotes the involvement of all individuals, associations, and organisations in the development and conservation of forests, by granting lands to them, ensuring tax exemptions, providing technical assistance, and facilitating access to credit.	Available at https://www.epa.gov.et/images/Polices/Forest_Policy__Strategy_english_2007.pdf [Accessed 25th August 2021].
Conservation Strategy of Ethiopia (1997)	The Conservation Strategy provides objectives, guiding principles, and strategies regarding eleven sectoral issues one of which is genetic, species, and ecosystem biodiversity conservation and management.	Available at https://iucn.org/sites/default/files/2022-05/cons_stratagy_of_ethiopia_phase_3_proj_report_of_rev_mission_1997_.pdf [Accessed 25th November 2024].
National Biodiversity Strategy and Action Plan (2005)	The goal of the Ethiopian Biodiversity Strategy and Action Plan has been formulated as "Effective systems are established that ensure the conservation and sustainable use of Ethiopia's biodiversity, that provide for the equitable sharing of the costs and benefits arising therefrom, and that contribute to the well-being and security of the nation."	Available at https://www.cbd.int/doc/world/et/et-nbsap-01-en.pdf [Accessed 25th November 2024].

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Table 4: Institutions for managing and supporting the wildlife economy in Ethiopia

Institution	Role	Source
Ministry of Planning and Development (MoPD)	The MoPD is the primary government institution responsible for national planning and development. The Ministry plays a vital role in shaping Ethiopia's sustainable growth and socio-economic transformation.	Available at https://www.mopd.gov.et/en/mopd/ [Accessed 28th August 2025].
Ministry of Tourism (MoT)	The Ministry of Tourism is among the pioneer ministries in Ethiopia, created to develop and promote Ethiopia's tourism resources and coordinate tourism marketing initiatives at various levels with diverse stakeholders.	Available at https://visitethiopia.travel/ [Accessed 28th August 2025].
Ministry of Agriculture (MoA)	The Ministry of Agriculture plays a critical role in the management of Ethiopia's natural resources including soil conservation, Agroforestry, Livestock and Fisheries development. Further, the ministry supports Ethiopia's Green Legacy initiative, a nationwide reafforestation programme launched in 2019.	Available at https://www.moa.gov.et/ [Accessed 28th August 2025].
Livestock and Fishery Resource Development (LFRD)	This LFRD under MoA oversees national fisheries programs, including capture fisheries and aquaculture, and conducts related research. It plays a central role in implementing the Fisheries Development and Utilisation Proclamation No. 315/2003, which governs fisheries in Ethiopia.	Available at https://www.developmentaid.org/organizations/view/145587/ministry-of-livestock-and-fisheries-ethiopia [Accessed 28th August 2025].
Ethiopian Wildlife Conservation Authority (EWCA)	The Ethiopian Wildlife Conservation Authority (EWCA) operates as a governmental agency under the auspices of the Ministry of Tourism (MoT), having been instituted in accordance with the Ethiopian Wildlife Development and Conservation Authority Establishment Proclamation (No. 575/2008). This entity serves as the exclusive federal authority entrusted with the responsibilities of effective wildlife and protected areas management and promoting the judicious use of Ethiopia's wildlife resources and ecosystem services. The strategic vision of the EWCA is geared toward enhancing the role of wildlife resources in fostering economic development within Ethiopia.	Available at https://www.ewca.gov.et/ [Accessed 28th August 2024].
Ethiopian Biodiversity Institute (EBI)	The Ethiopian Biodiversity Institute (EBI) was established in 2013 under Regulation No. 291/2013. However, its legal status dates back to 1998 under Proclamation No. 120/1998 when the Institute of Biodiversity Conservation and Research (EBIR) was re-established primarily to implement Ethiopia's obligation to the Convention on Biological Diversity (CBD). EBI is mandated for the conservation and sustainable utilisation of all forms of biological resources, including plants, animals, and microbial genetic resources, as well as associated indigenous knowledge.	Available at https://ebi.gov.et/ [Accessed 28th August 2025].
Ethiopian Environmental Protection Authority (EEPA)	The Ethiopian Environmental Protection Authority (EEPA) is the Federal institution for managing the Environment of Ethiopia. EEPA is responsible to ensure the realisation of the environmental rights, goals, objectives and basic principles enshrined in the Constitution. As well as the Environment Policy of Ethiopia through coordinating appropriate measures, establishing systems, developing programs and mechanisms for the welfare of humans and the safety of the environment.	Available at https://www.epa.gov.et/ [Accessed 28th August 2025].
Ethiopian Forestry Development (EFD)	The Ethiopian Forestry Development (EFD) is an autonomous federal institution, established by the Federal Government of Ethiopia's Council of Ministers. EFD was created to sustainably protect and develop Ethiopia's forest resources; restore degraded lands through afforestation; increase the production and productivity of the forest and forest products to enhance economic, social and ecological benefits.	Available at https://www.efd.gov.et/ [Accessed 30th October 2025].
Ethiopian Wildlife Conservation Think Tank (EWC-TT)	Ethiopian Wildlife Conservation Think Tank (EWC-TT) is a legally registered Civil Society Organisation with an objective of offering technical advice to government institutions, private partners and other conservation partners on conservation of biodiversity, protection of ecosystem and sustainable development of Ethiopia's Wildlife Protected Areas and Biosphere Reserves.	Available at https://ewc-tt.org.et/ [Accessed 30th October 2025].
Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)	The GIZ Biodiversity and Forestry Programme in Ethiopia has supported the protection and environmentally friendly use of natural resources in protected areas since 2015.	Available at https://www.giz.de/en/projects/conservation-biodiversity-and-sustainable-use-natural-resources [Accessed 30th October 2025].

Table 4: Institutions for managing and supporting the wildlife economy in Ethiopia (continued)

Institution	Role	Source
KfW Development Bank	On behalf of the Federal Ministry for Economic Cooperation and Development (BMZ), KfW finances the Conservation and Sustainable Use of Biodiversity in Priority Protected Areas.	Available at https://www.kfw-entwicklungsbank.de/International-financing/KfW-Entwicklungsbank/ [Accessed 30th August 2022].
Global Environmental Facility/ United Nations Development Programme	Promoting Integrated Conservation of Wildlife and Landscapes for Sustainable Development in Ethiopia aims to conserve wildlife and landscapes by transforming the drivers of species loss and habitat fragmentation.	Available at https://www.thegef.org/projects-operations/country-profiles/ethiopia [Accessed 27th October 2025].
African Parks Network (APN)	African Parks (APN) is a non-profit conservation organisation that takes on responsibility for the long-term management of protected areas in partnership with governments and local communities. African Parks manages 24 protected areas in 13 countries covering over 20 million hectares in Angola, Benin, Central African Republic, Chad, the Democratic Republic of Congo, Ethiopia, Malawi, Mozambique, the Republic of Congo, South Sudan, Rwanda, Zambia and Zimbabwe.	Available at https://www.africanparks.org/ [Accessed 27th October 2025].
Frankfurt Zoological Society (FZS)	The Frankfurt Zoological Society (FZS) is an international conservation organisation headquartered in Frankfurt and operating in 18 countries. Since 2004, FZS has been registered in Ethiopia and operated in several landscapes in Ethiopia. Currently, FZS has a Collaborative Management Partnership with EWCA in the Bale Mountains National Park (BMNP).	Available at https://fzs.org/en/ [Accessed 27th October 2025].
African Wildlife Foundation (AWF)	African Wildlife Foundation is the primary advocate for the protection of wildlife and wildlands as an essential part of a modern and prosperous Africa. Headquartered in Kenya and registered in Ethiopia. Since 2015, AWF has had a Collaborative Management Partnership with EWCA in the Simien Mountains National Park (SMNP).	Available at https://www.awf.org/ [Accessed 30th August 2025].

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Wildlife economy activities in Ethiopia

Ethiopia has a wide range of existing wildlife economy activities, though there are opportunities for diversification within and beyond these activities. These activities include ecotourism, hunting, fishing, wildlife trade and forest products. However, **data and information on all wildlife economy activities were found to be disaggregated, often outdated, and largely incomparable between sites as well as over time.** The next sections offer an overview of the main wildlife economy activities, collating as much data as possible to provide a broad picture of the state of the wildlife economy in Ethiopia.

Tourism

Known as the "Land of Origins", with its array of historical, natural, and cultural attractions, Ethiopia has a unique brand of tourism. Ethiopia's extensive cultural and natural wealth is demonstrated by its **12 UNESCO World Heritage Sites (nine tangible and four intangible). This is the highest number of any country in Africa.** Most of these are cultural sites, while Simien and Bale Mountains National Parks represent the natural sites. The government of Ethiopia is making substantial investments, including governance, political, and financial commitments, in the realms of natural resource conservation and tourism development to rectify previous adverse experiences and stimulate socio-economic advancement, particularly in the rural and remote areas of Ethiopia. **Current initiatives aimed at enhancing tourism infrastructure**, such as high-end lodge facilities and various attractions throughout the country, are designed to enhance the number of international, regional, and domestic tourists.

Ethiopia launched its first Tourism Satellite Account (TSA) to measure tourism's contribution to the national GDP, employment, and investment in 2024. The TSA is a significant step in Ethiopia's tourism data analysis. **In 2019, visitors' spending directly contributed USD 2.4 billion**, resulting in a total contribution of USD 4.8 billion including indirect and induced impacts, **constituting 2.7% of the total GDP while supporting two million jobs** (ETSA , 2024). The total number of arrivals has been increasing and reached 2.5 million in 2019 (ETSA, 2024) (Figure 2). It is anticipated that by 2030, tourism could once again contribute over USD 5 billion annually to GDP, with international arrivals exceeding 2 million visitors (ETSA, 2024). These figures include all forms of tourism, not specifically ecotourism, which is looked at in the next section.

Ecotourism

In the country's tourism industry, ecotourism is becoming a popular undertaking, particularly where wildlife is an important tourist attraction. Wildlife tourism provides numerous benefits, including direct income to households through employment, ownership, or equity in ecotourism-linked businesses, as well as a source of foreign exchange. Income through individual taxation, sales taxes, and corporate taxes are among the main direct economic welfare benefits in Ethiopia. Ecotourism initiatives are vital to sustainable tourism in Ethiopia, demonstrating significant ecological, economic, and social benefits (see Text box 3). PAs are benefiting from tourism developments from both international and national levels. The developments in national transport infrastructure linking regions and major cities have provided immense opportunity in allowing easy accessibility to many remote protected areas in Ethiopia, but tourism infrastructure development remains poor in many protected areas. Although tourism has increased in national wildlife areas, the number of international visitors remains relatively low when compared with other countries. On the other hand, the number of domestic tourists to religious sites is very high when compared with those travelling to national wildlife areas.

In the 1960s, Ethiopia started developing a protected area network to protect its spectacular wildlife and cater to international tourism, growing the number to 87 wildlife PAs, in addition to 57 priority forest areas in 2024 (Scholte et al., 2025). The initial (economic) motivation for the creation of PAs in Ethiopia was to attract international tourists (Scholte et al., 2025). **Total visitors to PAs administered by EWCA reached approx. 408,600 in 2019, approx. 10% of all incoming tourism in the country and the overall estimated contribution was USD 58.5 million** (Admasu, 2020), after which it decreased substantially during the COVID-19 pandemic and the following period of unrest. In 2022, there were 73,650 tourists, approx. doubling to 140,250 in 2023 which was still almost three times lower than in 2019 (Val Zyl et al., 2024) (see Figure 2). The split between International/Foreign resident/Ethiopian visitors was 21%/29%/50% in 2019 but thereafter became dominated by local visitors with international visitors making up less than 12% in 2022 and 2023 (Val Zyl et al., 2024). This has had a significant impact on tourism revenues as outlined in the following section.

Domestic tourist flow to ecotourism destinations has, however, rebounded. It remains a challenge to shift the attention of PAs to cater to domestic tourists as well as tourists from the diaspora, often with entirely different expectations from the classical wildlife focussing international tourism (Scholte et al., 2023).

EWCA is mandated to collect revenues from entrance, camping fees, filming and photography, tourism concession and research within the PAs that it manages. Further, EWCA also collects revenues from activities that it manages which occur elsewhere in the country including in regional PAs that are managed by the regions. These encompass revenues from consumptive uses that are not permitted in National Parks and Sanctuaries including from hunting, wildlife trade, and civet musk trade.

Revenue collected by EWCA is not retained and goes to the National Treasury. EWCA is, in turn, funded through allocations from the overall federal budget. There are, however, **revenue sharing exceptions in the form of hunting and community revenues,** 85% of which are allocated to the regional governments where they are generated (for further allocation by these regional governments to local communities) and the remaining 15% goes to the National Treasury.

Total EWCA revenue was USD 3.7 million in 2019 with a comparable share between entrance fee and other consumptive and non-consumptive fees (Val Zyl et al., 2024). This contrasts with the situation after the COVID-19 pandemic and unrest when the total revenue declined considerably to USD 356,000 in 2023 (see Figure 3).


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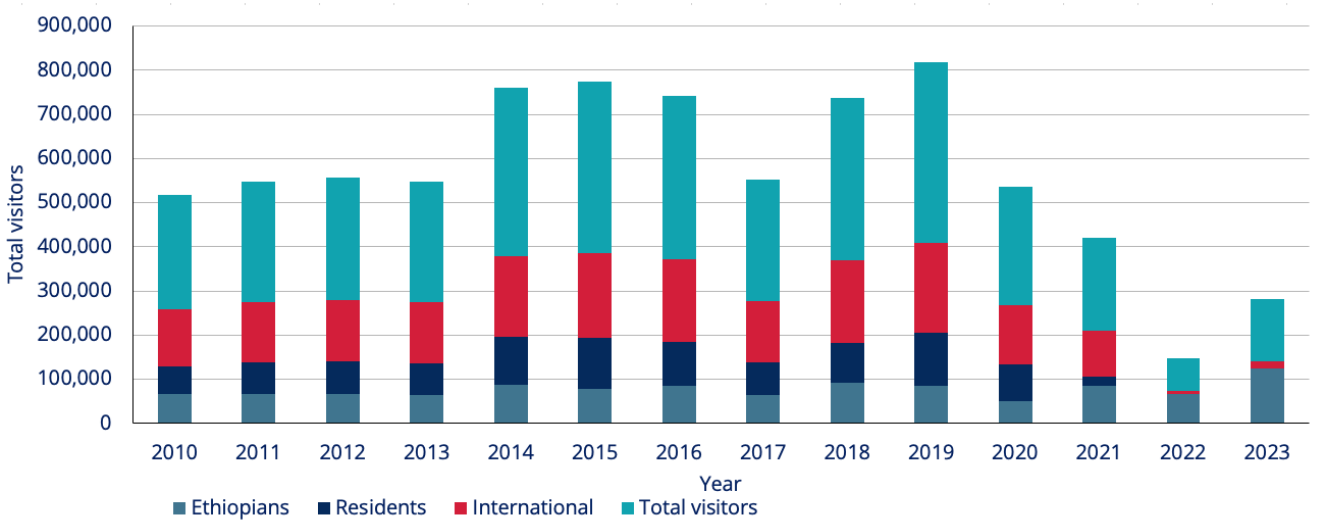
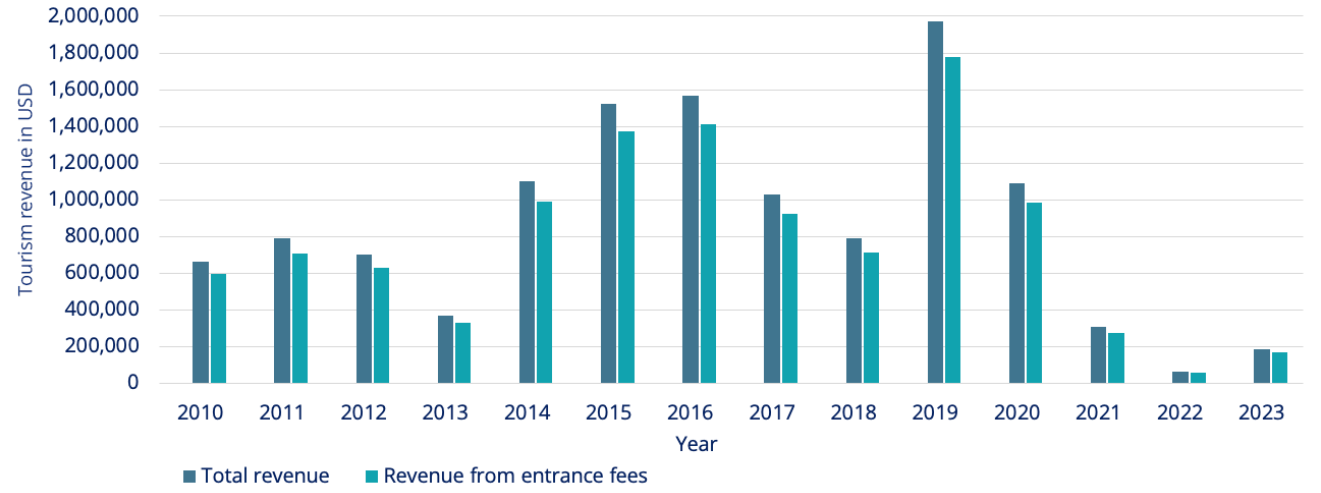
Figure 2: Number of tourists per visitor category to Ethiopian protected areas managed by EWCA (2014 - 2023)



Source: Van Zyl et al., 2024

Figure 3: Revenues earned by Ethiopian protected areas managed by EWCA (2010 - 2023)



Source: Van Zyl et al., 2024

Text box 3

Bale Mountain Lodge

*Note: *This Lodge is no longer operational however, it was included as a good example of how a public-private partnership can set up a conservation tourism enterprise*

Bale Mountain Lodge (BML) was located in Bale Mountains National Park (BMNP), a UNESCO world Heritage Site which hosts the world's largest Afro-alpine habitat with 14 endemic mammal species, 57% of Ethiopia's endemic bird species and 60% of the remaining Ethiopian wolf (the world's rarest canid and Africa's rarest carnivore) population. As a partnership between the African Wildlife Foundation (AWF) and the Ethiopian Wildlife Conservation Authority (EWCA) to set up conservation tourism enterprises, BML opened in 2014. BML was owned and operated by a private sector company which had a lease with EWCA to operate within BMNP. Some of the financing for the lodge came from African Wildlife Capital (AWC), now called Umliki Investments, which was founded by AWF in 2011 as Africa's first impact-investment vehicle for conservation enterprises. The concession fee was a mixed system of a small annual lease fee plus a revenue-based system, where the private sector company provided 3% of gross revenue to EWCA on an annual basis. The majority of the staff (96%) working at the lodge were from the local community, providing an important source of employment in a remote area. The site was 100% eco-friendly with power coming from a micro-hydro power plant and biodegradable waste being processed through a bio-gas system to provide cooking gas.

