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OF WILD FAUNA AND FLORA



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MOBILIZING SUSTAINABLE FINANCE FOR AFRICAN ELEPHANT CONSERVATION

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Mobilizing Sustainable Finance for African Elephant Conservation

Paper prepared for the Secretariat of the Convention on International
Trade in Endangered Species of Wild Fauna and Flora

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Main Messages

- Elephant conservation is complex and costly and requires mitigating human-elephant conflict, controlling habitat loss, and combatting poaching and illegal trade.
- The global interest in protecting keystone species like elephants has not translated into sustained financial support, so most conservation costs are borne by governments and local communities.
- The wildlife economy has been under-recognized and may present a strong growth opportunity for a number of African economies, given its importance in local livelihoods and in the macroeconomy.
- Additional funding for elephant conservation can be mobilized through several financial mechanisms including payments for ecosystem services, carbon markets, green bonds and wildlife bonds, debt-for-nature swaps, and Conservation Trust Funds. There may be other mechanisms that should be explored as well.
- Using these financial mechanisms will require the creation of an enabling environment that comprises involvement of local communities, improved intersectoral coordination, enhanced conservation performance monitoring, and policy reforms to incentivize private sector and donor investment.

1. Introduction

African elephants play a key role in ecosystems and economies across the continent. As keystone species, they maintain savanna and forest ecosystems by opening up pathways, disbursing seeds, and creating depressions that store water (Hicox, 2020). In forests, they help maintain healthy tree growth and carbon storage in trees and soils, which in turn helps reduce the effects of climate change (Beaune et al., 2013). Also, elephants are a centerpiece for tourism and trophy hunting in many parts of Africa, helping to generate considerable income, employment, and foreign exchange earnings (Blignaut and de Wit, 2008; Naidoo, Weaver, et al., 2016).

IUCN's 2016 African Elephant Status report provides the most recent reliable estimate of the total population of African elephants, approximately 415,000. About 70% are found in southern Africa. About one quarter are forest elephants, found in Central and West Africa. The rest are savanna elephants spread across the continent. There was a precipitous decline of 111,000 elephants between 2005 and 2015, primarily due to a surge in poaching for ivory. Since then, poaching has declined, primarily due to increased efforts to control poaching and to reduce the demand for ivory. Despite the continued continent-wide losses in elephant populations, there have been growing populations in some areas for several decades, particularly in the Kavango-Zambezie Transfrontier Conservation Area of southern Africa. In 2021, IUCN listed African elephants as two separate species for the first time, and declared the African forest elephant as Critically Endangered and the African savanna elephant as Endangered (IUCN, 2021).¹

Elephant conservation is complex and costly. Threats and challenges facing wildlife management authorities include poaching for ivory and illegal trade, habitat loss and fragmentation, climate change, crop raiding, injuries and deaths to humans caused by elephants, and retaliatory killings of elephants by affected communities (Advani, 2014; CITES, 2010; Muboko, et al., 2014). While there is great global interest in conserving elephant populations, this has failed to translate into sustained financial support, so most of

¹ The scientific name used in CITES to describe the species of African elephants covered by the Convention remains *Loxodonta africana*. The practical effect of this that all African elephants are covered by CITES regulations under the scientific name *Loxodonta africana* - including animals referred to by some as African forest elephant (*Loxodonta cyclotis*).

the costs of conservation are borne by local communities and national governments. Wildlife conservation budgets in Africa, already inadequate, have been slashed during the COVID-19 pandemic because of the cost of relief measures and the need for governments to slash non-health related funding. Tourism revenue and donor funding for conservation have been impacted as well (Lindsey et al., 2020). Government budgets are further stretched by rising inflation across the globe.

With conservation funding under more pressure than ever, there is a need to identify new, long-term streams of funding to cover the costs of elephant conservation and share benefits with communities living near elephant populations.

This paper examines several ways to expand conservation funding to support African elephant conservation. It was commissioned by the CITES Secretariat in the implementation of the Conference of Parties Decision 18.9 on Access to funding, which calls for an exploration of the potential to scale up financial resources to ensure conservation and sustainable use of wildlife. The paper reviews several existing conservation financial mechanisms including payments for ecosystem services, carbon finance payments, green bonds, debt-for-nature swaps, and conservation trust funds. We then consider the pros and cons of using each mechanism for elephant conservation, and discuss the enabling conditions necessary to attract more conservation investment from public and private sources.

Another approach to generating new funding for conservation proposed by some elephant range states is a one-time sale of existing ivory stocks. This option is not explored in this paper because it is currently not legally possible under CITES, and the feasibility of stock sales is unknown, given the demand reduction efforts in Asia and other regions.

The review of these mechanisms is intended as a first step in a dialogue among wildlife authorities, donors, investors, and other stakeholders. The aim is to identify ways to establish more reliable, predictable, and steady flow of funds for wildlife conservation. Achieving greater funding success will require alliance building and establishment of enabling conditions that can position wildlife authorities and local communities in the African elephant range states to become business partners, working in concert with donors and investors.

2. The Wildlife Economy

A recent assessment by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) concluded that several billion people worldwide depend on wild species of living organisms for their economic well-being. The report noted that wild plants and animals are particularly important to people in economically vulnerable situations. Nearly 70% of the world's poor are directly dependent on wild species and on businesses supported by them. These living natural resources are an essential ingredient for sustainable development and are utilized for food, energy, medicine, material and other purposes. Many countries derive significant economic value and job creation from sustained use of wild plants and animals. Wildlife is used through fishing, logging, gathering, and hunting activities that contribute hundreds of billions of US dollars to the global economy. In addition, nature-based tourism (non-consumptive wildlife use) generates substantial revenue and employment. Prior to the COVID-19 pandemic, protected area visitation alone generated US\$600 billion per year globally, with the greatest tourism visitation growth rates in wildlife-rich countries (IPBES, 2022).

Sustainable utilization of wildlife can contribute both to economic development and conservation (Webb, 2002; Snyman et al., 2021a). This is in keeping with a core objective of the 1992 Convention on Biological Diversity (CBD) that emphasized sustainable utilization of the components of biodiversity. The CBD defined sustainable use as “the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity” (Convention on Biological Diversity, n.d.). Sustainable use of wild plants and animals contributes to the well-being of indigenous peoples and local communities through subsistence, as well as through trade in formal and informal markets (IPBES, 2022). Sustainable use of wildlife is also embedded in the UN Sustainable Development Goals, particularly SDG 14 (sustainable use of marine resources) and SDG 15 (sustainable use of terrestrial resources) (United Nations, n.d.). The Convention on International Trade in Endangered Species of Wild Fauna and Flora also has a related mandate: “CITES stands at the intersection between trade, the environment and development, promotes the conservation and sustainable use of biodiversity, should contribute to tangible benefits for indigenous peoples and local communities, and ensure that no species is threatened with extinction by entering into international trade” (CITES, 2019b).