Some of the challenges observed included: competing government priorities to conservation resulting in a lack of focus and support from government stakeholders; relatively high private sector levels of debt and interest repayments restricting operating capital and cash flow for the private sector; and a volatile business and security environment which made long term planning difficult. Other challenges included increasing population stress in and around the BMNP resulting in increased negative activities and local community and government perceptions of available private sector funds versus the reality of cash flow in an established business.

Source: Snyman & Spenceley, 2019

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Opportunities and challenges related to tourism in PAs

Opportunities:

- **Diversity and uniqueness of tourism resources**, including natural and cultural resources.
- **Specialised tourism activities,** e.g. avitourism, rafting, trekking, safari tours, mountain climbing, etc.
- **Access to the country -** due to Ethiopian Airlines extensive network of flights, access into the country is good, though, as noted in the challenges, access within the country is more limited and can be expensive.

Challenges:

- **Lack of infrastructure**, including roads, electricity, water, telecommunication, etc.
- **Lack of tourism facilities and services**, including accommodation facilities, food and drink outlets, tourist information centres, interpretive panels, etc.
- **Weak marketing and promotional activities** and low visibility of ecotourism destinations.
- **Conflict** in some regions, which often affects travel to the country in general.
- **Declining biodiversity** and threats to conservation, which impacts on the ecotourism experience.
- **Human-wildlife conflict** led local communities to develop negative perceptions of wildlife, resulting in retaliatory killings of iconic species and reducing the tourism potential of wildlife areas.
- **Low entrance fees** for the PAs which reduces the benefits received.
- A lack of **access and tourism circuits**, limits the length of stay and expenditure of tourists in a region and/or the country.

In summary, Ethiopia has extensive natural resources which are appealing to ecotourists and which, if managed effectively, along with providing a more conducive business environment and ensuring conflict resolution (safety) provides an opportunity for a large increase in ecotourism's contribution to GDP, jobs and revenues, directly, indirectly through multipliers and value chains and also through induced impacts.

Hunting

Ethiopia, alongside Tanzania and Uganda, is one of the few east African countries permitting trophy hunting (Fischer et al., 2015). Somalia, Sudan and South Sudan have legislation in place, but due to insecurity, trophy hunting is not active (Siege, 2025). Licensed wildlife hunting in Ethiopia began in the early 20th century, but formal regulation started with the establishment of the Ethiopian Wildlife Conservation Authority (EWCA) in 1970 (Ibid.).

Hunting regulations (Proclamation No. 541/2007 and Regulations No. 163/2008) define licensing, fees, and operations, while EWCA enforces rules, allocates quotas, issues permits, and collects fees (Sultan et al., 2017; van Zyl et al., 2024). Safari companies in Ethiopia operate in controlled hunting areas (CHAs) under regional concessions, leased and managed by fewer than six registered outfitters, mostly Ethiopian citizens or long-term residents (AfricaHunting.com, 2022; Siege, 2014). Foreign outfitters have been unable to enter the market, though some international companies act as agents for local outfitters (Siege, 2014). Professional Hunters (PHs) facilitate tourist hunting within these areas, following annual quotas (AfricaHunting.com, 2022). Figure 4 presents a map of the CHAs in Ethiopia; however, it does not include open hunting blocks or reflect the most up-to-date CHA designations.

A report by Siege (2014) highlights that **Ethiopia's trophy-hunting industry is relatively small but has the potential for growth**. According to the report, between 30 and 50 hunters book hunts annually, resulting in approx. 500 animals being hunted each year. This figure is significantly lower than the approx. 41,499 animals hunted by trophy hunters in South Africa in 2019, generating USD 95 million in total income (DEFF, 2019).

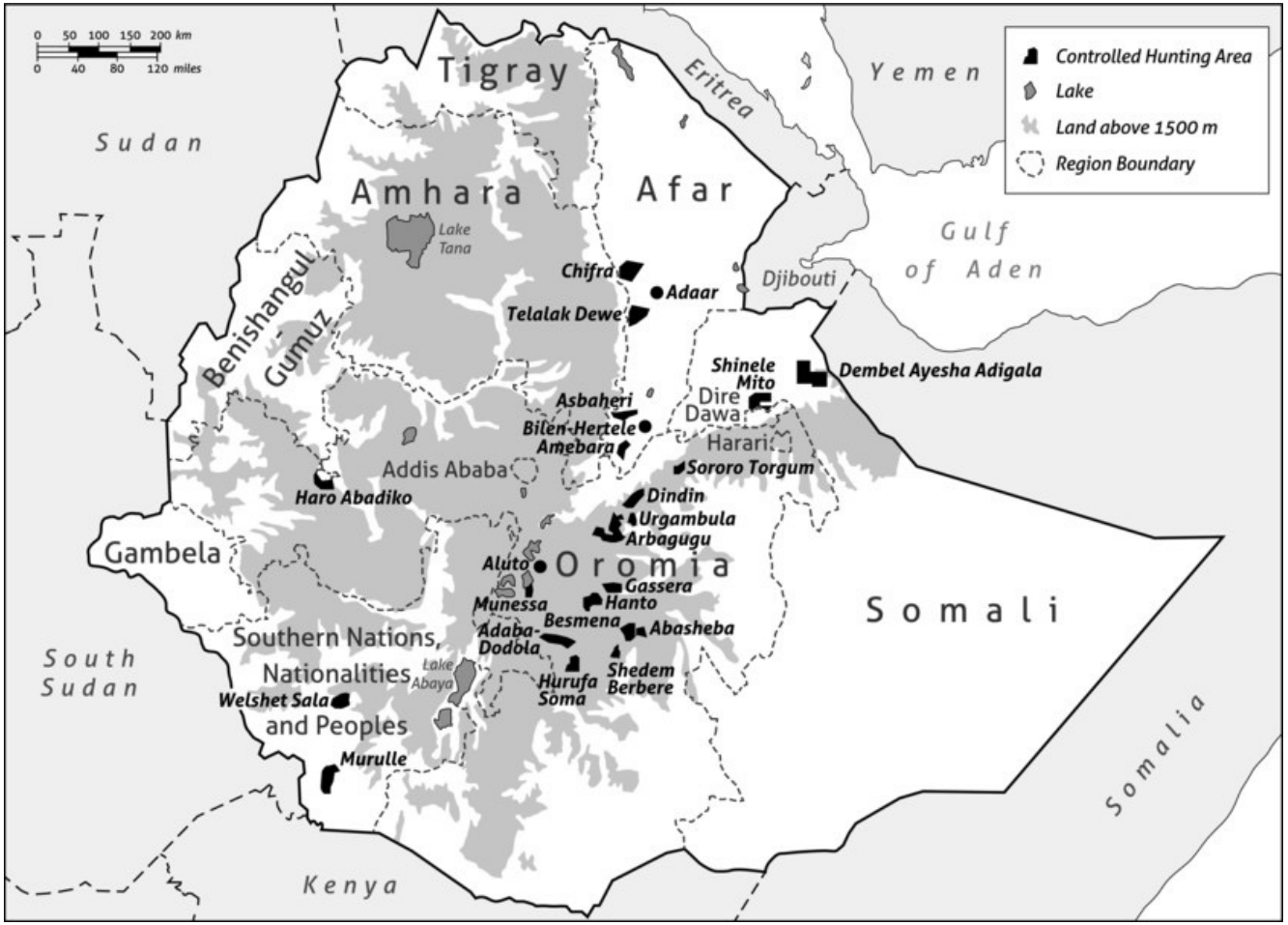
In 2014, Ethiopia's hunting industry generated approx. USD 4 million in direct revenue, shared between the government and hunting companies, with job creation and related economic benefits contributing an additional USD 1 million (Siege, 2014). One hunting company accounts for approx. half of the industry's total revenue, while the remaining five companies share the rest of the quota and marketable hunting days (Ibid.). **A recent report identified hunting as EWCA's largest revenue source, bringing in ETB 116 million (approx. USD 2.1 million) solely from hunting fees (van Zyl et al., 2024).**

Table 5 indicates the quota and actual number of wild animals hunted by international tourists in Ethiopia from September 2022 to August 2023, revealing that **less than 30% of the annual quota was utilised** (EWCA, 2025). The reason for the remaining 71% going unfilled is unclear, though high hunting costs may be a factor, as noted by Flack (2011). Flack (2011) wrote in a HuntingAfrica.com blog post that between 2009 and 2011, EWCA doubled hunting fees, increasing the cost of hunts, such as a mountain nyala (*Tragelaphus buxtoni*) safari, to USD 75,000. Once booked five years in advance, these mountain nyala hunts struggle to find buyers, suggesting price increases may limit demand (Ibid.). Given this information is from 14 years ago, it would be useful to collect new data to ascertain if this is still the case.

Similarly, data for September 2023 to August 2024 indicates that only 11 mountain nyala were hunted out of a quota of 32, leaving 21 (66%) unhunted (EWCA, 2025). The last published price (Sultan et al., 2017) for a mountain nyala was USD 15,000, more than double the second most expensive huntable species, Menelik's bushbuck (*Tragelaphus scriptus menelikii*), priced at USD 6,000 per unit (EWCA, 2025). Given the high price for a mountain nyala permit and resultant unsold mountain nyala permits, there is a loss of potential revenue up to USD 315,000 (author's calculation). Along with the rise in hunting fees, the complexity of regulations, though aimed at sustainable wildlife use, may discourage outfitters and deter investors, restricting industry growth (Sultan et al., 2017). Text box 4 indicates trophy hunters' willingness to pay for conservation benefits.

According to CITES (2025b), **data collected over 10 years (2014-2023), Ethiopia exported 503 CITES-listed specimens as hunting trophies.** Table 6 summarises the species, quantities, and destination countries. The United States is the leading importer, accounting for 71% of Ethiopia's trophy exports, followed by the Russian Federation at 5.4% and South Africa at 5.2%.

Figure 4: Map of controlled hunting areas (CHAs) in Ethiopia



Source: Fischer et al., 2015

Text box 4

Trophy hunters' willingness to pay for conservation benefits

Fischer et al., (2015) conducted a study that surveyed international trophy hunters' preferences for hunting trips in Ethiopia. The results indicated that **Ethiopia's trophy hunting industry has significant conservation potential**, with international hunters willing to pay premiums for wildlife-rich landscapes and revenue-sharing with local communities. However, **concerns persist over the government's retention of hunting revenues and a lack of transparency in fund allocation**. The study highlights the need for more transparent communication on how hunting revenues support conservation efforts, such as habitat protection and ranger patrols.

Key factors influencing demand include flexible pricing, shorter trip options, and species diversity in hunting packages. High costs and rigid regulations, such as paying trophy fees in advance, make Ethiopia less competitive than other African destinations. Expanding community involvement and revenue-sharing could enhance local support, making land managed for hunting more viable than alternative land uses. Strengthening Ethiopia's hunting industry with sustainable management and transparent revenue distribution could stimulate conservation and economic benefits.

Source: Fischer et al., 2015

Table 5: Data on quota provided and hunted wild animals by international tourists in Ethiopia (September 2022 to August 2023)

Hunting operator		Total			
Controlled Hunting Area (CHA)	Region	Annual quota	Actual hunted	Unhunted	% Hunted
Shedem Berbere	Oromia	27	11	16	40.74%
Adaba Dodola	Oromia	74	35	39	47.30%
Web Valley	Oromia	57	7	50	12.28%
Welshat Sala	South Ethiopia	40	19	21	47.50%
Murule	South Ethiopia	65	23	42	35.38%
Aluto	Oromia	19	3	16	15.79%
Munesa Kuke	Oromia	22	0	22	0.00%
Odubulu	Oromia	68	35	33	51.47%
Abasheba Demero	Oromia	61	22	39	36.07%
Blen Hertale	Afar	53	19	34	35.85%
Telalak Dewe	Afar	38	7	31	18.42%
Chifra	Afar	30	0	30	0.00%
Hanto	Oromia	32	13	19	40.63%
Kuni Muktar	Oromia	12	0	12	0.00%
Sororo Torgem	Oromia	40	5	35	12.50%
Sinana	Oromia	11	4	7	36.36%
Debre Libanos	Oromia	5	2	3	40.00%
Gara Gunbi	Oromia	24	0	24	0.00%
Gara Meti	Oromia	19	2	17	10.53%
Gelila Dura	Afar	7	0	7	0.00%
Total		**704**	**207**	**497**	**29.40%**

Source: EWCA, 2025

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Table 6: Ethiopia's exports of CITES-listed hunting trophies (2014-2023)

Importer	Scientific name	Common name	Trade term	Quantity
Austria				**10**
< 2% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	1
	Colobus guereza	Eastern black-and-white colobus	Trophies	5
	Panthera pardus	Leopard	Trophies	1
	Papio anubis	Olive baboon	Skulls, trophies	3
Australia				**2**
< 1% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	1
	Colobus guereza	Eastern black-and-white colobus	Trophies	1
Belgium				**8**
< 2% of total trophy exports	*Caracal caracal*	Caracal	Trophies	1
	Colobus guereza	Eastern black-and-white colobus	Trophies	5
	Papio anubis	Olive baboon	Trophies	2
Canada				**4**
< 1% of total trophy exports	*Colobus guereza*	Eastern black-and-white colobus	Trophies	2
	Panthera pardus	Leopard	Trophies	1
	Papio hamadryas	Hamadryas baboon	Trophies	1
Czech Republic				**4**
< 1% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	1
	Caracal caracal	Caracal	Trophies	1
	Felis lybica	Ethiopian wild cat	Trophies	1
	Leptailurus serval	Serval	Trophies	1
Germany				**13**
2.6% of total trophy exports	*Canis aureus*	Golden jackal	Skins, trophies	2
	Colobus guereza	Eastern black-and-white colobus	Trophies	3
	Felis silvestris	Wild cat	Trophies	2
	Papio anubis	Olive baboon	Skulls, trophies	1
	Papio hamadryas	Hamadryas baboon	Trophies	2
	Theropithecus gelada	Gelada baboon	Skulls, trophies	3
Spain				**5**
< 1% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	1
	Colobus guereza	Eastern black-and-white colobus	Trophies	1
	Panthera pardus	Leopard	Trophies	2
	Papio anubis	Olive baboon	Trophies	1
France				**12**
2.4% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	1
	Chlorocebus pygerythrus	Vervet monkey	Trophies	1
	Colobus guereza	Eastern black-and-white colobus	Trophies	4
	Panthera pardus	Leopard	Trophies	1
	Papio anubis	Olive baboon	Skulls, trophies	4
	Papio hamadryas	Hamadryas baboon	Trophies	1
United Kingdom				**7**
< 2% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	1
	Cercopithecus mitis	Blue monkey	Trophies	1
	Colobus guereza	Eastern black-and-white colobus	Trophies	1
	Felis silvestris	Wild cat	Trophies	1
	Papio anubis	Olive baboon	Trophies	1
	Papio hamadryas	Hamadryas baboon	Trophies	1
	Theropithecus gelada	Gelada baboon	Trophies	1
Georgia				**4**
< 1% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	1
	Caracal caracal	Caracal	Trophies	1
	Felis silvestris	Wild cat	Trophies	1
	Leptailurus spp.	Serval	Trophies	1
Hungary				**4**
< 1% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	1
	Colobus guereza	Eastern black-and-white colobus	Trophies	1
	Papio hamadryas	Hamadryas baboon	Trophies	1
	Theropithecus gelada	Gelada baboon	Trophies	1

Table 6: Ethiopia's exports of CITES-listed hunting trophies (2014-2023) (continued)

Importer	Scientific name	Common name	Trade term	Quantity
Italy				**2**
< 1% of total trophy exports	*Colobus guereza*	Eastern black-and-white colobus	Trophies	1
	Papio hamadryas	Hamadryas baboon	Trophies	1
Mexico				**10**
< 2% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	3
	Felis silvestris	Wild cat	Trophies	3
	Panthera pardus	Leopard	Trophies	4
Russian Federation				**27**
5.4% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	6
	Chlorocebus pygerythrus	Vervet monkey	Trophies	2
	Colobus guereza	Eastern black-and-white colobus	Trophies	10
	Felis silvestris	Wild cat	Trophies	1
	Papio anubis	Olive baboon	Trophies	3
	Papio hamadryas	Hamadryas baboon	Trophies	2
	Theropithecus gelada	Gelada baboon	Trophies	3
Saudi Arabia				**8**
< 2% of total trophy exports	*Caracal caracal*	Caracal	Trophies	1
	Cercopithecus mitis	Blue monkey	Trophies	1
	Chlorocebus aethiops	Grivet monkey	Trophies	1
	Chlorocebus pygerythrus	Vervet monkey	Trophies	1
	Felis silvestris	Wild cat	Trophies	1
	Leptailurus serval	Serval	Trophies	1
	Papio hamadryas	Hamadryas baboon	Trophies	1
	Theropithecus gelada	Gelada baboon	Trophies	1

Importer	Scientific name	Common name	Trade term	Quantity
United States of America				**357**
71% of total trophy exports	*Ammotragus lervia*	Barbary sheep	Trophies	1
	Canis aureus	Golden jackal	Trophies	55
	Caracal caracal	Caracal	Trophies	7
	Cercopithecus mitis	Blue monkey	Trophies	15
	Chlorocebus aethiops	Grivet monkey	Trophies	2
	Chlorocebus pygerythrus	Vervet monkey	Trophies	4
	Colobus guereza	Eastern black-and-white colobus	Skulls, trophies	108
	Colobus spp.	Colobus species	Trophies	1
	Felis lybica	Ethiopian wild cat	Trophies	1
	Felis silvestris	Wild cat	Skulls, trophies	22
	Leptailurus serval	Serval	Trophies	7
	Panthera leo	Lion	Trophies	1
	Papio anubis	Olive baboon	Skulls, trophies	16
	Papio hamadryas	Hamadryas baboon	Skins, trophies	78
	Papio ursinus	Chacma baboon	Trophies	2
	Theropithecus gelada	Gelada baboon	Skins, trophies	37

Table 6: Ethiopia's exports of CITES-listed hunting trophies (2014-2023) (continued)

Importer	Scientific name	Common name	Trade term	Quantity
South Africa				**26**
5.2% of total trophy exports	*Canis aureus*	Golden jackal	Trophies	1
	Caracal caracal	Caracal	Trophies	1
	Cercopithecus mitis	Blue monkey	Trophies	1
	Chlorocebus aethiops	Grivet monkey	Trophies	1
	Chlorocebus pygerythrus	Vervet monkey	Trophies	1
	Colobus guereza	Eastern black-and-white colobus	Trophies	5
	Felis silvestris	Wild cat	Trophies	1
	Leptailurus serval	Serval	Trophies	1
	Panthera pardus	Leopard	Trophies	1
	Papio anubis	Olive baboon	Skulls, trophies	7
	Papio hamadryas	Hamadryas baboon	Trophies	4
	Papio ursinus	Chacma baboon	Trophies	1
	Theropithecus gelada	Gelada baboon	Trophies	1
Total				**503**

Source: CITES, 2025b


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As in other African countries, land use competition in Ethiopia is intensifying due to population growth and economic demands (Fischer et al., 2015). CHAs and national parks are threatened by livestock grazing and agricultural expansion, with large-scale farming posing an even greater risk (Fischer et al., 2015; Mengist, 2020). International hunters were found by Fischer et al. (2015) to criticise the country's governance, citing the underutilisation of trophy hunting revenue and threats from illegal hunting, grazing, and agriculture, which contribute to wildlife and habitat decline. These challenges hinder conservation efforts to protect Ethiopia's unique Afro-alpine ecosystems, home to endemic species such as the mountain nyala (*Tragelaphus buxtoni*), Ethiopian wolf (*Canis simensis*), Walia ibex (*Capra walie*), and gelada (*Theropithecus gelada*) (Ibid.). Despite habitat loss, some populations of species, such as the mountain nyala, remain stable, and there are no concerns about the biological sustainability of hunting (Siege, 2014).

Conserving the Gambella lowlands is crucial for sustaining the white-eared kob (*Kobus kob leucotis*), which migrates through the Gambella-Boma landscape in western Ethiopia and South Sudan (Asfaw et al., 2022), forming the world's largest land mammal migration (African Parks, 2024; Benjamin et al., 2013). This migration faces threats from habitat destruction, poaching, and human encroachment (CMS, 2014). Although trophy hunting for white-eared kob is legally permitted in Ethiopia, the Gambella region lacks CHAs, as seen in Table 5 (CMS, 2014; Fischer et al., 2015; Siege, 2014). Given the abundant kob population, establishing new hunting areas is encouraged to support much-needed local income generation (Siege, 2014).

The **lack of benefit-sharing mechanisms** with local communities and governance challenges have been identified as obstacles to the hunting industry's development (Sultan et al., 2017). Without proper community engagement and equitable distribution of hunting revenues, local support for conservation efforts diminishes, potentially leading to increased poaching and habitat encroachment (HUSA, 2012; Sultan et al., 2017).

In summary, **Ethiopia's trophy hunting industry has the potential to contribute significantly to conservation and economic development.** However, high hunting fees, regulatory complexities, and governance challenges hinder its growth and accessibility to international hunters. While some species, such as the mountain nyala, remain stable, the underutilisation of quotas and declining participation indicate financial and structural barriers. Additionally, land-use pressures, habitat degradation, and insufficient community benefit-sharing threaten the long-term sustainability of of hunting and the related wildlife conservation. **Addressing these challenges through policy adjustments, improved governance, and enhanced community involvement could help unlock the industry's full potential while supporting conservation efforts.**

Fisheries

Ethiopia, often referred to as the "Water Tower of Africa," has abundant inland water bodies that can be sustainably utilised to support economic growth in the country (Anteneh et al., 2023). As a landlocked country, Ethiopia relies heavily on its inland water resources for fisheries. The **country is recognised for its substantial and physically accessible freshwater reserves**, which include an estimated 122 billion m^3 (Wendimu et al., 2024). Of this, the mean annual river flow is distributed across 12 river basins, 4.5 billion m^3 of underground water, as well as nine saltwater lakes, 11 freshwater lakes, 12 major marshes, and numerous crater lakes (Wendimu et al., 2024; Teferi & Admassu, 2019).

Ethiopia's inland fisheries are primarily centred around key lakes such as Lake Tana, Lake Ziway, and Lake Abaya, covering approx. 7,400 km^2 of lake area and 7,185 km of river length (Desalegn & Shitaw, 2021). The country's drainage system comprises rivers, streams, and lakes originating from the Ethiopian highlands. **These aquatic resources play a crucial role in local livelihoods, food security, and rural economic activities,** particularly for communities residing near major water bodies (FAO, 2020). The Blue Nile Basin plays a crucial role in Ethiopia's hydrology and biodiversity, with Lake Tana as its primary source (see Text box 5). Flowing through central and northwestern Ethiopia, the Blue Nile spans approx. 1,000 kms from Lake Tana to the Sudanese border, carrying an estimated 50 billion m^3 of water annually. It forms part of a complex hydrological system, including tributaries such as the Dinder River, Didessa, Beles, Jemma, and Dabus Rivers, along with the Koga and Fincha basins. Although its drainage area covers only 324,000 km^2, the Blue Nile contributes 58% of the Nile's total water volume and supplies significant sediment to Egypt's deltas and alluvial plains.

According to the Federal Democratic Republic of Ethiopia (Proc.1/195), land and water resources are owned by the state, meaning that water and associated resources cannot be privately owned (FDRE, 1995). **The Federal Fisheries Proclamation, ratified by Parliament on 4th February 2003, is the primary legal document governing the fisheries sector.**

Text box 5

Blue Nile Basin

The lower basin, particularly the Jamma, Guder, Didessa, and Dabus Rivers, is a major contributor to seasonal flooding. The southwest region, characterised by high rainfall, is home to key tributaries such as the Didessa and Dabus Rivers. Other significant tributaries include the Beshilo, Dabena, Anger, Mugger, Belessa, and Wonchit Rivers. **The Blue Nile Basin supports a rich aquatic biodiversity.** Within Ethiopia's borders, the drainage system is home to at least 30 native fish species. The Cyprinidae family is the most diverse, with a significant presence in Lake Tana. Endemism is high, with at least 24 species unique to the basin. Of particular importance, 19 endemic species belong to the *Labeobarbus* genus, making up a quarter of the total species count in Lake Tana. **The ecological richness and hydrological importance of the Blue Nile Basin make it a cornerstone of Ethiopia's wildlife economy, supporting fisheries, biodiversity conservation, and nature-based livelihoods.**

Source: Wendimu et al., 2024

The Fisheries Development and Utilisation Proclamation No. 315/2003 (FDRE, 2003), aims to conserve fish biodiversity and its environment, prevent and control over-utilisation of fisheries resources, enhance the supply of safe and high-quality fish, and promote aquaculture development to support food security (FAO, 2015). This legal framework plays a critical role in ensuring the sustainable management of Ethiopia's fisheries sector within the broader wildlife economy.

Ethiopia's freshwater fish diversity is composed of 12 orders, 31 families, and 75 genera, encompassing approx. 200 fish species, of which 194 are native (Desalegn & Shitaw, 2021). The **country hosts 40 endemic fish species** and 11 exotic species (Ibid.). The **fishing sector plays a vital role in local livelihoods, providing employment and food security**. However, its **contribution to Ethiopia's GDP remains minimal,** accounting for only 0.02% (FAO, 2021). **Fisheries directly employ approx. 15,000 fishers and indirectly support over 100,000 people** through processing, marketing, and related activities (Ibid.). Accordingly, fisheries is a key sector for reducing poverty and the growth of the sector could be considered a potential strategy for directly and indirectly diversifying household income.

The **majority of fish consumed in Ethiopia come from the wild and are harvested using artisanal (small-scale) fishing techniques** (Hebano & Wake, 2020). The country's estimated annual fish production for major water bodies was approx. 20,742 tonnes as of 2016 (see Table 7) (Alemayehu, 2017). Ethiopia's fish production has increased by a factor of more than five in the past three decades (3,500 tonnes in 1983 to 15,681 tonnes in 2000 and 18,058 tonnes in 2010) (Hebano & Wake, 2020). **Fish consumption is often seasonal, with demand and supply fluctuating throughout the year** (Eskinder et al., 2013; Wendimu et al., 2024). Ethiopia's per capita fish consumption remains low compared to other African countries due to dietary preferences, limited supply, and insufficient processing facilities (Teferi, 2018). In 2014, the country's overall annual fish production potential was estimated at approx. 94,500 tonnes (Tesfaye & Wolff, 2014), yet only 50–60% of this potential is currently being utilised (FAO, 2020). The per capita fish supply is around 200 g, significantly below the East African subregion average of 2.6 kg per capita annually (Demilew & Abebe, 2021).

Table 7: Commercially utilised lakes, landing areas, and potential fish yield

Water bodies	Main landing site	Area (km²)	Fish yield possible (tonne/ year)
Abaya	Arba Minch	1,070	600
Awassa	Awassa	91	611
Chamo	Arba Minch	350	4,500
Koka reservoir	Koka	255	700
Langano	Oittu	230	240
Lugo	Lugo	25	400
Tana	BahrDar	3,500	10,000
Turkana	Ethiopian (1.3% total area)	94	750
Ziway	Ziway	434	2,941
Total		**6,049**	**20,742**

Source: Alemayehu, 2017

Fishing activities in Ethiopia are broadly categorised into artisanal, subsistence, commercial, and aquaculture. Artisanal fishing is the most widespread form, predominantly carried out by local fishermen using traditional, small-scale methods (Hebano & Wake, 2020). These fishers often rely on gillnets, beach seines, and hook-and-line techniques to harvest species such as tilapia (*Oreochromis niloticus*), Nile perch (*Lates niloticus*), and catfish (*Clarias gariepinus)* from major lakes such as Chamo, Ziway, and Tana (Ibid.). Artisanal fishery activities in Lake Tana are dominated by private fishers (82.9%), while 17% is conducted by members of fishing cooperatives (Amare et al., 2018). In both Lake Tana and Lake Ziway, fishers operate at different levels of engagement, classified as full-time (24.8% in Ziway, 58.5% in Tana), part-time (70.4% in Ziway, 14.6% in Tana), and infrequent participants (4.8% in Ziway, 26.8% in Tana) (Ali & Khan, 2017; Ignatius & Zelalem, 2011).

The primary motivation for fishing in Lake Ziway is household consumption (60.8%), followed by income generation (36.8%) and asset accumulation (2.4%) (Amare et al., 2018). In Lake Tana, 56.1% of fishers rely on their catch for food, 34.1% for income, and 2.4% for employment opportunities (Ibid.). On average, fishers earn ETB 13,492.86 annually (approx. USD 107) by supplying whole, gutted, and filleted fish to local markets (Amare et al., 2018). Fishing is often seasonal, with farmers engaging in it during the agricultural off-season and students participating during school breaks (Dagnaw et al., 2021). However, **artisanal fishing faces challenges** due to limited regulatory oversight, leading to unsustainable practices such as the use of small-mesh nets, overfishing, and ecological degradation (Dersseh et al., 2020).

Despite its significant potential, **Ethiopia's fisheries sector remains underdeveloped**, with limited focus on commercialisation. When properly recognised and supported with effective policies and strategies, the sector could play a crucial role in rural economic development (FAO, 2018). **Ethiopia's Ministry of Agriculture (MoA, 2020) identified fisheries as a key intervention area for enhancing food security, creating employment, and improving rural livelihoods.** Commercial fishing is concentrated around Lakes Ziway, Chamo, and Tana, where organised cooperatives operate larger boats to target high-value species such as Nile perch (Dagnaw et al., 2021). These fish are sold in local urban markets or processed for export (Ibid.). However, t**he sector faces challenges such as** inadequate infrastructure for cold storage and transportation, leading to substantial post-harvest losses (Gebremariam & Dadebo, 2021). Inefficiencies in the supply chain further hinder economic growth, making it difficult to meet both local demand and export requirements (Ibid.).

In the Lume district, fisheries in Lake Koka have expanded over the past few decades, with the lake being a major focus of the Lake Fisheries Development Project (LDP) in the 1990s (Lume District Office of Agriculture, 2020). The Lake has an estimated production potential of 1,194 tonnes per year and serves as a primary source of income for many rural households (Endalew et al., 2020). It supports commercially valuable fish species, including tilapia (*Oreochromis niloticus*), common carp (*Cyprinus carpio*), and catfish (*Clarias gariepinus*) (Ibid.). **As an open and easily accessible water body, Lake Koka is vital to approx.15,000 people** from surrounding districts who rely directly on its fisheries for their livelihoods (Endalew et al., 2020).

Aquaculture is a promising avenue for boosting fish production in Ethiopia. Although still in its infancy, initiatives such as cage culture and pond-based fish farming show potential (FAO, 2021). Tilapia and catfish are popular species due to their adaptability and high market demand (World Bank, 2018). Pilot projects by Non-Governmental Organisations (NGOs) and international organisations have demonstrated the viability of small-scale aquaculture in rural communities (World Bank, 2018). Expanding these initiatives could bridge the gap between supply and demand, enhance food security, and create jobs (Ibid.). **Ethiopia's aquaculture sector holds significant potential, but it faces several challenges**, including the lack of modern aquaculture technologies, sustainable fish seeds, and quality feed (World Bank, 2018).

Overall, the fisheries sector plays a vital role in both domestic trade and the import-export market (Yazew et al., 2020). However, Ethiopia's cross-border fish trade is not well-documented. **The country imports significant amounts of fish from neighbouring countries**, although some of these imports end up being exported to Sudan through porous borders with South Sudan (MULAT, 2024).

Challenges in the fisheries sector

Sources: Gebremariam & Dadebo, 2021; Meko et al., 2017

- **Inadequate government support:** There is insufficient government support for the fisheries sector. Without strong government support, including the allocation of resources to research, management, and development, the sector struggles to overcome key issues such as overfishing, illegal fishing, and insufficient infrastructure (Hebano & Wake, 2020). Furthermore, effective regulation and enforcement of fishing practices are hindered, and there is limited financial assistance for fishers and aquaculture businesses, making it difficult for them to improve sustainability and productivity. This also affects the ability to expand the sector and attract private investment.
- **Overfishing and unsustainable practices:** Overfishing results from a lack of effective regulation and enforcement of fishing quotas or sustainable harvesting methods. The reliance on small-mesh nets is particularly problematic as it leads to the capture of juvenile fish, which prevents the population from replenishing. This has long-term ecological consequences, including loss of biodiversity, habitat destruction, and reduced fish productivity in key water bodies. Unsustainable practices exacerbate the challenge, leading to the collapse of some local fish stocks, which further destabilise the sector and limit the income potential for fishers (Dersseh et al., 2020).
- **Infrastructure deficiencies:** The commercial fishing sector suffers from inadequate infrastructure, particularly in cold storage, processing, and transportation. High post-harvest losses are significant, undermining fisheries' economic potential. Without proper infrastructure to store and process fish, a significant portion of the catch is wasted due to spoilage or damage during transport. Cold storage facilities are essential for preserving the quality of fish, but the absence of these resources results in fish often sold at lower prices or even discarded.
- **Limited aquaculture development:** While aquaculture can provide a sustainable alternative to capture fisheries, it is limited by a lack of technical expertise and knowledge, as well as insufficient infrastructure and investment. The absence of high-quality inputs such as fish feed, fingerlings, and appropriate farming techniques results in low productivity. Many farmers also lack the training needed to manage fish farms effectively.
- **Environmental and climate challenges:** Environmental degradation, pollution, and climate change pose additional threats to Ethiopia's inland water resources. Changing rainfall patterns and fluctuating water levels disrupt fish habitats and the productivity of inland water resources. When water levels are low it affects fish migration and spawning.
- **Socio-economic constraints:** Many fishers work in the informal economy, meaning they lack legal protections and are often excluded from financial systems, such as banks or microfinance institutions. This restricts their ability to access capital for purchasing better equipment, improving their operations, or adopting sustainable practices. Without access to training, fishers may not be aware of more efficient or sustainable methods of fishing, which limits their productivity and income.

Ethiopia's fisheries sector, though currently underdeveloped, holds immense potential for economic development, employment creation, and food security. Strengthening policies, investing in infrastructure, and expanding aquaculture could transform fisheries into a significant contributor to Ethiopia's economy while ensuring sustainable resource use. Addressing current challenges will be essential for unlocking the full potential of the country's rich inland fisheries.

Wildlife ranching

Ethiopia's Wildlife Strategy and Policy (2011) encompasses sustainable tourism, hunting, trade, and ranching, aiming to use wildlife resources responsibly. **While these strategies indicate a framework for diverse wildlife ranching activities, specific details on the implementation and extent of such practices are not extensively documented.**

Crocodile ranching in Ethiopia is a form of sustainable wildlife use focused on the Nile crocodile (*Crocodylus niloticus)*, primarily through the Arba Minch Crocodile Ranch (AMCR), established in the 1980s with support from the Ethiopian government (Shirley et al., 2014). Crocodile ranching and management in Ethiopia have been the subject of a detailed review by the International Union for Conservation of Nature – Species Survival Commission (IUCN-SSC) Crocodile Specialist Group, following a request by the Ethiopian Wildlife Conservation Authority (EWCA) (Ibid.). Focusing primarily on Nile crocodiles, the 2014 report evaluates the state of crocodile conservation, utilisation, legal frameworks, and the potential for sustainable trade.