Not all wild plant and animal economic activity is sustainable. The World Bank published a report in 2019 examining the extent of illegal logging, fishing and wildlife trade (Miranda et

al., 2019). This illegal trade includes threatened species such as pangolin (the most traded mammal species) and wood products from rosewood trees. Other illegal trade arises from unauthorized extraction of timber and marine species that depletes resources important to local communities. These activities arise from corruption, organized crime and weak enforcement of laws and regulations. Illegal logging, fishing and wildlife trade deplete natural resources, and erode ecosystem services including water filtration, carbon storage and biodiversity protection.

Box 1. Economic Impacts of Elephant Poaching on Tourism

The poaching of African elephants has a direct economic impact on the economies of African range states. An economic study by Naidoo and colleagues (2016) calculated the impact of poaching on tourist visits to African protected areas and concluded that the annual losses are approximately US\$25 million dollars. They argue that since this lost tourism revenue exceeds the antipoaching costs necessary to stop the illegal killing of elephants, conservation in protected areas “represents a wise investment with immediate and ongoing payback for tourism.” They also find that in Central Africa, elephant-based tourism is less able to contribute substantially to elephant conservation because tourism levels are lower and forest elephants are often harder to see. In these countries, they encourage different economic mechanisms such as carbon offset payments.

Source: Naidoo, Fisher, et al. 2016

The estimated worldwide economic losses total more than US\$1 trillion annually. Approximately 90 percent of the losses arise from foregone ecosystem services, currently unpriced by markets. By comparison, these losses are twice or more the combined, annual global losses from piracy and counterfeiting (Miranda et al., 2019). Box 1 summarizes a study of the economic impacts of illegal killing of African elephants on protected area tourism.

Comprehensive work by Snyman and colleagues has documented the potential benefits from sustainable use of Africa’s wildlife economy (Snyman et al., 2021a). They define the wildlife economy as the businesses and economic activities that either directly depend on wildlife or contribute to wildlife conservation through their activities. They focus on five categories of activities:

- Ecotourism – includes non-consumptive use of wildlife
- Hunting & fishing – includes trophy hunting of wildlife, game meat hunting, and artisanal and small-scale fishing

- Wildlife ranching – includes breeding of wild animals for meat, hunting, tourism and other uses
- Carbon market – includes projects that generate income through REDD+ and other financial mechanisms by protecting or sequestering carbon or by reducing carbon emissions
- Non-timber forest products – includes non-timber forest products used for subsistence and commercial purposes.

The authors present case studies of the economic importance of wildlife resources in Ghana, Gabon, Rwanda and Kenya. Box 2 presents a summary of their findings for each country. They find that Africa has exceptionally rich wildlife resources, including the largest combination of mammal species in the world, the second-largest rainforest, and some of the most productive marine ecosystems on earth. These natural assets hold large economic value and are providing income, jobs and government revenue. However, this natural capital is rapidly declining, due to a wide range of threats including land use change, climate change, illegal trade, corruption and other causes. There is an urgent need for governments to recognize the value of these living resources and to safeguard them by scaling up their efforts to reduce threats to these valuable wildlife resources (Snyman, 2021b).

Wildlife tourism is a major economic activity in Africa, and elephants are directly and positively related to tourism. Tourism can be grouped into two categories: wildlife watching and trophy hunting. Both approaches are common in the elephant range areas, but their economic importance varies from country to country. The direct contribution of tourism to the economy of select Africa range states is shown in Table 1. In Botswana, tourism accounts for 12.5% of GDP and 9.3% of national employment. In Kenya, comparable numbers are 7.7% of GDP and 8.6% of employment. A much lower proportionate impact is seen in Gabon and Democratic Republic of Congo.

The wildlife economy may present a significant growth opportunity for many economies in Africa given its importance in local livelihoods and in the macroeconomy. Snyman et al., present a roadmap for expanding the wildlife economy.

Step 1 is to strengthen policy, legal, and regulations that govern natural resources in each country, with a particular eye on property rights over forest, wildlife and fisheries. For

Box 2. Wildlife Economy in Gabon, Kenya, Ghana and Rwanda

Gabon

Estimated value of the tourism sector:
US\$500 million

Estimated 10,000 to 11,500 tons of
bushmeat is sold annually with an
economic value of around US\$22.73
million

Gabon is the first African country rewarded
by the Central African Forest Initiative

NTFPs have the capacity to create added
value of more than US\$180 million

Kenya

In 2019 tourism to wildlife areas
earned Kenya US\$1.08 billion

Total Tourism in the country contributes
8-14% to GDP

160 conservancies host 65% of Kenya's
wildlife, they are one of the largest providers
of employment in rural Kenya

Opportunity cost of hunting is estimated
between US\$31.5–63 million annually

Kenya has 15 registered carbon projects
in voluntary carbon markets

25,000 MT of honey valued at US\$40
million annually

Ghana

2018 tourism generated US\$2.5 billion

Fisheries lands about 400,000 MT of fish
valued at over

US\$1 billion annually

First REDD+ project started to pay US\$50
million

Largest exporter of shea nuts earning over
US\$34 million in 2015

Rwanda

Rwanda is the second-fastest growing
tourism economy in sub-Saharan Africa

More than 80% of tourism in Rwanda is
nature-based

2019 park revenue was US\$28.5 million

90% of Rwanda's population depends on
natural resources for their livelihood

2007 value of firewood and charcoal
amounted to US\$122 million

Source: Snyman, et al., 2021b.

example, Namibia passed legislation that enables local communities to establish conservancies that manage wildlife resources for community benefit.