The report highlights the following key findings:

- **Arba Minch Crocodile Ranch (AMCR):** The main crocodile ranch in Ethiopia, historically involved in skin exports, now faces operational challenges and reduced commercial activity. The report recommends diversifying its model to include ecotourism and education. See Text box 6 for further details on AMCR.
- **Crocodile population status:** Surveys of Lake Chamo and other areas confirm healthy wild populations but highlight the need for more consistent monitoring and data collection on nesting sites and age structure.
- **Trade and trophy hunting:** Ethiopia has the potential to re-open regulated trophy hunting of crocodiles under a sustainable framework. Historical exports have decreased significantly, and a more structured, non-detrimental trade process is needed.
- **Legal and administrative gaps:** While Ethiopia has CITES-compliant frameworks, implementation and monitoring remain weak. The report stresses the need for a cohesive national crocodile management plan.
- **Human-wildlife conflict:** Conflict between communities and crocodiles, especially around Lake Chamo, is rising. The report recommends the development of mitigation strategies.
- **Species identification:** There is emerging evidence that the West African crocodile (*Crocodylus suchus)*, a separate species from *C. niloticus*, may also be present in Ethiopia, requiring further investigation.

Ethiopia has engaged in various forms of wildlife ranching beyond crocodile farming. In the mid-1980s, the Ethiopian Wildlife Conservation Organization (EWCO) initiated ostrich ranching alongside crocodile ranching to generate revenue for conservation efforts (Hundessa, 1996). In 2020, there were estimated to be more than 200 civet farmers in Ethiopia, with about 4,000 civet cats in captivity (see Text Box 8 for more information) (Endallew & Dagne, 2020). However, detailed information on the current status and scale of ostrich ranching, as well as any other wildlife ranching, in Ethiopia was not found.


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Text box 6

Arba Minch Crocodile Ranch (AMCR) in Ethiopia

Ethiopia engages in crocodile ranching, primarily through the Arba Minch Crocodile Ranch (AMCR), established in 1984 near Lake Abaya. The Ranch collects Nile crocodile (*Crocodylus niloticus*) eggs from the wild, hatches them, and raises the juveniles in controlled environments. Once the crocodiles reach approximately five years of age or approx. two metres in length, they are harvested for their skins, which are exported for luxury leather products.

Due to halted crocodile skin exports for over two decades, AMCR now relies primarily on tourism. AMCR plans to add new attractions, such as an aquarium, to boost revenue and self-sustainability. A partnership with Arba Minch University is guiding this expansion, and external support, such as from the Hailemariam and Roman Foundation, is being sought.

The Ranch faces financial constraints, requiring over one million ETB (approx. USD 7,668) annually for feed alone, and is finalising a business plan to diversify income. Though AMCR holds a stock of 3,600 crocodile skins and 1,000 crocodiles ready for slaughter, the skin market has collapsed, with no sales for research or commercial purposes since 2000. There is growing interest in engaging private sector partners to revive the skin trade and explore the potential of the crocodile meat market.

Source: Capital Newspaper, 2021

Wildlife trade

The **Ethiopian Wildlife Conservation Authority (EWCA) oversees wildlife trade and law enforcement within and beyond protected areas** (Van Zyl et al., 2024). It also represents Ethiopia in international agreements, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species of Wild Animals (CMS), and the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA). Table 8 outlines the international and regional agreements relevant to wildlife trade within, transiting through, or originating from Ethiopia.

Table 8: List of applicable international and regional agreements relevant to the management of wildlife trade in Ethiopia

No.	Convention name	Ethiopia status
1	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Party, 1989
2	United Nations (UN) Convention against Transnational Organised Crime, including: - Resolution E/2013/30 to treat Wildlife Crimes as a "Serious Crime"	Party, 2007
3	Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora	Signatory, 1995
4	African Union (AU) African Common Strategy on Combating Illegal Exploitation and Trade in Wild Fauna and Flora	AU Members
5	Convention on the Conservation of Migratory Species of Wild Animals (CMS), including: - Decisions 12.55 to 12.60 and 13.86 to 13.87 on Joint CMS-CITES African Carnivores Initiative - Decisions 12.61 to 12.66 and 13.92 to 13.95 Conservation and Management of Cheetah and African Wild Dog	Party, 2010
6	World Health Organisation (WHO) Convention concerning the Protection of the World Cultural and Natural Heritage	Party, 1977
7	Convention on Biological Diversity (CBD)	Party, 1994
8	AU Convention on the Conservation of Nature and Natural Resources	Signatory, 1968
9	AU Revised Convention on the Conservation of Nature and Natural Resources	Signatory, 2004
10	UN Convention Against Corruption	Party, 2007
11	AU Convention on Corruption	Party, 2007
12	Un World Tourism Organization (UNWTO) Framework Convention on Tourism Ethics	Not signed
13	Agreement Establishing the Inter-Governmental Authority in Development (IGAD)	Party, 1986
14	World Customs Organization (WCO) Convention on the Simplification and Harmonization of Customs Procedures	Not signed
15	WCO Convention on Mutual Administrative Assistance for the Prevention, Investigation and Repression of Customs Offences	Not signed
16	WCO International Convention on the Harmonized Commodity Description and Coding System	Party, 1995
17	WCO Convention Admission Temporaire – Temporary Admission (ATA) Carnet for the Temporary Admission of Goods	Not signed
18	WCO Convention on Temporary Admission (Istanbul Convention)	Not signed
19	WTO Agreement on Sanitary and Phytosanitary Measures	Observer, 2003
20	AU Phyto-sanitary Convention for Africa	Party, 1972
21	INTERPOL Constitution, including: - INTERPOL Rule on the Processing of Data	Party, 1958
22	AU-Statute of the African Union Mechanism for Police Corporations (AFRIPOL)	Not signed
23	AU-Africa Maritime Transport Charter (Revised)	Party, 2012
24	Organization of African Unity (OAU) Convention on the Prevention and Combating of Terrorism	Party, 2003
25	Protocol of the OAU Convention on the Prevention and Combating of Terrorism	Party, 2008
26	IGAD Convention on Mutual Legal Assistance in Criminal Matters	Ratified, 2012
27	IGAD Regional Biodiversity Action Plan - Statement on Wildlife Trade	Adopted, 2017
28	IGAD Hawen Protocol	Adopted, 2017

Source: Wingard et al., 2020, p. 8.

In terms of wildlife trade, **EWCA has granted licenses to six operators permitted to export live wildlife species**. **Between 2014 and 2023, EWCA generated USD 263,825 from the live wildlife trade** (van Zyl et al., 2024) (Figure 5). The primary species involved in this trade include the Leopard tortoise (*Stigmochelys pardalis*) and other reptilian species, with most wildlife exported to Asian countries, specifically Thailand and the United Arab Emirates (Ibid.).

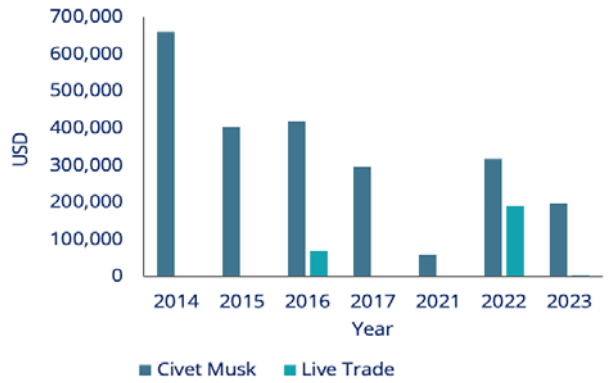
Table 9: Purpose of Ethiopia's exports and imports of CITES-listed species (2014–2023)

Purpose	Exports		Imports	
	Quantity	%	Quantity	%
Breeding in captivity	311	0.00%	0	0.00%
Circus or travelling exhibition	1	0.00%	11	0.36%
Commercial	17,055,794	93.82%	2,463	81.21%
Educational	0	0.00%	43	1.42%
Hunting trophy	503	0.00%	1	0.03%
Medical	0	0.00%	430	14.18%
Personal	24	0.00%	42	1.38%
Uncategorised	1,123,364	6.18%	19	0.63%
Zoo	0	0.00%	24	0.79%
Total	**18,179,997**		**3,033**	

Source: CITES, 2025b

CITES regulates the international trade in endangered species to ensure their survival and safeguard biodiversity. Ethiopia, which joined CITES in April 1989 and entered into force in July 1989, is an active participant in CITES (CITES, 2025a). It employs its regulations to manage and monitor the trade in endangered species. This section examines Ethiopia's CITES exports and imports over a 10-year period (2014-2023). The data was sourced from the CITES trade database, and all subsequent information on CITES-listed species is derived from this database (CITES, 2025b), unless stated otherwise. **Between**

Figure 5: Ethiopia's live and civet musk trade exports (2014-2023) in USD



Source: van Zyl et al., 2024

2014 and 2023, Ethiopia exported 18,179,997 CITES-listed specimens, significantly more than the 3,033 specimens imported. Accurately determining the exact number of CITES-listed species traded via the CITES database is challenging due to inconsistent recording methods. Quantities often include partial specimens, derivatives, and measurements by weight or volume, potentially leading to inflated figures. As a result, these quantities require scrutiny, as they may not reflect the actual number of taxon imported. Quantities are reported from both the exporter and the importer. Amounts reported were calculated using the highest reported value, whether from the importer or exporter, depending on which was greater. Table 9 indicates the purposes and reported quantities of exports and imports from Ethiopia.

CITES-listed species exports

Exports from Ethiopia are predominantly for commercial purposes, accounting for 93.82% of all exports. Of these commercial exports, 99.85% belong to the *Cactaceae* (cactus) family, all artificially propagated and native to South America. The exported genera include Cleistocactus, *Echinocactus, Echinopsis, Espostoa, Ferocactus, Gymnocalycium, Haageocereus, Mammillaria, Melocactus, Myrtillocactus, Neoraimondia, Oreocereus, Parodia, Pilosocereus, Polaskia, Rebutia, Stenocereus, Stetsonia,* and *Weberbauerocereus*. The vast majority (99%) of these *Cactaceae* exports are destined for the Netherlands, while the remaining 1% is exported to South Africa. Most specimens are exported live (96%), and the remaining 4% are exported as stems.

The **illegal trade in cacti and succulents threatens many species,** with 31% at risk of extinction due to illegal collection (Nature Plants, 2015). A black market for rare succulents fuels poaching to meet collector demand (Nelson, 2021). Although the CITES-listed species exported from Ethiopia may lack conservation value and pose a minimal invasive risk, the demand for exotic ornamental plants raises the potential for introducing invasive species. One such example is prickly pear (*Opuntia ficus-indica*), which, while cultivated for livestock feed and soil protection, also threatens native biodiversity due to its invasive nature (Hussein & Estifanos, 2023). **Given Ethiopia's role in CITES-listed cactus exports, strict monitoring is necessary to prevent both overexploitation and the unintended spread of exotic species.**

The uncategorised export category comprises 6.18% of Ethiopia's exports, with 99.8% of these (1,121,378 specimens) being African civets (*Civettictis civetta*). African civets account for just 0.11% (18,331 specimens) of Ethiopia's total commercial exports. However, the source of these uncategorised African civet exports remains undocumented. Therefore, whether they are ranched or taken from the wild is unclear. However, all commercially exported African civets are classified as ranched specimens, ensuring none were taken from the wild. Figure 5 indicates **approx. USD 2.3 million was generated from the civet musk trade between 2014 and 2023** (van Zyl et al., 2024). Both commercial and uncategorised exports primarily consist of musk, a secretion produced by the perineal glands.

France is the largest importer of civet musk, importing approx. 99.56% of these exports and less than 1% are exported to South Korea (CITES, 2025b). See Text box 8 regarding the African civet farming and musk production in Ethiopia. Leopard tortoises (*Stigmochelys pardalis*) are popular in the exotic pet trade due to their manageable size, as seen in Text box 7.

Text box 7

Leopard tortoise *(Stigmochelys pardalis)* trade

Leopard tortoises (*Stigmochelys pardalis*) are native to Ethiopia and commonly found in savanna and grassland habitats. They are popular in the exotic pet trade due to their manageable size, attractive shell patterns, and herbivorous diet. Ethiopia has been identified as a source country for the international pet trade, with many specimens exported (often illegally) to Europe, North America, and Asia. Efforts have been made to establish tortoise ranching in Ethiopia, but progress remains limited. As of 2020, only one ranch had been set up, and most leopard tortoises used in trade were still being sourced from the wild, raising significant conservation concerns. In addition to limited ranching initiatives, organisations such as Born Free's Ensessa Kotteh Wildlife Rescue, Conservation, and Education Centre in Ethiopia provide sanctuary for rescued tortoises, including leopard tortoises (Born Free, 2024).

Source: Asefa et al., 2020

CITES-listed species imports

Commercial imports dominate at 81.21%, followed by medical (including biomedical research) (14.18%). The largest commercial import was 2,040 specimens of Crown-of-thorns (*Euphorbia milii)* from Thailand in 2017, accounting for 82.83% of commercial imports. The second-largest was 393 American alligators (*Alligator mississippiensis)* (15.96%), imported from China and Thailand over the ten years. Medical imports included American alligator and Crab-eating macaque (*Macaca fascicularis*), both sourced from the United States.

Text box 8

African civet farming and musk production in Ethiopia

Ethiopia is the world's leading supplier of civet musk, contributing over 90% of the global market. Civet musk is secreted from the perineal glands of the African civet (*Civettictis civetta*) and is a key ingredient in the perfume industry. Civetone is the primary component of civet musk, which is responsible for its distinct scent and has been used in perfumery for centuries. Ethiopia has a long history of civet farming, with production centres concentrated in southwest Ethiopia, western Oromia, Sidama, and Shoa. **In 2020, there were estimated to be more than 200 civet farmers in Ethiopia, with about 4,000 civet cats in captivity**. The traditional knowledge of civet farming is passed down within certain families across generations.

Market and trade challenges

While civetone remains a high-value commodity, demand has fluctuated due to:

- Increasing use of synthetic alternatives in perfumery.
- Negative publicity about animal welfare concerns.
- Middlemen compromising the quality of civet musk through adulteration.

The decline in demand for civet musk is partly attributed to a National Geographic article featuring a Limu farmer extracting civet musk. The article framed the practice as animal abuse, likely deterring European and North American buyers. Civet farming in Limu remains a secretive and tightly controlled trade.

These challenges have reduced export volumes and impacted smallholder civet farmers, particularly in the Limu region, where the practice has been passed down through generations. To sustain European demand for civet musk, the conditions in which the animals are kept must improve with better handling practices and the use of modern cages. However, farmers continue to face high production costs. Reducing middlemen could help prevent adulteration. However, Ethiopia's Quality and Standard Authority (QSAE) continues to certify and facilitate civet musk exports.

Source: Endallew & Dagne, 2020

Illegal Wildlife Trade (IWT)

Wildlife is one of the illicit goods frequently targeted by organised crime groups, creating significant challenges for governments across the Horn of Africa (Wingard et al., 2020). This **trade is driven by underlying factors** such as poverty, conflict, and regional instability (Ibid.). On a global scale, the illegal wildlife trade (IWT) is estimated to be worth USD 7–23 billion annually, ranking among the top three most lucrative illicit industries (Nellemann et al., 2016). It is largely orchestrated by highly organised international criminal networks that exploit high profits and low risks (Ibid.). **Ethiopia's wildlife is constantly threatened by poaching and illegal trafficking** (Tessema, 2017). For many years, **the country has acted as a source and a transit point for illicit international wildlife trade** involving at least 32 species (Wingard et al., 2020). In October 2024, the Ethiopian Wildlife Conservation Authority (EWCA) and the African Wildlife Foundation (AWF) partnered to establish a canine unit at Bole International Airport (BIA) in Addis Ababa, equipped with four detection dogs and EWCA-trained handlers to combat wildlife trafficking at this key transit hub, which serves 6.7 million passengers annually (Odhiambo, 2024).

Key species impacted by the trade include African elephant (*Loxodonta africana*), lion (*Panthera leo*), cheetah (*Acinonyx jubatus*), leopard (*Panthera pardus*), various reptiles, and avian species such as raptors (Tessema, 2017). These species are targeted for their high value in illegal markets (Tessema, 2017; Wingard et al., 2020). **Wildlife trafficked from Ethiopia is primarily destined for East Asia** (primarily China) and the Middle East, which are major hubs for demand. Additionally, reptiles and birds are exported to Europe, while lion, leopard, and cheetah are transported to the United States (Tessema, 2017). Text box 9 indicates illegal wildlife trafficking trends in Ethiopia between 2011 and 2019.

Text box 9

Illegal wildlife trafficking in Ethiopia (2011 - 2019)

Between 2011 and 2019, Ethiopia recorded 842 seizure cases of illegal wildlife trafficking, involving 19 species. Elephant ivory dominated the trade, accounting for 94% of seizures (over 1,000 kg of raw/worked ivory and 3,879 ivory items such as bracelets and figurines). Other species affected included leopard, hippopotamus, lion, cheetah, and various birds and reptiles. Most seizures occurred at Bole International Airport (96%), with the majority in transit (80%), confirming **Ethiopia's role as a key transit hub for African ivory and wildlife products destined for Asia.** China was the principal destination, implicated in 94% of ivory seizures, while origin countries included Nigeria, Angola, DRC, Equatorial Guinea, Ghana, and Ethiopia itself.

Overall, illegal wildlife trafficking activity in Ethiopia showed a declining trend, with ivory trade patterns fluctuating, declining from 2011–2014, rising until 2017, and declining thereafter. **This reduction reflects** stronger law enforcement measures, the establishment of an Environmental Crime Unit, and greater regional and international cooperation. However, **challenges remain**, including weak sentencing, limited enforcement capacity, insecure stockpile management, inadequate data systems, and insufficient community involvement. Opportunities exist through donor-supported projects, draft amendments to strengthen penalties, and expanded use of tools such as Spatial Monitoring and Reporting Tool (SMART) monitoring and sniffer dogs. Ethiopia's progress demonstrates potential for curbing illegal wildlife trafficking but highlights the **need for sustained investment, collaboration, and capacity building** to address remaining gaps.