Step 2 is to improve the overall business environment, which will attract greater investor interest. Good governance and ease of doing business will encourage investment in nature tourism, carbon markets, and trade of wildlife products. Rwanda has pass legislation to

Table 1. Tourism Contribution to the Economy of Select Elephant Range States (2019)

GDP (direct contribution):	Direct employment:
Botswana = 12.5%	Botswana = 9.3%
Cameroon = 8%	Cameroon = 8.5%
DRC = 1.9%	DRC = 1.7%
Gabon= 2.7%	Gabon = 2.9%
Ghana = 6.0%	Ghana = 6.3%
Kenya = 7.7%	Kenya = 8.6%
Namibia = 14.9%	Namibia = 14.4%
Rwanda = 11.4%	Rwanda = 6.1%
South Africa = 6.4%	South Africa = 9.3%
Tanzania = 10.6%	Tanzania = 6.1%
Zambia = 7.4%	Zambia = 7.4%
Zimbabwe = 6.5%	Zimbabwe = 2.7%

Source: WTTC, 2022

tourism, carbon markets, and trade of wildlife products. incentivize investment in several priority sectors with a goal of making the country a global hub for business and innovation. Several countries have established public-private partnerships for co-managing national parks as a means to attract investment and private sector expertise.

Step 3 for growing the wildlife economy is to promote collaboration and partnerships. Since the wildlife economy is a complex environment, growing it requires collaboration across multiple government departments and engagement with local communities, NGOs, universities and the private sector. An example of a plan for such collaboration is found in South Africa’s

National Biodiversity Economy Strategy.

Step 4 is to improve transparency and data collection. There is generally a lack of monitoring and evaluation of the wildlife economy including market activity, nature-based tourism, and protected areas across Africa. One example of progress in this area is the work that Gabon has undertaken to establish methods for surveilling and monitoring its biodiversity.

Step 5 is to build capacity of all stakeholders to engage in and manage the wildlife economy. This includes helping local communities, protected area managers, national institutions, and others to better understand wildlife trade, wildlife ranching, carbon markets, and other activities to expand the economic benefits from the wildlife economy (Snyman et al., 2022b). To be most effective, any national strategy to grow the wildlife economy should be

inclusive so that local communities benefit, and it should be diversified so there is not undue reliance on one economic activity such as tourism.

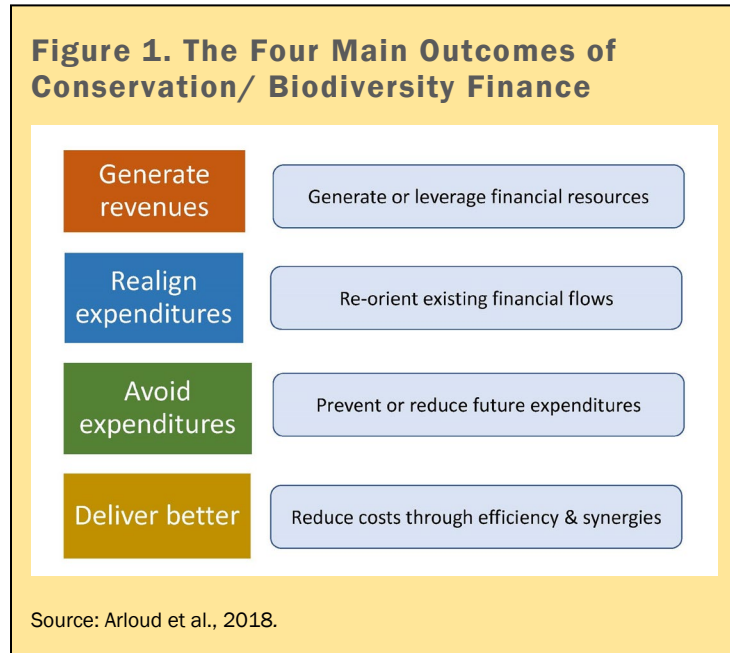
3. Conservation Finance

It has long been recognized that conservation finance, or biodiversity finance, is an essential aspect of conserving nature. It is a broad term that encompasses a wide range of issues, including national budget allocation, tax policy, financial planning for protected areas and other financial aspects of conservation. More recently, discussions about conservation finance have broadened to include investments by the private sector. At the international level, attention has focused on the financial challenges of meeting global biodiversity goals. There is a growing recognition that the amount currently spent on biodiversity conservation falls far short of what is needed to halt the decline in biodiversity loss. The global level of spending on biodiversity conservation in 2019 was US\$124-143 billion per year. Compared to the estimated global need, this leaves a biodiversity financing gap of US\$598-824 billion per year (Deutz et al., 2020).

Addressing this gap is one of the aims of the Biodiversity Finance Initiative. BIOFIN is a UNDP managed global partnership that works with countries to support their financial management for biodiversity conservation using country level assessments (Arlaud et al 2018). BIOFIN categorizes conservation finance mechanisms into four categories: (1) generating new revenues to support conservation, (2) realigning existing financing to reduce negative impacts on conservation, (3) avoiding future expenditures through policy and investment, and (4) delivering more effective and efficient conservation. (See Figure 1.)

We will focus on the first box – **generating new revenues to support wildlife conservation**. We will not examine other topics such as subsidy reform, fiscal policy, or sustainable supply chains. These are important elements of biodiversity finance, but are not directly related to mobilizing new financial flows to support wildlife conservation and sustainable use.

The largest source of finance for biodiversity conservation globally is domestic government spending, which accounts for US\$75-78 billion (57%) (Deutz et al., 2020). Many African countries have seen government allocations for conservation shrink in real terms over time, and this was exacerbated during the COVID-19 pandemic, when revenues fell and funds were shifted to other needs (Lindsey et al., 2020). The decline in government spending for conservation underscores the need to find new funding sources.



Another traditional source of conservation funding is official development assistance (ODA). This is financing provided at concessional rates or terms by development banks and international organizations to promote economic development. A small portion of ODA goes to biodiversity conservation. Deutz et al (2020) estimate this portion to be US\$4-10 billion (5%) per year across the developing world.

Philanthropy and conservation NGOs provide another US\$2-3

billion (2%) a year of finance for biodiversity conservation (Deutz et al., 2020). The relative importance of this source of funding is much greater in the developing world. For example, in Eastern and Southern Africa, donor support from both ODA and philanthropy provides more than 50% of the funding of protected areas. The share of donor support for protected areas is between 70-90% in Angola, Malawi, Ethiopia and South Africa (IUCN, 2020).

4. Financial Mechanisms for Wildlife Conservation and Sustainable Use

In this section we discuss some of the more innovative ways to generate revenue for wildlife conservation and sustainable use. This provides an overview of emerging practice and identifies areas of promise for mobilizing additional conservation finance in the future.