Source: Tessema et al., 2021

Forest products

Ethiopia possesses the largest forest land resource in the horn of Africa, with an estimated 12.5 million hectares (ha) of forest and 40.6 million ha of other woody vegetation, totaling 53.1 million ha (FAO, 2015). **These forest ecosystems play a vital role in supporting the livelihoods of the majority of the population**, either directly through forest-based resources or indirectly through ecosystem services (Sisay & Gitima, 2020). **Forests in Ethiopia are ecologically and economically significant,** contributing to biodiversity conservation, climate regulation, and sustainable development (Ibid.). According to the Ministry of Environment, Forest and Climate Change (MEFCC, 2018), forests are defined as areas with natural or planted trees (including bamboo) over two meters in height, more than 20% canopy cover, and a minimum area of 0.5 ha. The country's forests are diverse, ranging from the lush tropical rain and cloud forests of the southwest to the dry forests of the north and east, including various forest types such as the Ethiopian Montane Grasslands and Woodlands, Moist Montane Forests, East Sudanian Savannas, Somali Acacia-Commiphora Bushlands and Thickets, and the Ethiopian Montane Moorlands (World wildlife, 2020). **This ecological diversity underscores the critical importance of forests in Ethiopia's environmental sustainability and resilience to climate change.** In terms of management of forests, Ethiopia has some forests which are under Participatory Forest Management (PFM) (see Text box 10).

As mentioned above, Ethiopia is endowed with diverse vegetation ranging from lowland scrublands to lush tropical rainforests, encompassing both natural and planted forests. These forests are not only critical for maintaining the country's ecological diversity but also play a significant role in its economic development (Mulatu, 2019; Eyasu et al., 2020; Shumi et al., 2021). **In the 2012–13 fiscal year, forest resources generated economic benefits equivalent to ETB 111.2 billion(approx. USD 16.7 billion),** accounting for 12.86% of the country's GDP, with an additional 6.77% attributed to the forests' indirect contribution to sectors such as agriculture (UNEP, 2016; FAO & UNEP, 2020). However, **Ethiopia's forests face immense pressure** from rapid population growth, rising demand for forest products, and agricultural expansion, which have led to significant deforestation averaging a loss of 91,000 ha per

Text box 10

Participatory Forest Management (PFM)

Participatory Forest Management (PFM) was introduced in Ethiopia in the mid-1990s as a community-based natural resource management (NRM) strategy aimed at reversing deforestation and promoting sustainable forest use. Rooted in constitutional, practical, and effectiveness-based justifications, PFM empowers local communities by involving them in forest decision-making, while sharing the costs and benefits of conservation.

The approach has significantly contributed to transitioning from open-access forest use to more regulated and community-managed systems. **As of 2018, approx. 1.5 million ha of forestland were under PFM, with targets to expand this to four million ha by 2030.** The 2018 Forest Proclamation (No. 1065/2018) institutionalises PFM, offering legal and policy solutions to overcome previous implementation challenges.

PFM is recognised in Ethiopia's Nationally Determined Contributions (NDCs) as a key nature-based solution for climate change mitigation and adaptation. Studies show PFM has the potential to reduce emissions from deforestation and degradation, enhance ecosystem services, and build resilience among forest-dependent communities.

However, the success of PFM hinges on a nuanced understanding of the role forests play in rural livelihoods and poverty reduction. Evidence is needed on how PFM strengthens various livelihood assets - natural, physical, financial, human, and social. Moving forward, adaptive approaches are essential to ensure PFM remains responsive to evolving socio-economic and environmental contexts.

Source: Girma et al., 2023

year (MEFCC, 2018). Beyond direct threats, challenges such as inadequate enforcement of forest policies, unclear tenure rights, weak private sector engagement, and gaps in PFM have further exacerbated forest degradation (Kindu et al., 2013). In response, the Ethiopian government has made considerable efforts to curb deforestation and rehabilitate degraded lands through large-scale afforestation and reforestation programmes, alongside promoting PFM as a strategy to sustainably manage existing forest resources (Mengist, 2020; Zeleke & Vidal, 2020).

Non-Timber Forest Products

Non-timber forest products (NTFPs) play a vital role in food security, traditional medicine, and local economies in Ethiopia (Walle & Nayak, 2020). **Approximately 11.6 million rural households in Ethiopia depend on NTFPs for their livelihoods**, with an **estimated 57 million people engaged part-time or full-time in NTFP collection** (United Nations Development Programme, 2017). The country's ecological diversity supports a range of NTFPs, encompassing different types of natural resources (Gonfa, 2019). The Yayo Reserve is one example which significantly contributes to rural livelihoods in the Yayo District (see Text box 11).

In areas where agriculture is constrained by poor soil fertility, climate change, or limited arable land, NTFPs provide a crucial alternative or supplementary income (Walle & Nayak, 2020). Honey production, for example, has become a significant income source for many farmers and beekeepers in Ethiopia (Farm Africa, 2024). This highlights the broader importance of NTFPs for rural populations in remote or marginalised areas.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Non-timber forest products help alleviate poverty by diversifying income and reducing reliance on traditional agriculture (Getachew et al., 2018). NTFPs create job opportunities for local people, fostering both subsistence and commercial activities related to collecting and selling these NTFPs (Bayesa & Bushara, 2022).

Ethiopia's common NTFPs include beeswax and honey; medicinal plants; natural gum such as frankincense, myrrh and gum arabic; resin; reeds; edible wild plants; mushrooms, fruits; coffee; spices such as Ethiopian cardamom and Aframomum corrorima (ginger family); ornamental plants; fodder and latex; bamboo (*Arundinaria alpina and Oxytenanthera Abyssinica*), and the shiny-leaf Buckthorn (*Rhamnus prinoides*) (Moloro & Abebe, 2022; Asfaw & Etefa, 2017; UNEP, 2016). These products help improve rural communities' livelihoods by supplying them with medicine, income, employment, and food. **It has been estimated that NTFPs provide up to USD 2.3 billion per annum to the national economy** (Worku, 2014). **These NTFPs are a safety net for forest-dependent rural communities** during periods of hardship, drought and hence are a flagship of their sociocultural and economic growth (Endamana et al., 2016; Ojea et al., 2016). However, **harvesting these products from natural forests remains challenging due to sustainability concerns** (UNDP, 2017).

The value of NTFPs differs in Ethiopia, some which are of high value enter local, regional and international markets whilst others of low value are utilised at household level (Gonfa, 2019). According to various authors (Table 10), commercially important NTFPs are coffee, honey, gum and resin, spices, bamboo, and the non-commercial NTFPs are fodder, medicinal plants, food, household equipment, farm implements, construction materials and among others (Ibid.).

Text box 11

The contribution of Non-Timber Forest Products to the rural livelihoods in the Yayo District

The Yayo Coffee Forest Biosphere Reserve in western Ethiopia, known for its rich biodiversity, plays a vital and diverse role in sustaining rural livelihoods through Non-Timber Forest Products (NTFPs). This region, characterised by its rich ecosystems and diverse climatic zones, has long been a source of sustenance and income for the surrounding communities. NTFPs found in this region include forest coffee, firewood, wild honey, wild spices such as cardamom, and medicinal plants. These products are vital for both subsistence and commercial purposes. In the Yayo district, nearly all households depend on firewood for energy needs, while forest coffee emerges as the most valuable NTFP due to its high commercial demand. **Approximately 83.8% of households actively collect forest coffee, accounting for 74.9% of total NTFP income.** Other products, such as wild spices and honey, contribute smaller shares but remain integral to household economies.

The reliance on NTFPs varies across wealth categories within the community. **Poor households derive 57.5% of their total income from these products, while medium-income households rely on them for 55.5%.** Rich households extract larger absolute amounts due to greater access to land and resources, but depend on NTFPs for a smaller proportion (35%) of their overall income. This pattern highlights the **critical role forests play in sustaining poorer households**, who are more dependent on these resources for their livelihoods. In monetary terms, **NTFPs contribute 44.7% to total household income in Yayo district, surpassing crop production (34.32%) as the primary source of earnings. The average annual income generated from NTFPs per household is approximately ETB 16,086 (approx. USD 122), with forest coffee alone providing an average of ETB 12,745 (approx. USD 98) annually**. While firewood is primarily used for household consumption rather than cash income, forest coffee serves dual purposes, subsistence use and market sales, making it a cornerstone of rural economic activity.

Source: Asfaw & Etefa, 2017

Table 10: Summary of NTFPs found in different forest types of Ethiopia

Type of forest	Study location	Author(s)	Main NTFPs
Afro-montane Rain Forest	Southwest	Berhanu (2019)	Coffee, honey, spice
Dry Afromontane Forest	Central	Getachew et al. (2018)	Firewood, fodder, honey, construction materials
Afro-montane Rain Forest	Southwestern	Mohamed & Wiersum (2011)	Coffee, honey, spice
Afromontane Rain Forest	Southwest	Adanech & Lema (2017)	Forest coffee, firewood, spice, honey
Dry forest	NW & Southern	Busha et al. (2016)	Firewood, gum & resin, medicinal plants, construction materials
Dry Afromontane Forest	Southeastern	Muktar et al. (2017)	Firewood, wild food, medicinal plants, honey, utensils
Dry Forest	Southeastern	Dagim et al. (2016)	Honey, fuel wood, gums and resins, handcrafts, and construction materials
Dry Forest	Southeastern	Zenebe et al. (2013)	Gum & resin
Dry Forest	Northern	Teshale et al. (2011)	Gum & resin
Afro-montane Rain Forest	Southwest	Alemayehu (2010)	Honey, spice, coffee
Dry Forest	Southeastern	Adefires et al. (2014)	Gum and resins, firewood and charcoal, wood for construction and farm tools, and medicinal plants and forest food, wild honey

Source: Gonfa, 2019, p. 217

Wild coffee

Ethiopia is renowned for exclusively producing Arabica coffee (*Coffea arabica L.*), a species that originated in the southwestern highlands of the country (Urugo et al., 2025). **Ethiopia is one of Africa's five largest coffee-producing countries** (Alemseged & Getaneh, 2013). A **distinctive feature of Ethiopia's coffee industry is the presence of wild Arabica coffee in natural forest ecosystems**, particularly in areas such as the Yayu Coffee Forest Biosphere Reserve (Wiersum et al., 2008; Beyene et al., 2025). **The Ethiopian coffee-based agroforestry system, integrates coffee plants with native shade trees, which supports sustainable land use and biodiversity conservation** while providing significant ecological, socio-economic, and cultural benefits (Urugo et al., 2025).

Arabica coffee, which accounts for 60–70% of global coffee production, is the most widely cultivated coffee species and is considered the most popular beverage worldwide (Melese & Kolech, 2021). The primary centre of origin and genetic diversity for *Coffea arabica* L. is where it occurs naturally in the undergrowth of the Afromontane rainforests between 1,000 and 2,000m above sea level (Githae et. al., 2008). The Arabica coffee grown in Ethiopia is organic, fertilisers, pesticides, and herbicides are not applied, and the coffee is grown wild in the forests (Melese & Kolech, 2021). The percent share of Ethiopian coffee to the world coffee market in four consecutive years has been 4.1, 4.1, 4.4, and 4.3 in 2013, 2014, 2015, and 2016, respectively (CSA, 2017). During the 2018/19 season, approx. 764,863 ha of land was allotted for coffee production and 494,574 tonnes were obtained, with average productivity of 0.64 tonnes/ha (CSA, 2019; MoA, 2019). **Coffee exports reached 248,129 tonnes valued at USD 821.14 million during 2019/20** (Tefera & Bickford, 2020). In addition **Arabica coffee generates approx. 30–35% of Ethiopia's export revenue, with earnings of USD 1.43 billion in the 2023–2024 year alone** (Africa.com, 2024).

The coffee sector in Ethiopia is a cornerstone of the economy, involving over four million smallholder farmers and employing approx. 15% of the population across various stages of the value chain (Jima, 2020; Worku, 2023). Approximately 95% of Ethiopian coffee is produced by smallholder farmers who grow coffee on small plots of less than half a hectare (Urugo et al., 2025). As mentioned above, Ethiopia contributes 4% to global coffee production and leads Africa in coffee output, accounting for 40% of the continent's total (Muhie, 2022; Melese & Kolech , 2021). Exports to key markets, including the European Union (30% of total exports), emphasise the importance of maintaining Ethiopia's competitive edge in international trade (Urugo et al., 2025). In value terms, the earnings from coffee export show an upward trend with some downward interruptions mainly due to a substantial decline in international coffee prices (for example it increased from USD 344.3 million in 2005/2006 to approx. USD 821.14 million in 2019/2020) (Tefera & Bickford, 2020). **Ethiopia's coffee industry remains integral to both the country's economic development and its global trade position. The combination of traditional agroforestry practices, organic production methods, and a strong smallholder farming network continues to reinforce Ethiopia's reputation as a premier producer of high-quality Arabica coffee.**

Honey

Beekeeping has been a long-standing and deeply rooted household activity in rural communities of Ethiopia (Ajabush, 2018). It is as old as the country's history and remains an integral part of Ethiopian livelihoods (Ibid.). Playing a vital role in the rural economy, beekeeping contributes to agricultural productivity while serving as an alternative source of income for farmers (see Text box 12). As a non-timber forest product (NTFP), beekeeping contributes to ecological sustainability by promoting forest conservation and supporting crop pollination (Ajabush, 2018). **Ethiopia's diverse climate and rich flora**

provide an ideal environment for honey production, which is globally recognised for its high quality (Mekonnen et al., 2020).

Ethiopia is Africa's leading honey producer, with a long history of both traditional and modern beekeeping techniques (Mekonnen et al., 2020). Beekeepers in Ethiopia use a combination of traditional, intermediate, and modern hives, which influence honey's productivity and quality (Ibid.). In forested areas, honey is primarily harvested from beehives made of wood, bark, or bamboo, which are hung on tree, (Mekonnen et al., 2020). Additionally, honey is collected from natural sources such as hollow wood, soil, and rocks, or managed bee colonies foraging in forests and cultivated plants (Ibid.).

As of 2018, Ethiopia was among the world's top honey producers, the fourth-largest beeswax producer globally, and the tenth-largest honey producer worldwide with more than one million beekeepers (Gratzer et al., 2021). This production yielded approx. 50,000 tonnes of honey and 5,000 tonnes of beeswax, reinforcing Ethiopia's significance in the global apiculture industry (Ibid.). Honey and beeswax are valuable commodities that contribute to local economies through domestic and international trade. **Ethiopian honey exports have been rising, especially in organic markets, due to its high quality and natural production methods** (Gratzer et al., 2021). Beekeeping plays a crucial role in Ethiopia's economy by providing employment and income generation opportunities (see Text box 13 for information on one specific apiculture project). **The honey value chain encompasses various activities,** including input provision, production, processing, and marketing, supporting thousands of rural households (Filmon, 2023). In the Gedeo area of southern Ethiopia, beekeeping accounts for approximately 15% of total household income (Teklu & Dinku, 2016). In southwestern Ethiopia, households typically own 20–30 beehives, with an average yield of 5–6 kg per hive, amounting to an annual harvest of 100–200 kg of honey (Gonfa, 2019).

The honey sector contributes significantly to Ethiopia's GDP. Beekeepers produce between 53,000 and 58,000 tonnes of honey annually, managing around 6.98 million bee colonies (Bayissa et al., 2024). **The country generates approx. ETB 420 million (approx. USD 3.26 million) annually from honey production** (Tarekegn & Tegegne, 2017). **The sector also supports nearly two million jobs** (Drost & van Wijk, 2011), providing income opportunities for landless farmers, women, and youth. Additionally, beeswax production, estimated at 5,742 tonnes annually, significantly contributes to foreign exchange earnings. Ethiopia ranks as Africa's fourth-largest beeswax exporter, generating around ETB 125 million (approx. USD 955,000) per year (Ibid.).

Beyond its economic contributions, beekeeping plays a crucial role in social and health aspects of Ethiopian communities. **Honey is widely used in traditional medicine** to treat ailments such as colds, stomach discomfort, and wounds (Wolde, 2016). It is also **an important nutritional supplement and holds cultural significance**, particularly in communal activities and local institutions. In some Ethiopian communities, the sharing of honey during harvest seasons strengthens social ties and reinforces traditional institutions (Gonfa, 2019).

Despite its successes, **Ethiopia's beekeeping sector faces significant challenges**. Traditional hives account for 96% of all beehives, while intermediate and modern hives represent only 1% and 3%, respectively (Bayissa et al., 2024). This reliance on traditional methods limits productivity and efficiency in the sector. Addressing this challenge through increased adoption of modern beekeeping techniques, improved market access, and better infrastructure will be essential to maximising the potential of Ethiopia's beekeeping industry.

Ethiopia's beekeeping industry remains a cornerstone of rural livelihoods, contributing to environmental conservation, and social well-being (see Text box 14). With its vast natural resources and traditional expertise in apiculture, Ethiopia has the potential to further expand its honey and beeswax

Text box 12
Beekeeping in Ethiopia

Beekeeping in Ethiopia is a deeply rooted tradition, intertwined with the rural lifestyle for centuries. The country's unique agro-climatic conditions and biodiversity have created an ideal environment for apiculture, **making Ethiopia one of the top honey producers globally and the largest in Africa.** With approx. 10 million honeybee colonies spread across regions such as Oromia, Amhara, and the Southern Nations, Nationalities, and Peoples' Region (SNNPR), beekeeping has become a vital off-farm enterprise for smallholder farmers. This requires minimal land and investment, making it accessible to resource-poor farmers, women, and landless youth.

The economic contributions of bees and their products are significant. Honey is the primary product, highly priced for its flavour, nutritional value, and medicinal properties. **Ethiopia ranks 10th globally in honey production, with an annual output of over 53,000 tonnes.** Beeswax is another major byproduct, used in cosmetics and candle production. Beekeeping plays a crucial role in employment creation along the honey value chain and it offers a sustainable livelihood option that reduces land pressure while diversifying income sources for rural households. **Many farmers earn between 5,000 to ETB 10,000 annually (approx. USD 38 to USD 80 per year) from honey sales alone**. **Nationally, beekeepers generate approximately ETB 360-480 million (approx. USD 2.7 million to USD 3.7 million) each year from honey production**. Despite its potential to drive rural development and foreign currency earnings, challenges such as limited adoption of modern beekeeping techniques and inadequate market access hinder the sector's growth. Addressing these issues through skills development and technology improvement could unlock greater productivity and socio-economic impacts for Ethiopia's apiculture industry.

Source: Dafar, 2018

Text box 13

BEE-LIEVE – Empowering beekeepers

Beekeepers Economic Empowerment through Long-Term Investments in Entrepreneurship and Value chain in Ethiopia (BEE-LIEVE), works with smallholder beekeepers, particularly women and landless youth, to boost honey production and expand market access by improving access to key inputs, finance, and training. The initiative strengthens technical, business, and entrepreneurial skills while fostering public-private partnerships to enhance the honey value chain. The European Union funded the project with the objective to contribute to reducing poverty among poor and vulnerable people in Ethiopia through an inclusive and sustainable honey value chain development. In the first two years, 9,000 beneficiaries were engaged, with 7,752 (3,102 women) trained in modern beekeeping, 8,137 (3,536 women) trained in business skills, and 4,678 (1,865 women) gaining financial access to purchase beehives and bee colonies. As a result, **the average beekeeper's annual income increased from ETB 6,878 to ETB 12,377 (approx. USD 52 to USD 95), and women's involvement in beekeeping grew from 16% to 35%.** Beyond economic benefits, the project contributed to environmental conservation, as beekeeping encourages the conservation of vegetation and planting new bee-forage species. The shift from land-degrading crop production to sustainable apiary systems is improving land rehabilitation efforts in Tigray's rugged terrain. Lastly, job creation for landless youth, women, and returnees is being realised, offering an alternative livelihood in an area where agricultural land is scarce. The BEE-LIEVE project **demonstrates how inclusive, well-supported value chain interventions can transform livelihoods, promote gender equity, and foster environmental sustainability.**

Source: Relief Society of Tigray (REST), 2025

Text box 14

Ethiopia's honey forest: people and wildlife living in harmony

The Gura Ferda Forest in southwest Ethiopia is one of the country's most ecologically valuable landscapes: a vast, 40,000-ha Afromontane forest that remains largely intact. The Forest hosts numerous Ethiopian endemic species of birds, amphibians, and reptiles, alongside black-and-white colobus monkeys (*Colobus guereza*). Despite its immense ecological importance, Gura Ferda is not formally protected, yet it remains safeguarded by local communities, particularly the Indigenous Sheko people, whose traditional beekeeping practices naturally conserve the forest. Hanging hives in the trees for honey collection provides both a sustainable livelihood and an incentive to conserve the ecosystem.

Ecologists highlight the forest's role as a critical biodiversity corridor between Gambella and Omo National Parks and advocate for its recognition as a community conservation area. Such a designation would formalise local stewardship while ensuring long-term protection against threats such as deforestation and coffee plantation expansion. **Gura Ferda stands as a powerful example of how community-led conservation can align livelihoods, culture, and biodiversity keeping both people and wildlife in harmony.**

Source: Ed Holt, 2022

production for both local and international markets.
Enhancing productivity and growing value chains through modern technologies and supportive policies can ensure the long-term sustainability and profitability of the sector.

Baobab

The Baobab tree (*Adansonia digitata*) is a significant multipurpose species in Ethiopia, appreciated for its fruits, leaves, and bark (Alemu, 2021). The pulp of its fruit is rich in vitamin C and other nutrients, making it invaluable for food security and nutrition, leaves are used as fodder for livestock, while the bark is harvested for fibre production (Bayesa & Bushara, 2022). A study in the Tselemt district, reports an average density of 3.15 baobab trees per ha, with the highest concentrations found near river buffers, farmlands, and homesteads (Ibid.). Despite these findings, **precise statistics on the volume of fruit harvested, leaf consumption rates, and bark extraction levels remain scarce.** Sustainable management practices are essential to ensure the Baobab tree's continued benefits. Educational programmes can raise awareness about baobabs' ecological and economic importance, promoting sustainable harvesting and conservation practices (Bayesa & Bushara, 2022; Sidibe & Williams, 2002). Agroforestry, where baobab trees are integrated into agricultural systems, allows for the simultaneous production of crops and the sustainable harvesting of baobab products (Bayesa & Bushara, 2022). Another key practice is community-based conservation, which encourages local communities to protect and manage baobab trees (Alemu, 2021).

Edible wild fruits and nuts

Ethiopia's forests have a variety of wild fruits and nuts, including Christ's thorn (*Ziziphus spina-christ)*, Tamarind (*Tamarindus indica)*, and Sour plum (*Ximenia americana*), which offer essential vitamins and minerals, particularly to food-insecure communities (Tadesse et al., 2025). **These species are often gathered for household consumption or small-scale trade, contributing to nutrition and livelihoods (Ibid.).**
Wild edible fruits are widely recognised as non-timber forest products and play an important role in nutrition, medicine, and income generation for many rural communities (Sardeshpande & Shackleton, 2019). In addition to their direct nutritional contributions, wild fruits are often rich in antioxidants,

vitamins, and minerals, making them highly valuable for populations affected by malnutrition (Bvenura & Sivakumar, 2017). Research highlights that diets incorporating wild edible fruits provide greater nutrient diversity than those relying solely on cultivated crops (Sardeshpande & Shackleton, 2019). This can be especially important during periods of food scarcity, such as drought or crop failure (Bvenura & Sivakumar, 2017; Sardeshpande & Shackleton, 2019).

In Ethiopia, many wild fruits, including tamarind, are also used for medicinal purposes. Tamarind is widely used for its digestive and anti-inflammatory properties, while Christ's thorn is valued for its resilience in arid conditions, making it useful for agroforestry and climate adaptation strategies (Jimoh & Haruna, 2007; Saied et al., 2008). These wild fruit species contribute to biodiversity conservation and provide essential ecosystem services. Integrated into agroforestry systems, they help improve soil fertility, reduce erosion, and support biodiversity by providing habitats for wildlife (Shackleton et al., 2011).

Sustainable harvesting of these wild fruits is critical to maintaining their availability for future generations. **Overharvesting and habitat loss pose significant threats to wild fruits,** and effective conservation strategies are required (Newton et al., 2012). **Community-based forest management and agroforestry have been identified as effective methods to promote the sustainable use of these resources** (Newton et al., 2012; Sardeshpande & Shackleton, 2019). Implementing policies supporting sustainable harvesting and involving local communities in conservation efforts is essential to conserve Ethiopia's wild fruits and ecosystem services.

Spices

Ethiopia cultivates a variety of spices, including korarima (*Aframomum corrorima*), black cumin *(Nigella sativa)*, white cumin *(Cuminum cyminum)*, coriander *(Coriandrum sativum)*, fenugreek (*Trigonella foenum-graecum)*, and ginger (*Zingiber officinale*) (Deribe, 2022). Ethiopia is a homeland for many spices, as a result, the history of spice use is an ancient one, and spices have always been and remain basic food items in the diet of the Ethiopian people (Moloro & Abebe, 2022). **Approximately 244,000 tonnes of spices are produced annually on 222,700 ha of land** (Deribe, 2022). Ethiopian spices are mostly collected and sold by local people (economic data on how much they are sold for was not available) (Moloro & Abebe, 2022). **The spice sector remains underdeveloped in terms of processing and value addition,** limiting its contribution to national exports (ITC, 2020).

Despite its potential, Ethiopia's spice export trade remains below 1% of total export earnings (Yimer, 2010). The major spice-producing regions are Amhara, Oromia, Southern Nation, Nationalities, and Peoples' Region (SNNPR), and Gambella, with key crops such as chilli pepper, which alone accounts for 234,000 tonnes annually (Herms, 2015). The spice sector in Ethiopia still relies on traditional knowledge passed down through generations (Deribe, 2022). Smallholder farmers rarely use farming tools or inputs such as pesticides, fertilisers and improved seeds. Moreover, there is a lack of access to electricity and irrigation (Ibid.). The production system is mostly based on rain-fed agriculture at the same time, farmers' planning is often inadequate and they do not allocate suitable land for the cultivation of spices (Deribe, 2022). **Ethiopia's spice industry faces limitations** due to poor agronomic practices, lack of quality planting materials, and post-harvest losses (Tesfa et al., 2017).

Gums and resins

Gums and resins are among Ethiopia's most valuable NTFPs, particularly frankincense and myrrh, which are extracted from various Boswellia and Commiphora species (Lemenih & Kassa, 2011). These products have significant economic value in local and international markets, used in pharmaceuticals, cosmetics, and religious ceremonies. The Centre for International Forestry Research (CIFOR) estimated that **the potential annual production of gums and resins in Ethiopia could be between 35,000 and 114,000 tonnes, the wide range resulting from a lack of reliable data on actual productivity levels** (GIZ, 2020). However, **unsustainable harvesting and deforestation threaten their long-term availability** (Lemenih & Kassa, 2011).

Frankincense

Frankincense, a resin obtained from trees of the *Boswellia* genus, is one of Ethiopia's most economically and culturally significant non-timber forest products (NTFPs). The primary source of frankincense in Ethiopia is *Boswellia papyrifera*, a deciduous tree species found in the dry lowland woodlands of northern and northwestern Ethiopia, particularly in the Tigray, Amhara, and Benishangul-Gumuz regions (Lemenih & Kassa, 2014). These trees thrive in arid and semi-arid conditions, where conventional agriculture is often not feasible, making frankincense production an essential livelihood activity in these marginalised areas.

The uses of frankincense in Ethiopia are both traditional and commercial. Locally, the resin is widely used in Ethiopian Orthodox Christian religious rituals, where it is burned as incense during church services and ceremonies, believed to purify the air and create a sacred atmosphere (Gebrehiwot et al., 2003). In traditional medicine, frankincense is used to treat various ailments, including respiratory conditions, inflammation, and infections. Internationally, it is a key ingredient in the cosmetic, pharmaceutical, and aromatherapy industries, where it is valued for its anti-inflammatory and aromatic properties (Mengistu, 2020). The demand for natural essential oils and organic products has further increased the global appeal of frankincense.

The harvesting of resins sustains the livelihoods of rural communities, especially in regions such as Somali, Afar, and Oromia, where the *Boswellia* and *Commiphora* trees are primarily found (Lemenih & Kassa, 2011). According to the International Trade Centre (ITC), **Ethiopia is one of the largest producers of frankincense globally,** exporting approximately 2,000 tonnes annually, contributing millions of dollars to the Ethiopian economy (ITC, 2020). **In 2019, Ethiopia earned approx. USD 10 million from frankincense exports, with increasing demand in international markets such as the Middle East, Asia, and Europe** (ITC, 2020). It is estimated that **some households derive up to 50% of their annual income from frankincense collection and trade** (Lemenih & Kassa, 2014). In areas such as Metema and Kafta-Humera, frankincense is one of the few viable economic activities, thus playing a crucial role in poverty alleviation and food security (Ibid.).

The local economic value is substantial, as communities engaged in gum and resin harvesting rely heavily on these products for their income (GIZ, 2020). Frankincense and myrrh are often harvested in small-scale operations, and the income generated supports not only the collectors but also local traders, processors, and transporters (Ibid.). This decentralised nature

of the industry helps stimulate rural economies by creating jobs and facilitating the local trade of these goods (Kassa & Lemenih, 2011). Data on the values related to myrrh were not found. Text box 15 provides an example of the contribution of frankincense to a local economy.

Socio-economically, frankincense is not only a major export commodity supporting livelihoods and earning valuable foreign currency but also has diverse traditional uses in religious ceremonies and folk medicine (Worku & Bantihun, 2018). The government, in collaboration with international donors, has been working to implement agroforestry practices in the dryland areas, integrating *Boswellia* trees into agricultural landscapes to reduce pressure on natural forests (Ibid.).

In conclusion, **frankincense is a critical non-timber forest product in Ethiopia, valued for its cultural, medicinal, and commercial significance. It provides livelihoods for thousands of rural households, supports Ethiopia's export economy, and holds potential for greater economic gains through sustainable management and value addition.** However, realising this potential requires stronger investment in conservation, community empowerment, and the development of local value chains. **Ensuring the sustainability of *Boswellia* populations through improved harvesting techniques and land management is essential to safeguarding the future of frankincense in Ethiopia** (Worku & Bantihun, 2018).

Mushrooms

Wild mushrooms, such as *Termitomyces* and *Agaricus* species, are gathered from Ethiopia's forests for their high nutritional value and growing commercial potential (Abate, 2014). **Wild mushrooms play an important role in local diets and in generating income for rural communities** (Abate, 2014; Muleta et al., 2013). Mushroom farming is growing in the country, creating an additional source of income and encouraging sustainable land use practices (Yehuala, 2008; Abate, 2014).

Ethnomycological research reveals that despite their benefits, wild mushrooms remain one of the most neglected NTFPs in Ethiopia due to limited taxonomic studies and documentation (Dejene et al., 2017). Local communities often refer to wild edible mushrooms by common names such as *Enguday,* which complicates scientific identification (Tuno, 2001; Semwal et al., 2014). **As awareness increases and further research is conducted, improved cultivation and sustainable harvesting practices are expected to enhance these valuable forest resources' economic and ecological benefits.**

Furthermore, certain wild mushrooms, such as Lacquered bracelet (*Ganoderma lucidum)* and Oyster mushroom (*Pleurotus ostreatus)*, have been recognised for their medicinal properties, including anti-inflammatory, antioxidant, and immune-boosting effects (Ferreira et al., 2010). Traditional healers in Ethiopia use various mushroom species to treat ailments such as infections and digestive disorders, though formal pharmacological studies remain limited (Gizaw, 2010). Conservation efforts are crucial to ensure these fungi remain available for future generations, especially as habitat destruction and overharvesting pose increasing threats to their natural populations (Sefidi & Etemad, 2015). Strengthening local knowledge systems and integrating scientific research with indigenous practices could pave the way for a more sustainable and economically viable mushroom sector.

Text box 15

The contribution of frankincense to the agro-pastoral household economy and its potential for commercialisation - A case from Borana, southern Ethiopia

Frankincense (also called olibanum) is a widely traded aromatic, congealed, resinous exudate derived from species of the genus Boswellia. There are three types of frankincense found in Ethiopia: the Tigray type, the Ogaden type and the Borana type. In Ethiopia, frankincense is used as a fragrance in the home and many religious and social rituals, such as the coffee ceremonies. The product is also used as a raw material in the developed world's food, adhesives, cosmetics, paints, and pharmaceutical industries.

The annual income generated from the harvest and sale of frankincense was estimated at USD 60 per adult equivalent unit (AEU), which accounted for 35% of the total household annual cash income. This income constitutes the second largest share of household cash income after livestock, which was 60%. Notably, poorer households, which represent 44% of the sample, rely more heavily on frankincense income, with it accounting for 49.8% of their total income, nearly equivalent to the combined contributions from livestock and non-farm income, which accounted for 50.2%. Additionally, it was noted that **"the income from frankincense is almost as important as livestock production and non-farm income combined among the poor households".** Overall, it is evident that frankincense functions as a supplementary source of income for herders and can be pivotal for their economic stability.

Source: Berhanu et al., 2021

Medicinal plants

Ethiopia, with its diverse climatic and topographic conditions, boasts a rich biodiversity, particularly in plant species. The country is home to between 6,500 and 7,000 plant species, of which 12–19% are endemic (Admasu & Yohannes, 2019). Among these are numerous medicinal plants, a vital part of the healthcare system, especially in rural areas where modern medical facilities are limited (Ibid.). **It is reported that approx. 800 species of medicinal plants grow in Ethiopia and are used to treat about 300 different medical conditions** (Hussein, 2014). **Traditional medicine remains a primary form of healthcare, with approximately 80% of the population relying on it,** particularly in rural communities (Mekonen, 2019). Moreover, 90% of the livestock population is also treated with medicinal plants (Ibid.).

The collection and use of medicinal plants, both for humans and livestock, are common practices in rural and forested regions of Ethiopia, where access to modern medicine is often hindered by cost and lack of infrastructure (Gonfa, 2019). Most of the Ethiopian forest is used in traditional medicine, with rural communities preferring plant-based treatments due to their perceived effectiveness and cost-efficiency (Gonfa, 2019). Despite increasing access to modern healthcare options, the cultural preference for herbal remedies continues, demonstrating the deep-rooted reliance on indigenous knowledge and practices.

Research by Gonfa (2019) emphasises the importance of forests as rich sources of medicinal plant parts such as bark, leaves, and roots, which are commonly used to treat various ailments. It is important to note that various authors report different figures of plant species identified for medicinal purposes e.g Feyera et al. (2013) identified approx. 50 plant species with medicinal applications, while Endalew (2007) documented 89 plant species used for medicinal purposes.

Bamboo

Ethiopia has 67% of Africa's bamboo resources, which is approx. 7% of the world's total (Kassahun, 2002). It has approx. one million ha of highland bamboo (*Oldeania alpina*) (Luso Consult, 1997; Kassahun, 2002). **Highland bamboo accounts for 150,000 ha out of which 130,000 ha consist of natural stands and 20,000 ha are man-made plantations cultivated by farmers** (Melese, 2016). Lowland bamboo (*Oxytenanthera abyssinica*) is dominant with coverage of approx. 700,000 to-850,000 ha (Ibid.). Bamboo provides food, fodder, furniture and building materials (scaffoldings), industrial inputs, medicinal plants and fuel (Boissière et al., 2020). Data on the economic value of bamboo was not found.

Khat

Khat (*Catha edulis*), a stimulant plant belonging to the family Celastraceae, was first described by the naturalist Peter Forsskål (Grown, 2024). **It is a major cash crop in Ethiopia and plays a significant role in the country's broader bioeconomy, particularly as an agricultural commodity that supports millions of livelihoods** (Ibid.). Although not a traditional wildlife product, khat represents an important interface between nature-based livelihoods, cultural practices, and economic development in Ethiopia.

Economically, khat is one of Ethiopia's most valuable export commodities. According to the 2003/04 Ethiopian Economic Survey, khat export earnings rose from ETB 272.4 million (approx. USD 38 million) in 1997/98 to ETB 758.9 (approx. USD 89 million) in 2003/04 (Belwal & Teshome, 2011). The Commercial Bank of Ethiopia's 2012/13–2014/15 annual export report indicated that khat contributed USD 272.4 million, accounting for 9% of the country's total export earnings during the review period (National Bank of Ethiopia, 2015). **By 2021, khat had become Ethiopia's fourth most exported commodity, representing 11.1% of total domestic exports and generating USD 402.5 million** (Wabe, 2012).