Payments for Ecosystem Services

Payments for ecosystem services (PES) is a widely used mechanism to generate revenue to compensate landowners or communities for the management of natural resources needed to maintain natural resource stocks and the resultant flows of ecosystem services (King, 2021). Most widely applied to the protection of watersheds that provide water for human consumption, PES programs have been extended to a wide variety of other services including flood protection, water purification, carbon storage and biodiversity protection. PES schemes require three things: a way to generate revenue, institutional arrangements to transfer and manage funds, and a delivery mechanism for the generated finance (Tobin and Mitchell, 2021).

PES programs usually include a contractual agreement that ties cash payments or other forms of compensation to the delivery of services on an annual basis. Most programs are operated by national governments, although nongovernmental agencies often serve as intermediaries. Over the past two decades, there has been an explosion in PES programs, with more than 500 PES programs worldwide in 2018, accounting for over US\$36 billion in annual payments (Salzman et al., 2018). Most PES programs have been implemented in developing countries that have not had a long history of environmental incentive programs. Following the rising international political and scientific attention to ecosystem services that occurred in the late 1990s, the PES concept was rapidly adopted by governments in the developing world, particularly in Latin America (Schomers and Matzdorf, 2013).

The best-known example of this approach is Costa Rica's Pago por Servicios Ambientales (Payments for Environmental Services), which has operated since 1996. Using funds from donors, special taxes and buyers of environmental services, the program pays for forest conservation through contracts on approximately a half million hectares. The program compensates land owners for lost income, and the payments are based on the type of forest protection, reforestation, or agroforestry activity undertaken (Pattanayak et al., 2010). The largest PES is China's Sloping Lands Conservation Program, established in 1999 in

response to a series of floods and droughts. This program focuses on enhancing soil conservation through converting steep croplands to forests and grasslands, as well as reforestation. The program has some 12 million hectares of land under contract (Salzman et al., 2018).

Some concerns have been raised about the effectiveness of the PES approach. First, PES programs are intended to replace missing markets for environmental services by providing direct incentives to commodify those services. PES may not work well in settings without strong governments and institutions, including technical assistance, land tenure, credit, and full information. In addition, the programs are often implemented without follow up evaluation of their effectiveness (Pattanayak, 2010).

Some PES programs operate collectively, i.e. they provide incentives to groups or communities to provide ecosystem services on their land. These collective contracts have been particularly attractive in rural communities in low-income tropical countries. This is because collective PES approaches are more suited for communal tenure arrangement or community-based management resources systems. Hayes et al. reviewed a number of these collective PES arrangements and found that while these approaches are also sensitive to governance conditions, they can increase collective land management activities that provide environmental and economic benefits (Hayes et al., 2019).

While most PES are area-based, there are several examples of PES applied to species-based conservation using a performance-based approach. One such program is Wildlife Credits in Namibia, which makes payments related to rhino sightings in communal conservancies and for protecting an elephant corridor. In one community, bonus payments are made every day a conservancy takes a proof-of-life photo of a rhino (Box 3). In Tanzania, the Ruaha Carnivore Project makes payments to communities based on camera-trap evidence of the presence of predators (Roe et al, 2020). Table 2 summarizes four wildlife PES programs including funding sources and whether payments are made to individual households or to communities.

Box 3. Namibia's Wildlife Credits

Wildlife Credits are a type of PES that pays communities for wildlife conservation based on performance. The underlying premise of the program is that Namibia's ecosystems and wildlife have global economic value, and this value should be realized by people who are living at the front line of protecting these resources, and who bear a large proportion of the costs that accompany living with wildlife. The Wildlife Credits payments are tied to measurable conservation results. Wildlife Credits operates under the auspices of the Community Conservation Fund of Namibia, a trust fund. Wildlife Credits has several components in different communities.

One example is the payments received by the Sobbe Conservancy in the Zambezi region, where there is a well-used elephant pathway that runs close to local communities. Members of the conservancy have traditionally protected the corridor by avoiding crop planting and erecting wooden fencing. The corridor is crucial to the movement of elephants between Botswana, Namibia, Angola and Zambia. In 2018, Amarula/Distell Namibia, a company which makes a liqueur whose branding is closely linked to elephants, formed a partnership with Wildlife Credits and the Sobbe Conservancy. They invested N\$130,000 to provide payments over a three-year period. The members decided to use the funds to pay for a village electrification project. Satellite imagery is being used to confirm that the communities have continued their long-standing tradition of preventing development in the corridor. Camera traps show that the corridor is being used by many animal species including elephants, lions, antelopes, leopards and spotted hyenas

Source: Katjingisiua and Mauney, 2020; CCFN, (n.d.).

Table 2. Example PES for Wildlife Conservation in Africa

Name of Program	Species	Collective or Individual	Funding Source	Description
Wildlife Credits (Namibia)	Lions, elephants, rhinos	Collective	Local businesses, government, international NGOs	Payments to local conservancies based on predator sightings by tourist lodges and for performance of elephant corridors
Ruaha Carnivore Project (Tanzania)	Lions	Collective	International NGOs, bilateral aid agencies, other donors	Communities living near lions are provided non-lethal means to protect their livestock. Community benefits are tied to camera-trap monitoring of wildlife in adjacent areas
Wildlife Conservation Lease Program (Kenya)	Various	Individual	International donors, local NGOs and World Bank	Landowners adjacent to Nairobi National Park are provided annual payments for not fencing or selling their land.
Simanjiro Conservation Easement (Tanzania)	Various	Collective	Tour operators and international NGOs	Payments are made to a community concession adjacent to Tarangire National Park to control cultivation, charcoal production and illegal hunting
<i>Source: Roe et al., 2020; USAID, 2018;</i>				

Carbon Offset Payments

The growth of carbon markets over recent decades provides another important conservation financing tool. Conservation activities, including forest protection, reforestation, improved management of rangelands, and conservancies all have the potential to contribute to the Goal of the Paris Agreement of 2015 to limit the rise of global temperatures. The origins of carbon markets lie with the 1992 Rio Climate Summit, which led to the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, developed countries provide financial support through UN implementing agencies to developing countries for combatting deforestation and forest degradation. The focus is on tropical forests, which have been heavily impacted by human activity.

Reducing Emissions from Deforestation and Forest Degradation (REDD+) is a framework developed at several meetings of the Conference of Parties of the UNFCCC to guide forest sector activities to reduce emissions and enhance forest carbon stocks. REDD+ includes the development of a national strategy, implementation of national policies and demonstration activities, and results-based actions that can be fully measured. Through the sale of carbon credits in voluntary carbon markets, REDD+ provides monetary incentives for local entities to improve carbon stocks or halt deforestation (UNFCCC, n.d.). Closely related to REDD+ is the UN-REDD program, a multilateral body that partners with developing countries to build technical capacity to implement REDD+ and meet requirements of UNFCCC for REDD+ payments.

There was a boom in REDD+ projects following the UNFCCC COP13 in 2007, and dozens of national and sub-national REDD+ programs were approved. There was slump in new activity a decade later, following the lack of agreement on a global cap on carbon at UNFCCC COP21. However, many REDD+ projects have been implemented in recent years, primarily by non-governmental organizations or for-profit companies, oriented toward the voluntary carbon market. These projects have provided a proving ground for delivering results through the carbon market. Box 4 describes a carbon offset project in Tanzania, that has been designed to benefit local communities and provide biodiversity benefits in addition to generating saleable carbon credits.

To date, local REDD+ projects have had modest, positive impacts on forests and people, and the projects have provided an avenue for multiple actors to participate in forest conservation activities. However, there is a lack of uniform carbon accounting methods, which complicates the question of how much these projects are contributing to achieving national and international climate objectives (Atmadja et al. 2022).

Box 4. Carbon Tanzania

Carbon Tanzania is a social enterprise using a business model to capture the value of selling carbon credits through voluntary carbon markets. It works with a number of partnerships on land and forest restoration activities.

The organization has contracted with indigenous and forest communities who have committed to forest and rangeland sustainable management, and authorized Carbon Tanzania to sell carbon credits on their behalf. Sixty percent of the proceeds from the sales are returned to the community.

Sale of carbon offset credits on behalf of Hazda hunter-gatherer communities is through a voluntary market. Many of the credits have been bought by travel companies, including Africa-based nature-based tourism companies seeking to offset the emissions produced by their customers. In the first seven years of the project, independent auditors estimated an annual average capture of 22,000 tons of carbon dioxide and nearly US\$500,000 in revenue going to communities. This became the basis for a new REDD+ project launched in 2022 that is expected to prevent deforestation near the Ngorongoro Conservation Area and to generate US\$450,000. The primary buyer of these credits is a German offsets company.

Source: Pearce, 2022; Roe, 2020.

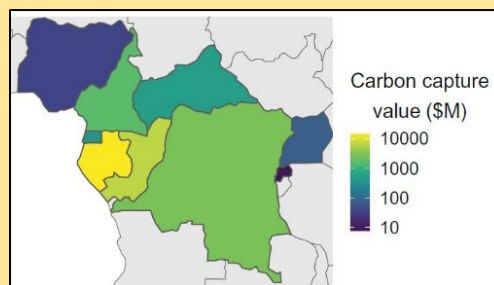
There is strong potential for using carbon offset payments to finance forest elephant conservation, according to research by Berzaghi and colleagues (2019). Forest elephants contribute to above-ground carbon storage by reducing small tree density via trampling and consumption, and by dispersing seeds of especially large trees. The resulting change in forest structure means that forests with elephants store 3-15% more carbon than those forests without elephants (Berzaghi et al., 2019). Valued at an average 2019 carbon price of US\$25 per ton, this would translate into a total present value of more than US\$20 billion over the next ten years for the forest elephants' carbon-capture services. The authors argue that the magnitude of these benefits is large enough to attract investors looking for carbon offset opportunities, and "facilitate financing of conservation programs and local

communities and broaden the portfolio of nature-based solutions to mitigate climate change” (Berzaghi et al., 2020). (See Box 5 for additional details.)

Box 5. Financing Forest Elephant Conservation by Valuing Carbon Services

The forest elephants of Central and West Africa browse on small trees in the rainforest canopy. Berzaghi et al. (2019) hypothesized that this constant thinning of trees reduces competition for resources and allows surviving trees to reach larger sizes. They tested this hypothesis with an ecological model for two sites in the Congo basin and found that forest disturbance by elephants increases above-ground biomass, impacts rainforest ecosystem functioning, and enhances carbon stocks over time.

In a follow-up study, they estimated the economic value of these carbon services and argued that investing in elephant carbon services could provide added value to the usual REDD+ approaches to forest protection that may not provide sufficient incentives for conservation of wildlife. Using current carbon prices, they developed a model to value the carbon in 79 tropical rainforest protected areas in nine Central and West African countries under three different conservation scenarios using a range of different carbon prices. They found that with protection of elephants, the resulting carbon capture services would be worth US\$20.8 billion over the next 10 years. The geographic distribution of this carbon value is shown in the figure below. The authors acknowledge that it may be challenging to convince nations to participate in carbon markets, but they are convinced that carbon finance has the potential to deliver larger and more dependable benefits than other sources of conservation finance.



Source: Berzaghi et al., 2019, Berzaghi, et al., 2020.

Green Bonds and Wildlife Conservation Bonds

Green bonds have recently emerged as a new way to generate funding for environmental activities. These bonds are issued by various public and private entities including intergovernmental institutions, corporations, financial institutions, government agencies and development agencies. The bonds are categorized as green, based on agreed-upon standards, with certification most often provided by the Climate Bonds Initiative and Green Bond Principles of the International Capital Market Association (Tobin and Mitchell, 2021). Green bonds are debt instruments that can be traded on capital markets such as the London Stock Exchange. The first green bond was issued in 2007, and since then, they have generated hundreds of billions of US dollars for environmental projects, primarily for renewable energy (Meyers et al 2020). In spite of this growth, green bonds have been used modestly for biodiversity projects. In 2019, out of a total market size of US\$271 billion, only 0.5-1.0% was allocated to biodiversity (Deutz et al (2020).

The markets for green bonds are not as well developed in Sub-Saharan Africa, despite large opportunities in infrastructure, renewable energy and climate-smart agriculture. South Africa, on the other hand, has been a regional leader in green bond issuance. Kenya and Nigeria have taken steps recently to establish policies to promote green finance opportunities (Amundi Asset and IFC, 2021).

One example of a bond directed to biodiversity conservation and sustainable use is the Republic of Seychelles Blue Bond, issued by the government with help from the World Bank and The Nature Conservancy. The US\$15 million bond, sold to private investors, will generate US\$430,000 annually to support sustainable fisheries. The bond was supported by World Bank credit guarantees and a concessional loan that lowers the interest rate that the government has to pay investors to 2.8% (Tobin and Mitchell, 2020). This is an example of blended finance, where capital from public or philanthropic sources is used to encourage private sector investment by improving the risk-return profile.