The economic importance of khat extends beyond national statistics to the household level. **In a survey of Ethiopian farmers, over half of their total income was attributed to khat cultivation** (Hussein et al., 2023). In Haramaya District, nearly 95.3% of households were found to grow khat, with one-fourth of respondents reporting that they spent no money on purchasing khat because they cultivated it themselves (Wood et al., 2024). In contrast, in regions where khat is not widely cultivated, a significant portion of household income is spent on purchasing it. For example, a survey of 359 Ethiopians living west of Addis Ababa found that, on average, a person spent ETB 790 (approx. USD 5) per month on khat, an amount comparable to a low-paying government salary (Wondemagegn et al., 2017).

Khat consumption and cultivation are deeply embedded in Ethiopia's socio-cultural fabric, particularly in the eastern regions such as Haramaya, where the plant plays a central role in social gatherings, religious ceremonies, and community interactions (Wood et al., 2024). Its use is often associated with facilitating conversation, focus, and social cohesion. Despite its cultural significance, khat consumption raises social and health concerns, as habitual chewers may experience dependency, irritability, and family disintegration (Anderson et al., 2020; Anderson & Carrier, 2011). Although many users acknowledge their reliance on khat, the stigma surrounding addiction often prevents them from seeking help (Mihretu et al., 2020).

From a policy and governance perspective, the khat economy in Ethiopia is largely decentralised and informal, characterised by small-scale traders and producers with limited state regulation. The trade system is marked by autonomy and local-level organisation, with little standardisation or oversight (Cochrane & O'Regan, 2016). Despite the lack of formal governance structures, the sector has expanded dramatically. Over the past two decades, the land area dedicated to khat cultivation has increased with hundreds of millions of kgs produced annually (Wabe, 2011).

While khat is not a wildlife-based product, its cultivation exemplifies how natural resource-based economies can provide significant socio-economic benefits while presenting challenges for sustainability and social well-being. The expansion of khat farming raises important questions about land use competition, particularly as agricultural land is diverted from food crops to khat production. **Integrating khat within Ethiopia's broader wildlife and bioeconomy frameworks requires balancing its economic contributions with environmental sustainability, public health, and social development objectives.**

Teff

Teff (*Eragrostis tef*) is an ancient cereal crop indigenous to Ethiopia's northern highlands, where it was first domesticated (Fikadu et al., 2019). While teff remains relatively underutilised globally compared to major cereals such as maize, wheat, sorghum, and barley, it holds immense cultural and nutritional significance in Ethiopia, where it is the primary ingredient in *injera*, a traditional fermented flatbread central to the national diet (Demeke & Marcantonio, 2013; Fikadu et al., 2019). Outside

Ethiopia, particularly in countries such as Australia, South Africa, and the United States, teff is primarily cultivated as a forage crop for animal feed (Kaleab, 2018).

Annually grown on about 2.8 million ha in Ethiopia, teff possesses unique agronomic and nutritional qualities (Kaleab, 2018). It is resilient to harsh environmental conditions, resistant to both biotic and abiotic stresses, and its seeds are naturally impervious to storage pests (Abraham, 2015). Importantly, teff is gluten-free, making it a safe and nutritious option for people with celiac disease or gluten intolerance, as well as for diabetics (Fikadu et al., 2019).

Teff plays a vital role in Ethiopia's agriculture, food security, and trade (see Text box 16). Millions of Ethiopian farmers depend on it for their livelihood and sustenance. Globally, the demand for teff is rising rapidly due to its high nutritional value and health benefits, leading to its recognition as a "superfood" on par with quinoa, which has seen similar international success from countries such as Peru and Bolivia (Secorun, 2016). This growing demand has prompted the Ethiopian government to reconsider its previous ban on teff exports to leverage its export potential (Fikadu et al., 2019). **In 2015, Ethiopia exported approximately USD 10 million worth of *injera*,** primarily to North America, the Middle East, and Europe with North America alone accounting for USD 2.5 million, largely due to the Ethiopian diaspora (Ibid.). As global interest in nutritious, gluten-free products continues to grow, teff and teff-based products are poised to become increasingly prominent in international markets.

Enset

Enset (*Ensete ventricosum*), often referred to as the "tree against hunger," is a large, thick, single-stemmed perennial herbaceous plant that closely resembles the banana in morphology (Ministry of Agriculture, 2024). It is native to Ethiopia, where it was domesticated over 10,000 years ago (Jacobsen et al., 2018). Today, **Enset remains a cornerstone of Ethiopian agriculture and food security, with approx. 20% of the country's population relying on it as a primary food source** (Ministry of Agriculture, 2024).

Beyond its role as a staple crop, Enset provides significant environmental benefits. It enhances soil nutrient balance (Elias et al., 1998), supports high biodiversity (Tesfaye, 2008), and contributes to environmental conservation through soil erosion control and soil fertility enhancement (Woyesa & Kumar, 2021). The plant's ability to remain green throughout the year also aids in maintaining landscape aesthetics and ecological stability (Samberg et al., 2010).

Enset holds substantial economic and cultural value for rural communities of Southern and Southwestern Ethiopia (see Text box 17). Its various parts are utilised for multiple purposes including roof thatching, animal fodder, traditional medicine, rope, and string production (Soto-Pinto et al., 2010). Agriculturally, it is a high-yield crop, producing the greatest energy output per unit area of any Ethiopian food plant (Ibid.). Moreover, Enset is commonly intercropped with coffee, potatoes, and other food crops, providing shade, moisture, and nutrients that improve the productivity of surrounding plants (Abebe, 2013; Geleta, 2022).

As a resilient and multifunctional crop, Enset plays a crucial role in Ethiopia's bioeconomy, contributing simultaneously to food security, ecosystem services, and climate resilience. Its integration into traditional farming systems exemplifies a sustainable model where biodiversity conservation, cultural heritage, and livelihood enhancement are closely interlinked.

Bioprospecting

Ethiopia is internationally recognised for its rich biodiversity and status as a centre of origin and diversity for several cultivated plant species. As one of the eight Vavilov Centres of genetic diversity, **the country offers significant opportunities for bioprospecting** (Woldetensay et al., 2014; EBI, 2023). Bioprospecting, or biodiversity prospecting, refers to the systematic search for genetic and biochemical resources within biodiversity, including traditional knowledge, to discover commercially valuable applications in pharmaceuticals, agriculture, cosmetics, and food (Seifu et al., 2018).

Text box 16

Teff as a natural asset: Rethinking Ethiopia's agricultural biodiversity in the wildlife economy

Teff, a resilient ancient grain native to Ethiopia and Eritrea, exemplifies how indigenous biodiversity can fuel a sustainable and inclusive economy. As global demand for gluten-free and nutrient-rich foods rises, teff has gained popularity across Europe and the US, demanding premium prices. **Ethiopia remains the world's leading producer accounting for over 90% of global supply and teff serves as a daily staple for approx. 50 million people.**

Despite its ecological and economic significance, **Ethiopia's teff sector faces numerous challenges:** low productivity, limited mechanisation, poor infrastructure, and fragmented land holdings. Traditional farming methods, inadequate research into improved seed varieties, and minimal investment in processing and branding further constrain growth. Post-harvest losses are significant, and the absence of a grading system limits value capture in both domestic and export markets.

This case illustrates the untapped potential of natural products to drive rural development, food security, and economic resilience. With supportive government policies, investment in modern farming practices, and liberalisation of the value chain, teff could become a flagship example of how Africa's indigenous resources can underpin sustainable economies rooted in biodiversity. **Integrating indigenous crops such as teff into the wildlife economy narrative, Africa can demonstrate the value of protecting and investing in nature not only for conservation but also for equitable economic growth.**

Text box 17

Enset as a source of income and livelihoods

Enset plays a vital role not only as a food security crop but also as a significant source of income for rural households in Ethiopia. In the Hula District, Enset cultivation supports a thriving local economy through the sale of suckers, food products, and fibres. The area is renowned as the primary source of Enset suckers for other cultivating regions due to its high propagation potential and affordable prices. A three-year-old decapitated mother corm can produce 30–50 mature suckers within a year and a half, creating opportunities for farmers to sell surplus suckers to generate income. In Hagereselam town, where some large-scale farmers propagate Enset for commercial purposes, a single sucker can sell for up to ETB 5 (approx. USD 0.032), though prices fluctuate based on seasonal demand and availability.

Beyond sucker sales, processed Enset food products, Kocho (fermented starch) and Bulla (dehydrated starch) constitute major income sources for farming households. Average yields per mature plant are estimated at 30 kg of Kocho and 5 kg of Bulla, selling locally for approx. 5 ETB/kg (approx. USD 0.032) and ETB 15 (approx. USD 1)/kg, respectively. At optimal production, farmers can earn up to ETB 130,000 (approx. USD 843) from Kocho and ETB 390,000 (approx. USD 2,500) from Bulla per ha per year (Tsegaye & Struck, 2002).

Additionally, the fibres extracted from the pseudostem are an important by-product, widely used in rope, sacks, and construction materials. It is estimated that approx. 600 tonnes of Enset fibre are supplied annually to factories for industrial use. The sale of surplus planting materials, food products, and fibre thus provides diversified and sustainable livelihood opportunities, particularly for smallholder farmers in Enset-growing regions such as Hula and Wolaita (Olango et al., 2014). **Enset's economic versatility ranging from agricultural propagation to food processing and fibre production demonstrates its crucial contribution to rural resilience, household income, and Ethiopia's bioeconomy.**

Source: Egziabher et al., 2020

Despite its biodiversity wealth, the historical context of bioprospecting in Ethiopia mirrors that of many developing countries, where foreign entities have accessed biological resources and traditional knowledge without appropriate benefit-sharing or local compensation (Mekonnen, 2020). This practice often leads to the exploitation of indigenous resources while sidelining the communities that have conserved them (Gashaw, 2018).

Ethiopia established legal and institutional frameworks aligned with international standards to prevent such exploitation and promote equitable benefit sharing. The Ethiopian Biodiversity Institute (EBI), through its Genetic Resources Access and Benefit Sharing Directorate, is the designated National Competent Authority responsible for overseeing the implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation (ABS) (EBI, 2022). The Protocol emphasises the rights of Indigenous and local communities to share in the benefits derived from the use of their traditional knowledge and biodiversity (Lachenmeier & Montagnon, 2024).

Ethiopia enforces Proclamation No. 482/2006 and Regulation No. 169/2009, which provide a legal framework for access to genetic resources, community knowledge, benefit-sharing mechanisms, and community rights (Agajie, 2021). These laws clarify ownership rights, conditions for resource use, and responsibilities of users and providers. They are instrumental in ensuring that any utilisation of Ethiopian genetic resources is conducted fairly, transparently, and sustainably (EBI, 2022).

Bioprospecting in Ethiopia encompasses a diverse range of commercial applications. Many Ethiopian plant species are rich in bioactive compounds that are promising for industries such as biotechnology, pharmaceuticals, and cosmetics (Woldetensay et al., 2014). For example, *Dioscorea* species, traditionally used in Ethiopian medicine, are rich in steroidal saponins, which are valuable in producing pharmaceutical and botanical supplements (Seifu et al., 2018). Despite their known medicinal value, these species remain underutilised in commercial applications (Ibid.).

Ocimum americanum, a basil species found in the Amhara region, serves as another example of valuable bioprospecting potential. Approximately 32.67% of local community members use it in traditional medicine for ailments such as headaches, depression, and stomach disorders, while also employing it in spiritual healing practices (Adam, 2020). In the culinary domain, it is a key ingredient in *Nitir qibe* (spiced butter), acting as a natural preservative and aromatic agent. The plant's essential oils contain bioactive compounds such as linalool and camphor, which have known value in food preservation, cosmetics, and pharmaceuticals (Betsiha & Belay, 2024).

Desert date (*Balanites aegyptiaca*), locally known as *Bedeno*. Various parts of the plant, including fruit, leaves, bark, and roots, are traditionally used to treat jaundice, diabetes, skin infections, and gastrointestinal problems (Seifu et al., 2018). Its seed oil, rich in diosgenin, is widely used in the pharmaceutical industry to produce steroid hormones, contraceptives, and corticoids (Fregon & Shakak, 2016). Additionally, the oil's chemical properties make it a candidate for biodiesel production, thus aligning with green energy initiatives (Jauro & Adams, 2011).

Hibiscus sabdariffa, also known as Roselle, is cultivated for its calyces, which are rich in organic acids, minerals, and anthocyanins. It is traditionally used to treat colds, constipation, and boost immunity (Abdo, B.M., 2022). Its calyces are consumed as beverages and condiments, and the plant exhibits antimicrobial and antioxidant properties. Studies show that Hibiscus oil inhibits bacteria such as *Bacillus anthracis* and *Staphylococcus albus*, making it valuable for use in natural health products (Singh et al., 2017; Misganaw, 2019).

Beyond plants, Ethiopia's microbial diversity also offers bioprospecting opportunities. ***Fusarium venenatum,*** a filamentous fungus, is known for its role in producing mycoprotein, particularly in plant-based meat alternatives such as Quorn (Lee et. al., 2024). The fungus contains up to 45% protein by dry weight and is ideal for use in high-protein diets and sustainable food production. It also has potential applications in bioremediation, helping degrade agricultural soil pollutants (Huling, 2023). **Ethiopia's ABS framework encourages ethical exploration of such microbial resources, allowing for environmental sustainability and technological innovation** (Lee et al., 2024).

In conclusion, **Ethiopia's vast natural resources and traditional knowledge and regulatory structures provide a strong foundation for sustainable and equitable bioprospecting.** The country's commitment to the Nagoya Protocol and its national Access and Benefit Sharing (ABS) laws creates an environment for researchers and industries to responsibly explore genetic resources. Continued investment in research, local capacity-building, and community partnerships will be essential to ensure that Ethiopia's bioprospecting efforts bring meaningful conservation, economic development, and community well-being benefits.

Carbon market

Source: Eastern Africa Alliance On Carbon Markets And Climate Finance, undated

Ethiopia submitted its updated Nationally Determined Contribution (NDC) on the 23rd July 2021, with the updated NDC committing to reduce emissions by 68.8% (-277.7 Mt CO_2eq) compared to BAU projections by 2030. Full NDC implementation requires USD 316 billion for the next 10 years and the mitigation interventions identified in the updated NDC require USD 275.5 billion and adaptation actions require USD 40.5 billion. Ethiopia is committed to financing 20% of the total required, whilst 80% will be conditional on receiving international support, including from carbon markets and other sources of finance. Improved cook stoves have the largest mitigation potential in the NDC with the aim to reduce over 50 million tCO_2e annually by 2030.

In total over **2 million carbon credits have been issued in Ethiopia** from both the Clean Development Mechanism (CDM) and Voluntary Carbon Market (VCM) standards. **Ethiopia hosts two CDM projects and six Programme of Activities (PoAs)** with four activities on improved cook stoves and one activity each for Biomass energy and solar lamps respectively.

The country has 35 registered VCM activities that have issued over 10 million emission reduction units, with the forestry sector having the highest issuances with over 9.1 million credits issued under Voluntary Carbon Standards (VCS). Under VCS, there is one registered project - Bale Mountains Eco-region REDD+ project - with 9.1 million Verified Carbon Units (VCUs) issued (see Text box 18). Table 12 illustrates the REDD projects listed on the REDD project database.

In terms of emissions, Ethiopia, despite being negligible in global terms (0.5%), emissions in the country from the economic sectors have grown between the base year of 1994 and the most recent inventory year of 2018 (Federal Democratic Republic of Ethiopia, 2022). Rising emissions were as a result of the country's economic expansion, with total national emissions in 1994 being 108,333 Gg of CO_2e and in 2018 they were 368,835 Gg of CO_2e: an increase of approx. 240% (Federal Democratic Republic of Ethiopia, 2022). The Agriculture, Forestry and Other Land Uses (AFOLU) sector is responsible for a large amount of these emissions, followed by energy (7%), with the waste sector and Industrial Processes and Product Use (IPPU) contributing 1.26%, and 1.01%, respectively (Federal Democratic Republic of Ethiopia, 2022). From 60,774.2 Gg CO_2e in 1994 to 108,422 Gg CO_2e in 2018, the removal has increased by 79%, with interventions on the land subsector by the government such as afforestation, reforestation, and forest restoration being responsible for the removal of Greenhouse Gases (GHG) (Federal Democratic Republic of Ethiopia, 2022).
Given the extensive land degradation in the country, Ethiopia has the opportunity to restore degraded land and to reforest and in so doing, if properly managed, to participate further in the carbon market, benefitting both conservation and people and restoring the wildlife asset base to allow for a growing wildlife economy.

Ethiopia's efforts to strengthen climate resilience and sustainable land management are demonstrated across a range of initiatives, including community-based restoration, protected-area carbon valuation, and results-based forest programmes. The Humbo Assisted Natural Regeneration Project (Text box 19) showcases the potential of community-led restoration, having regenerated indigenous vegetation, improved livelihoods, and generated carbon revenues under both the CDM and Gold Standard. Complementing this, recent assessments of four major national parks (Text box 20) highlight the substantial carbon stocks held in woody biomass and soils, **underscoring the critical role of protected areas in climate mitigation and nature-based investment.** At a larger scale, the World Bank's ISFL-supported Oromia Forested Landscape Programme (Text box 21) illustrates how performance-based finance can incentivise reduced deforestation, enhance carbon sequestration, and strengthen participatory forest management across millions of hectares. Together, these interventions demonstrate **a holistic landscape approach that integrates community stewardship, protected-area conservation, and carbon-finance mechanisms to support Ethiopia's climate and development ambitions.**

Text box 18

The Bale Mountains eco-region REDD+ project successes, challenges, and lessons learned

The Bale Mountains Eco-region REDD+ Project, implemented by Farm Africa in collaboration with SOS Sahel Ethiopia and the Oromia Forest and Wildlife Enterprise (OFWE), stands as one of the most significant efforts to integrate community-based forest management with carbon finance. Using a Participatory Forest Management (PFM) approach, **the project has successfully demonstrated how conservation can generate livelihood benefits while enhancing ecosystem resilience.**

Through the establishment of 64 community-based organisations (CBOs), local communities have actively participated in forest management, resulting in a 62% reduction in deforestation and the avoidance of 5.5 million tonnes of CO_2 emissions (Lemenih & Biot, 2017). **These emission reductions were verified and sold under the Verified Carbon Standard (VCS), with communities receiving ETB 1.7 million (approx. USD 42,500)** in carbon payments. The proceeds were used to purchase two grain mills and fund the construction of an animal health clinic, directly improving local livelihoods and services.