Another example of a bond to promote biodiversity protection is the Wildlife Conservation Bond (sometimes referred to as “The Rhino Bond”), issued by the World Bank in March 2022. This US\$150 million bond was designed to support the conservation of black rhinos in two protected areas in South Africa. The bond was structured to blend private capital and

a GEF grant to generate funding for conservation activity.² The bond offers a payout to investors that is directly linked to success in protecting and growing the rhino populations. During the life of the bond, park authorities will receive an investment of ZAR152 million (equivalent to approximately US\$10 million at time of issuance) to manage rhino populations. An advanced conservation monitoring system will trace key conservation performance indicators. (Box 6 provides additional details on how the bond works.)

The bond represents a major change in the way wildlife conservation is financed. In a sector that historically has been dominated by donors and philanthropic investors, the bond creates an opportunity to attract private investment for protecting a particular wildlife species. The WCB has the potential to be replicated for other species and for ecosystem services such as provision of drinking water.

Debt-for-Nature Swaps

Debt-for-nature (DFN) swaps are financial transactions in which a portion of a country's foreign debt is cancelled or restructured in exchange for the recipient country agreeing to invest in conservation activities. This arises in situations where the external debt of the country has little chance of being fully repaid. The savings arising from the reduced debt service are devoted to conservation initiatives (King, 2020).

Many of the early debt swaps were three-part agreements involving NGOs purchasing debts from commercial banks well below market value, thereby providing debt relief for the debtor nation. Participating international NGOs included The Nature Conservancy, WWF and Conservation International. After the debt purchase, the NGO would transfer title to the debtor country in exchange for the country agreeing to meet environmental goals. This was often done by setting up a national environmental fund. The first debt swap was between the Bolivian government and Conservation International in 1987, and many similar swaps took place in the 1990s (Kramer and Sharma, 1997).

² The WCB differs from a green bond, which is a "use of proceeds bond" to support environmental projects. The WCB is a structured bond, which is a type of bond that is designed to attract a certain type of investor, in this case, investors willing to support rhino conservation.

Box 6. Wildlife Conservation Bond for Black Rhinos

Private investors are largely absent from investment in wildlife because of uncertainties, perceptions of unprofitability, and lack of products in the market that channel financing to conservation. As a result, the Wildlife Conservation Bond was structured to provide a product to investors that uses a blended finance approach. The bond was issued by the World Bank with a AAA credit rating and paired with a GEF non-grant instrument that is performance-based to directly support wildlife conservation.

At the end of the 5-year life of the bond, investors will receive back their principle plus a potential conservation success payment that is tied to rhino population growth. The conservation success payment is financed by the GEF. If there is no population growth, the bond holders will receive their principal back but will not receive a conservation success payment. With annual growth in population, from 0-4%, the investors will also receive a conservation success payment which increases in a stepped-up amount over the bond's life. In every case, the investors will be financially supporting conservation since they have agreed to forego the normal semi-annual coupon payments associated with a traditional World Bank-issued bond. Why would they give up coupon payments? They would do so both because of the opportunity to engage in the conservation effort, and the prospect of a performance payment that could potentially exceed the foregone coupon values.

The coupon funds that would ordinarily go to investors will flow to the reserves to finance conservation activities. These include improved management of more than 150,000 hectares of habitat contained within the protected areas, poaching reduction activities, and a jobs program to provide employment for more than 2000 beneficiaries of project interventions

Source: Dominguez, 2022; World Bank, 2022.

Bilateral debt swaps also emerged in which governments holding debt forgave a portion of a debtor nation's bilateral debt in exchange for commitments to spending for environmental goals. In the early 2000s, the US government engaged in a number of bilateral exchanges following passage of the 1998 Tropical Forest Conservation Act. Between 1985 and 2000, US\$2 billion of debt swaps occurred, with the US, Switzerland, and Germany as the largest

contributors to debt relief. After the early 2000s, there was a lull in DFN activity due to the emergence of the Heavily Indebted Poor Countries Initiative and Multilateral Debt Relief Initiative operated by the World Bank and International Monetary Fund. These initiatives provided much-needed debt relief to 39 countries, mostly in Africa, but without a tie to meeting environmental goals (Steele and Patel, 2020).

In recent years, the concept of debt-for-climate relief emerged with the Seychelles government working with GEF, UNDP and The Nature Conservancy to develop a debt swap to establish large marine protected areas (see Box 7). Following this success, the International Institute for Environment and Development issued a report introducing the concept of “debt for climate and nature swaps” to address the “triple threat” of growing indebtedness, climate vulnerability and biodiversity loss. The already burdensome US\$8 trillion debt load for developing countries was worsened by the economic collapse associated with COVID-19. In 2020 and 2021, debt servicing alone was estimated to be more than US\$3 trillion in developing countries. The authors argued that swapping debt for nature and climate protection will provide a bridge to greater debt sustainability. They focused particular attention on China, the largest bilateral holder of developing country debt. They also developed metrics for prioritizing recipients of debt relief based on a combination of climate vulnerability, biodiversity assets, indebtedness and creditworthiness. Their list of 15 prioritized countries include six in Africa: Cabo Verde, Kenya, Madagascar, Mozambique, Senegal, and Uganda (Steele and Patel, 2020).

Box 7. Seychelles Debt-for-Climate Swap

In 2018, the government of Seychelles entered into an agreement to protect one third of its coastal and marine area in exchange for a reduction of its sovereign debt. (Sovereign debt is the amount of money that a nation’s government has borrowed.). The government partnered with GEF, UNDP, and The Nature Conservancy to swap US\$21 million of official debt in the first debt for climate swap. The debt that was bought back at a reduced rate was paid into the Seychelles Conservation and Climate Adaptation Trust, a new entity set up to manage the funds and invest them in coastal protection and adaptation activities including new marine park areas, fisheries management, biodiversity conservation, and ecotourism.

Source: Blended Finance Task Force, n.d.

Conservation Trust Funds

Conservation Trust Funds (CTFs) are private, legally established institutions that provide a long-term, income stream for conservation activities, often through a local, flexible grant making process. In addition to providing sustainable financing, the trust funds often benefit various stakeholders by providing capacity building and other activities. CTFs can take on several forms including (a) an endowment fund – where the earned interest is spent but not the capital, (b) a sinking fund – where the income from the fund and part of the capital is spent each year until the fund reaches zero, and (c) a revolving fund – which continually receives new contributions and some is spent each year. The trust funds receive investments from a variety of sources, including public funds, earmarked taxes and fees, philanthropy, and debt-for-nature swaps. The funds can be paid out in several ways, including grants and payments for ecosystem services (WWF, 2009).

One early example in Africa was the Madagascar Protected Areas and Biodiversity Fund, which was established in 2005 as an innovative financing mechanism to support biodiversity conservation. With legal independence and a strong institutional base, this trust fund has been able to attract significant investment from the Madagascar Government, Conservation International, WWF, the World Bank, the Global Environment Facility, the MacArthur Foundation, and several bilateral agencies. Approximately US\$43 million of additional investment came from French and German debt-for-nature swaps, making it the largest CTF in Africa with investment capital of US\$139 million (WWF, 2009). The endowment is invested in international capital markets and only the investment income is spent each year to support protected areas. After more than 15 years in existence, it has provided sustainable and predictable financial flows to the country's 45 protected areas covering more than 3.5 million hectares of land (FAPBM, n.d.).

Another example is the African Elephant Fund (AEF), a joint venture implemented by UNEP in collaboration with 38 African range states, donors, CITES, and the Convention on Migratory Species, to provide funding for reducing threats to African elephants. While not legally defined as a trust fund, it operates similar to a CTF with regular replenishment from donors and an annual grant making process for conservation projects. Since its establishment in 2010, AEF had received US\$4.9 million from donors as of 2022, with the largest support coming from The Netherlands, Germany, and the European Union. (See Box 8 for further information about AEF.)

Another CTF example is the new Pan African Conservation Trust (A-PACT) that was launched in 2022, during the Africa Protected Areas Congress, the first continent-wide meeting of African conservationists and leaders to discuss protected areas and their affiliated ecosystem services. The fund was designed by the African Protected Areas Directors network, working with IUCN and the African Wildlife Foundation. A-PACT is envisioned as an African-led, independent mechanism to provide consistent and reliable funding for over 8,600 protected and conserved areas and systems across the continent (IUCN, 2022). (Box 9 provides additional details about A-PACT.)

Box 8. The African Elephant Fund

The African Elephant Fund is designed to help implement the African Elephant Action Plan. The plan and fund emerged from actions at the 15th meeting of the Conference of Parties to CITES in Doha in 2010. AEF operates as a revolving fund offering small grants to African elephant range states.

Examples of funded activities include:

- Enhanced enforcement of wildlife laws in Nigeria leading to 141 arrests
- Training more than 300 enforcement officers in Ghana and Ethiopia on anti-poaching activity, and identifying, collecting and handling wildlife products
- Conducting first aerial elephant survey in northwest Namibia in more than 20 years
- Erection of more than 12 km of solar powered fencing in Malawi to reduce human-elephant conflict and protect elephants

In recent years, grants were awarded to organizations in Chad, Niger, Togo, Gabon, Ghana, Nigeria, Malawi, Kenya, South Africa, Uganda and Zimbabwe. Since the inception of the AEF, 52 projects have been funded and completed, mostly in the US\$25,000-100,000 range.

Source: UNEP, n.d.; African Elephant Fund, 2022.

Box 9. A Pan-African Conservation Trust Fund (A-PACT)

The number of protected areas in Africa has increased tenfold over the past decades without a commensurate increase in government budget allocations. As a result, protected area management agencies struggle to fully implement their management plans (Rylance et al., 2017). The closing statement of the Africa Protected Areas Congress, “Kigali Call to Action for People and Nature,” noted that Africa’s protected and conserved areas are “grossly underfunded.” The statement called for a dramatic increase in conservation fundraising and investment in innovative ways, including A Pan-African Conservation Trust fund.

Based on estimated management costs of US\$3801000 per square km to efficiently managed protected areas, the projected financing requirements for Africa’s protected areas are US\$2.6- 7 billion per year. Most protected areas have budgets less than US\$50 per square km. Pulling together financing on a park-by-park basis, through tourism revenues and payments for ecosystem services is difficult, costly and subject to external shocks, which was dramatically illustrated by COVID-19-induced tourism losses.

While still under development, A-PACT is expected to have three components: (1) an endowment to provide funding for operational and recurring costs for those areas most in need, (2) a revolving fund that helps protected and conserved areas access carbon and biodiversity markets, and (3) an investment vehicle that mobilizes private capital for conservation and development activities in and around the areas.

Source: A-PACT, 2022.

5. Applying Financial Mechanisms to Conservation of African Elephants

In this section, we discuss the potential applicability of different financial mechanisms to elephant conservation activities. Each approach has advantages and disadvantages that are discussed below. (Table 3 provides a summary.)

Payments for ecosystem services could be readily adapted to provide funding for elephant conservation using a performance payment approach. As with other wildlife PES programs,

performance could be measured with wildlife sightings, remote sensing, and other measures of elephant activity. If financed with a grant, philanthropy, or government allocation, then sustainability of the financial flows may be challenging. On the other hand, if a Conservation Trust Fund provides funding or a government agency makes a long-term commitment, this could be a sustainable approach to financing elephant conservation. Another challenge of effective PES schemes is the need for strong institutions to deliver regular payments to individuals or communities so this needs to be addressed as well. Emerging financial technology may help solve this challenge.

Table 3. Comparing Conservation Mechanisms for Elephant Conservation

Finance Mechanism	Pros	Cons
Payments for Ecosystem Services	Tied to performance Incentivizes local communities	Lack of financial sustainability Needs strong institutions for delivery
Carbon Offset Credits	Large potential capital flows Well established global market for carbon	Need for elaborate performance monitoring May be challenging to apply to savanna elephant habitat
Green Bonds/Wildlife Conservation Bonds	Predictable financial flows Could be scaled to cover multiple protected areas and countries	Complexity and cost of design and implementation Requires extensive measures to reduce risk for investors Uncertain market demand for biodiversity investments
Debt-for-Nature Swaps	Can imbed elephant conservation in overall debt relief and pursuit of climate and biodiversity goals Establishes trust funds to provide long-term, financial flows for conservation	If small scale and project based, there are high transaction costs May be difficult to find willing buyers Debt relief is limited to a small number of countries
Conservation Trust Funds	Sustainable financial flows Can be scaled to cover multiple protected areas and countries	Requires large infusions of capital investment Subject to capital market fluctuations

Carbon Offset Credits have the potential for tapping into the large global capital flows that have emerged in the climate finance arena. Carbon credits require a standard, such as Gold Standard or Terra, to allow monitoring of changes in carbon stocks over time. Also, there are “carbon plus” transactions that add on a biodiversity monitoring component. There are a number of REDD+ projects that include elephant habitat and are providing support for conservation activity. One example is the Kariba REDD+ Project in Zimbabwe that protects almost 785,000 hectares connecting four national parks and eight safari reserves. It provides a large biodiversity corridor that protects a number of threatened species including elephants and lions (South Pole, n.d.).