The benefit-sharing mechanism was based on a 60:40 ratio between communities and OFWE, with distribution among CBOs determined by agreed criteria:

- Efforts to prevent deforestation (50%)
- Forest area maintained (20%)
- Membership and gender participation (18%)
- Organisational capacity and leadership (12%)

While the project has been successful in improving forest protection, community cohesion, and local infrastructure, several challenges emerged. Delays in carbon payments, limited understanding of carbon finance processes, and unclear benefit-sharing communication sometimes led to reduced motivation, mistrust, and occasional illegal forest activities. Additionally, the lengthy bureaucratic processes and limited logistical capacity of local government offices hindered smooth implementation.

Lessons learned highlight the importance of transparent benefit-sharing, capacity building, and timely payment mechanisms to sustain community engagement. Strengthening local institutions, ensuring inclusive decision-making, and maintaining continuous dialogue between communities and implementing partners are essential for the long-term success and scalability of similar landscape finance initiatives in Ethiopia and beyond.

Source: Hagazi et al., 2021

Text box 19

Humbo Ethiopia Assisted Natural Regeneration Project

The Humbo Ethiopia Assisted Natural Regeneration Project has engaged with farmers in seven community cooperatives in order to improve their land management by assisting the natural regeneration of indigenous, locally adapted species. As part of the project, farmers agreed to close off defined areas to reduce pressure from wood harvesting and grazing on the vegetation, and rather pruning existing trees and shrubs for sustainable wood fuel collection.

The project was the **first African Clean Development Mechanism (CDM) forestry project** and was initially supported by the World Bank's BioCarbon Fund. It has restored 2,700 hectares of degraded soil and has boosted crop yields. Under the CDM, the project had 255,000 CERs issued before de-registration in May 2020, as CDM forest credits were found to not be appealing to market participants. The project was, however, re-registered under Gold Standard with 104,067 VERs issued to date.

Source: Eastern Africa Alliance On Carbon Markets And Climate Finance, undated

Table 11: Projects in Ethiopia listed on the REDD project database

Project name	Key stakeholders	Size	Carbon pools included	Expected total carbon credits (tCO_2eq)/duration (years)	Quantity of credits sold (in tCO_2)	Payments to communities	Source
NTFP - PFM Project, South-West Ethiopia	Centre for Sustainable and Resilient Communities, Business School, University of Huddersfiled; Ethio-Wetlands and Natural Resource Association (ENWRA); Sustainable Livelihood Action (SLA)	107,086 Ha	No data	132,058 Crediting period: No data	40,238	No data	Available at https://www.reddprojectsdatabase.org/387-ntfp-pfm-project-south-west-ethiopia/ [Accessed 15th January 2025]
Ecosystem restoration and valorisation by associations of landless farmers in the Tembien Highlands (North Ethiopia)	EthioTrees	541	Above ground biomass; soil organic carbon	166,110 Crediting period: 2016-2036	43,070	Conditional payments are indirectly linked to exclosure management performance, as the income from the sales of the certificates from any particular exclosure depends on the performance and will be allocated for investment in or near that exclosure. It has been agreed that all income will be used fully for investments in social or environmental projects that should benefit the local community.	Available at https://www.reddprojectsdatabase.org/445-ecosystem-restoration-and-valorisation-by-associations-of-landless-farmers-in-the-tembien-highlands-north-ethiopia/ [Accessed 15th January 2025]
Humbo Ethiopia Assisted Natural Regeneration Project	World Vision Australia; Ethiopian Agricultural Rural Development and Forestry Coordination Office (AEDFCO), plus numerous other partners	2,278	Above ground biomass; below ground biomass	863,183 Crediting period:2006-2036	40,154 + 40,588	*Direct cash:* They also indicated that the benefits from the project should be spent on community priority development areas amongst which, water, both for drinking and irrigation, was the most suggested priority area by most kebeles. *Employment:* Creating employment: The proposed A/R CDM project activity will create approximately 9,000 person-days of temporary employment in planting, weeding, and harvesting and resin collection activities.	Available at https://www.reddprojectsdatabase.org/347-humbo-ethiopia-assisted-natural-regeneration-project/ [Accessed 15th January 2025]

Text box 20

Carbon values in four national parks

Carbon storage within Ethiopia's protected areas represents a significant component of the country's natural capital and climate mitigation potential. Recent assessments of four major national parks, Borena-Sayint Worehimeno, Simien Mountains, Bale Mountains, and Chebera Churchura, highlight the vast carbon values held in both live woody biomass and soil. **These findings demonstrate the critical role that national parks play in sequestering and storing carbon, thereby contributing to global efforts to combat climate change while supporting ecosystem stability and resilience.**

Borena-Sayint Worehimeno National Park (BSWNP)
Current total carbon stocks were estimated to be in the order of 205,000 t C in live woody biomass and 5.6 million t C in soils to a depth of 100 cm with a stock value of ETB 665 million (approx. USD 4.8 million) for biomass carbon and ETB 18 billion (approx. USD 130.1 million) for soil carbon. For biomass carbon, this translates to ETB 8.8 million (approx. USD 63,834,236) per year when spread evenly over 100 years.

Chebera Chuntains National Park (CCNP)
Current total carbon stocks values were estimated to be in the order of ETB 2.35 billion (approx. USD 16.9 million) for biomass carbon and ETB 64 billion (approx. USD 463 million) for soil carbon. For biomass carbon, this translates to ETB 23.5 million (approx. USD 169,843) per year when spread evenly over 100 years.

Bale Mountains National Park (BMNP)
Current total carbon stocks values were estimated to be in the order of ETB 53.4 billion (approx. USD 386 million) for biomass carbon and ETB 315 billion (approx. USD 2.3 billion) for soil carbon. For biomass carbon, this translates to ETB 534 million (approx. USD 3.9 million) per year when spread evenly over 100 years.

Chebera Churchura National Park (CCNP)
Current total carbon stocks were estimated to be in the order of 5.47 million t C in live woody biomass and 23.90 million t C in soils equating to stock values of ETB 17.77 billion (approx. USD 129 million) for biomass carbon and ETB 77 billion (approx. USD 552.2 million) for soil carbon. For biomass carbon, this translates to ETB 230 million (approx. USD 1.66 million) per year when spread evenly over 100 years.

The valuation of carbon stocks across these national parks underscores the immense economic and ecological importance of Ethiopia's protected areas. With total carbon values reaching into the billions of ETB, these ecosystems not only provide climate regulation services but also present potential opportunities for carbon financing and nature-based investments. Strengthening conservation and sustainable management within these landscapes is therefore essential to safeguard their carbon reservoirs and enhance the country's contribution to climate mitigation and sustainable development.

Source: Ashenafi et al., 2020


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Text box 21

World Bank's BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) in Ethiopia

In 2023, Ethiopia signed a landmark agreement with the World Bank's BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) that rewards community efforts to reduce carbon emissions by tackling deforestation and land and forest degradation.

The Emission Reductions Purchase Agreement (ERPA) unlocks up to USD 40 million that will help communities, government, and stakeholders to reduce carbon emissions and increase carbon sequestration through forest preservation and other environment-friendly land uses. This ERPA marks the first of its kind for ISFL, which will reward efforts to reduce around four million metric tonnes of CO_2e emissions through to 2030 under Ethiopia's ambitious Oromia Forested Landscape Programme.

The Oromia Forested Landscape Programme (OFLP) aims to reduce greenhouse gas (GHG) emissions by improving forest and livestock management throughout the Oromia region. The region is home to more than 30 million people and 52% of the country's forests and is also where wood extraction, slash and burn agriculture and livestock farming are the main causes of deforestation.

ISFL grant financing has supported the OFLP since its start in 2017 and has enabled on-the-ground investments that have resulted in over 350 community cooperatives being engaged in afforestation and reforestation activities and participatory forest management, with plans and assessments covering more than 195,000 hectares of natural forests. Over 46 million tree seedlings have been produced and more than 9,000 hectares of land have already (2023) been reforested. The programme has also worked with the private sector and governmental entities to promote the adoption of new business models that ensure environmental and economic sustainability and development of forest-smart policies that support local initiatives to thrive and scale up.

Through the programme activities, the ERPA will bring significant additional funding in the form of results-based payments for the verified emission reductions. A comprehensive benefit sharing plan has been prepared to ensure stakeholders are fairly recognised and rewarded for their effort in reducing emissions.

Some results to-date (203) include that 49,470 land users have received training, a private sector partnership has been set up with Nespresso, as well as numerous other engagements with other private sector entities and NGOs, including TechnoServe and Solidaridad.

Sources: BioCarbon Fund, 2023 & World Bank, 2023

Challenges and opportunities for the wildlife economy in Ethiopia

Challenges

Land use conflicts: With Ethiopia's growing human population (increasing annually by 2.6%) increasingly competing interests, agriculture versus conservation, are amongst the prime threats (Tessema et al., 2019) resulting in considerable changes in terms of land use (Nune et al., 2016; Belay et al., 2014; Wondie et al., 2011; Temesegen et al., 2021; Sintayehu & Kassaw, 2019; Fetene et al., 2016; Admasu, 2024; Jeza & Bekele, 2024). According to these studies, a large portion of natural habitat has been encroached upon and converted to domestic grazing land. This continuation of degradation has undermined protected area effectiveness (Duckworth, 2002; Admasu et al., 2020).

Underfunding with limited financial absorption capacity: Expenditure on PAs was estimated below USD 15/km^2 (EWCA, SDPASE 2009; Admasu et al., 2020), amongst the lowest on the African continent (Lindsey et al., 2018; Scholte et al., 2021; Van Zyl et al., 2024). This underfunding and resulting conservation overstretch - too few resources for the number and size of protected areas (Scholte et al., 2022) - is chronic and the overall capacities of PA personnel (including administrative) are limited. This results in a situation where, once more funding is available, the 'absorption' capacity turns out to be limited, and budgets are not fully spent.

Weak law enforcement capacity: Although the number of personnel in most protected areas is generally adequate, their overall capacity is low. This is due to extremely low budgets, low salaries, poor supervision and limited means and equipment, all of which result in them underperforming.

Poor collaboration among stakeholders: Lack of strong collaboration among sub-national states and the federal EWCA is creating gaps that compromise the effectiveness of conservation and wildlife economy efforts.

Limited PA governance and community-conserved areas: PA governance is under federal, regional (sub-national), and community; however, community-conserved areas are few and they are small. Only four community conservation areas

exist in Ethiopia: Menz Guassa, Abune Yoseph, Mt. Guna and Tama community conservation areas. The EWCA has shown strong interest to involve private non-profit organisations in the management of its PAs, as a result, on 11th December 2024, the EWCA and Gambella Regional State signed a management agreement with African Parks Network (APN) to take management responsibility of Gambella National Park which is a good start to diversifying the PA governance system in Ethiopia.

Lack of contemporary wildlife economy policies and legislation: The current legal and policy frameworks governing the wildlife economy need to be updated or reformed to address the current challenges facing conservation and the wildlife economy. The wildlife economy is multi-sectoral, but the existing framework does not have the required linkages to ensure a thriving sector.

Biodiversity declines: Biodiversity in Ethiopia is rapidly declining, PAs are losing their ability to include large mammals (Admasu et al., 2023) due to various factors including habitat loss, deforestation, poverty, unsustainable agriculture practices, poaching, illegal logging, pollution, population growth, climate change, and challenges of policies and legislation implementation, amongst others. Ethiopia is also a hotspot for the illegal wildlife trade, contributing to biodiversity loss (Tessema, 2017; Tessema, 2019). Since biodiversity is the main asset base for the wildlife economy, Ethiopia needs to implement effective conservation and management of natural resources to safeguard wildlife and the related economy.

Limited conservation finance initiatives: Although there are a few donor programmes which exist, the Government of Ethiopia is the prime entity for financing conservation. Conservation financing mechanisms are, however, poorly designed and lack legal frameworks. Carbon finance, Payment for Ecosystem Services (PES), Conservation Trust Fund (CTF), and other schemes will allow Ethiopia to capture value from goods and services that ecosystems provide. A few voluntary PES initiatives and REDD+ schemes have been established to engage communities and provide benefits from the conservation of ecosystem services.

Opportunities

Unparalleled UNESCO sites: Ethiopia's abundant cultural and natural resources are exemplified by its 12 UNESCO World Heritage Sites, which consist of nine tangible and four intangible sites. This surpasses the number found in any other African country. Most of these sites are of cultural significance, whereas the Simien and Bale Mountains National Parks demonstrate Ethiopia's natural beauty. Moreover, there are additional sites currently being reviewed by UNESCO for potential recognition, such as the Lake Tana Island Monasteries and their Adjacent Wetland Natural and Cultural Heritages, The Cultural Heritage of Yeha, Melka Kunture and Balchit, Sacred Landscapes of Tigray, Dirre Sheik Hussein Religious, Cultural and Historical Site, and Holqa Sof Omar: Natural and Cultural Heritage. These sites offer unique ecotourism opportunities.

Exceptional endemism: Ethiopia is ranked as fifth-highest in Africa in terms of biodiversity and hosts biodiversity hotspots in the highlands of the Eastern Afromontane and in the lowlands of the Horn of Africa. Further, Ethiopia is also the centre of the East Africa region that has eleven Afrotropical ecoregions and has been designated one of the Global 200, an ecoregion of global importance for biodiversity conservation (Asefa et al., 2020). This biodiversity in flora and fauna is strongly associated with the geomorphological history of the region. The country is characterised by dramatic geological landscapes and a broad range of elevations, from the Afar Depression (~125 m below sea level) in the northeast to the spectacular world heritage mountains of Ras Dejen (4533 m above sea level) inside the Simien Mountains National Park (SMNP). Furthermore, Ethiopia possesses 72% of Africa's mountains over 3,200 m above sea level (Williams et al., 2004). This large elevational range with its varied topography and climate has created notable habitat and species diversity, and centres of species endemism, particularly in the highlands (Asefa et al., 2024). This striking abundance of mega and endemic species makes it stand out as an extraordinary destination for international and regional tourists, as well as offering numerous opportunities in terms of bioprospecting.

Diverse Protected Areas (PAs): Ethiopia has approx. 87 PAs that include national parks, sanctuaries, wildlife reserves, hunting areas, and community reserves, covering approximately 10% of Ethiopia's landmass (Scholte et al., 2025). These areas, if properly managed, could drive the development of the wildlife economy through various activities that could significantly contribute to livelihoods and the local and national economy.

Climate change action: Globally, Ethiopia is ranked as one of the most vulnerable countries to the impacts of climate change. Ethiopia has already put a lot of structures, systems, and processes in place for climate action. There is an opportunity for Ethiopia to strengthen its climate action and efforts to access financing from different sources, including through innovation so that the set targets are met. Most significantly, there is an opportunity for Ethiopia to expand adaptation actions as part of its climate action in pursuit of its climate goals. There is also an opportunity for Ethiopia to implement a wide range of nature-based solutions, such as sustainable forest management (agroforestry) to address climate change across the country. Fuel subsidies were removed in 2008, and the country showed substantial willingness to explore carbon pricing instruments. The country is preparing (i) a carbon tax for transportation in Addis Ababa and (ii) an increase in the import tax for high vehicles. The introduction of fossil fuel taxes is favoured as they target higher-income households and more intensive consumers (GoE, 2020). By taking actions to mitigate the impacts of climate change, the country can earn revenues for conservation and development, as well as maintain (and in some cases restore) the wildlife asset base for the wildlife economy.

Tourism as a prime economic sector: The Ethiopian government has acknowledged the significance of investments in nature and tourism as a socio-economic development tool for poverty reduction and economic recovery. Ongoing economic reforms aim to substantially increase the number of international, regional, and domestic tourists. Nevertheless, tourism remains underdeveloped due to regional and local infrastructure deficiencies, security concerns, and a lack of awareness. The Ethiopian government has developed the Home-Grown Economic Reform as a pathway to prosperity. It aims to ensure macroeconomic stability to sustain rapid economic growth; rebalance the public and private sectors' role in the economy; and unlock new and existing sectors with growth potential. The tourism sector is a prime pillar of the economic reforms to develop high-end tourist accommodation facilities and attractions through PPPs. The Ethiopian government has

acknowledged the significance of its PAs and the natural capital, as a socio-economic development tool for poverty reduction and economic recovery. Given the natural and cultural diversity in the country, there is an opportunity to offer a diverse range of tourism goods and services, which would also serve to diversify the tourism industry and build greater resilience.

The government is optimistic about utilising tourism as a driving force for developing Ethiopia's green economy while prioritising local and national economies and protecting its biodiversity for present and future generations. The recent initiatives show a positive trend of considerable government support for Ethiopia's tourism sector, which is likely to grow as public-private partnerships increase in number and productivity. The newly developed tourist accommodations that are now accessible to visitors include Wonchi Crater Lake, Benuana village ecolodge, Kuriftu resort Awash Falls inside Awash National Park, Gorgora Port located in the northern part of Lake Tana, and Koyesha in Southwestern Ethiopia, which contains Chebera Churchura National Park (CCNP), and Halala Kella, Dinsho lodge inside Bale Mountains National Park (BMNP) and Sof Omar Cave Luxury lodge.

Conclusion

Ethiopia holds immense potential to harness its diverse natural resources and rich biodiversity as key drivers of sustainable development. The wildlife economy in the country includes ecotourism, non-timber forest products, hunting, carbon markets, and fisheries, offering valuable opportunities to generate income, conserve biodiversity, and support community livelihoods. The country's forests, in particular, are not only biodiversity hotspots but also central to economic development, cultural identity, and climate resilience. **Further opportunities exist to grow the wildlife economy through diversification of ecotourism products and services, aquaculture, wildlife ranching and increased value addition for forest products.**

Despite these opportunities, Ethiopia faces challenges which include deforestation, weak infrastructure, limited investment, land-use conflicts, and underdeveloped data systems. Nevertheless, progressive government policies such as the 2018 Forest Proclamation and recent carbon trading regulations are promising steps toward more inclusive and sustainable natural resource governance. Participatory Forest Management, carbon finance initiatives, and conservation-based tourism ventures demonstrate the potential of integrated, locally anchored models for conservation and economic development. **To fully unlock the potential of Ethiopia's wildlife economy, a supportive regulatory framework, stronger partnerships, better data systems, increased investment, and enhanced community involvement will be essential.**


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