Since forest elephants are believed to increase forest carbon where they live, this may create a promising opportunity for countries with forest elephant populations to enter into the exchange of “premium” carbon credits. Box 10 describes an innovative proposal to use blockchain technology to sell carbon credits paired with elephant conservation to corporations, and use the proceeds to pay communities for their conservation efforts.

Wildlife Conservation Bonds. The issuance of a Wildlife Conservation Bond in 2022 by the World Bank has shown that it is possible to attract private investors to wildlife conservation, if there is a backer with strong credit worthiness, a well-defined performance measure, and an entity willing to provide a flow of returns to investors when the bond becomes due. Efforts are underway to develop a bond to finance tiger conservation in Asia. This raises a potential opportunity for African range states to pursue similar options for elephant conservation by partnering with investors, development banks, and NGOs. Developing an elephant bond would be costly and would require a blended finance approach. Planning would be led by Ministries of Finance and would rely on several of the enabling conditions discussed in the next section, including measures to reduce risk to investors.

Debt-for-Nature Swaps could also provide funding for elephant and other wildlife conservation at a time when many African governments face crushing levels of debt. A new generation of debt for climate and nature swaps has the potential to provide debt relief as well as space for greater government spending on climate and biodiversity activities. This approach has the advantage of bringing finance and natural resource agencies to the table and has the potential to ensure long-term financing that some other mechanisms lack. The downside is that swaps can have high transaction costs, including the costs of legal, environmental, and financial expertise. These costs can be spread out with a programmatic, rather than project-specific approach, and lower the costs proportionate to total financing. An additional downside of this approach is that debt relief is limited to a small number of countries, and even then, it may be difficult to find buyers for the discounted debt.

Conservation Trust Funds have the virtue of providing sustainable and predictable financing for wildlife conservation activities. They have a long track record and many have performed well. They also can be operated at a scale that allows financing conservation activities in multiple protected areas, outside protected areas, and even across countries. The nascent A-PACT fund has potential to support elephant conservation in multiple range states. At this point, it is still in the early stage of raising large amounts of capital, but wildlife authorities could begin to position themselves to apply to this fund.

Box 10. Creating a Market to Connect Buyers and Sellers of Biodiversity Credits

Rebalance Earth is a project to develop technology that will create markets to raise money from corporations to fund biodiversity protection and community development. They plan to do this by creating a market for biodiversity conservation using blockchain technology, the Internet of Things (IoT), and artificial intelligence (AI). Their pilot project focuses on the carbon services provided by forest elephants. A combination of IoT sensors in the forest and AI is used to track each elephant. The information gathered is turned into a digital token that is on a public ledger where investors have full traceability and transparency of how the funds are used. Companies that want to obtain premium carbon offset credits will buy the tokens, and the funds raised from the sale of tokens will go to fund ranger activity, micro-investments, and job creation. Rebalance Earth plans to offer its first sale of biodiversity tokens in 2023.

Source: Kotseva. 2022.

6. Creating an Enabling Environment

Expansion of revenue generation opportunities for elephant and other wildlife conservation will require strong partnerships and favorable conditions for donors and investors (IUCN, 2020). African elephant range states can take several actions to facilitate new sources of revenue to support conservation.

- **Increase awareness of economic returns to conservation investments.** Many in government and the conservation community approach conservation as a cost that must be covered by scraping together limited funds, as opposed to an attractive

investment opportunity. It is important to convey the notion that investments in conservation can lead to significant returns in the form of carbon payments, tourism revenue, jobs, and foreign exchange earnings.

- **Involve local communities in project planning and implementation.** Local communities that share space with African elephants are on the front line of elephant management and conservation. These communities bear high costs from crop damages and threats to human life, so their involvement in planning and implementing activities to promote human-elephant co-existence is crucial to lasting success. In a number of range states, local communities have either land rights or use rights that must be recognized in any long-term financing agreements.
- **Improve intersectoral coordination.** Biodiversity conservation is an activity that requires cooperation on the part of multiple government agencies – natural resources, tourism, agriculture, finance, and others. Likewise, intersectoral cooperation is needed to implement any of the highlighted finance mechanisms. Mainstreaming biodiversity conservation can be carried out at the national level using National Biodiversity Action Plans and National Biodiversity Finance Plans (Deutz, et al, 2020). Integrating biodiversity concerns across government sectors as well as the private sector and civil society also can help make a business case for investing in nature.
- **Set policies and regulations to accelerate private sector investment.** Changes in policies and regulations may be needed to de-risk and incentivize private sector investment. This includes tax breaks, long-term tourism concessions, and government-backed guarantees. This also includes a regulatory environment that will encourage growth of the wildlife economy.
- **Enhance monitoring systems for tracking conservation performance and changes in carbon stocks.** Potential investors and donors want to see clear evidence of returns to investment. This requires developing and implementing low-cost monitoring of wildlife populations, surrounding socioeconomic conditions, and changes in forest quality and carbon stocks. The costs of monitoring can be lessened by using new technologies including remote sensing and on-the-ground sensors. Performance indicators could include the number of elephant sightings in particular areas, the number of enforcement patrols, and reduction in crop losses from elephants for households living near elephant herds.
- **Take advantage of catalytic international organizations.** International agencies, such as UNDP, UNEP, IUCN and World Bank provide technical assistance and information exchange regarding biodiversity finance. BIOFIN is working with governments and

other stakeholders to develop National Biodiversity Finance plans and to establish new financing mechanisms in a number of countries including Botswana, Mozambique, Rwanda, Seychelles, South Africa, Uganda, and Zambia.

- **Mobilize domestic finance for conservation.** It is important to not overlook opportunities to expand domestic sources of conservation finance, whether it be increasing or restoring government budget allocations, ensuring that protected area fees are dedicated to conservation uses, or seeking support from tourism and other businesses that depend on sustainable landscapes. Mobilizing more domestic support for conservation will reassure potential external investors that conservation is valued and treated seriously by decision makers.

7. Summary and Next Steps

Once common throughout the continent, elephant numbers fell precipitously in the 19th and 20th century, mostly due to habitat loss and the ivory trade. More recently, elephant losses have slowed, but illegal hunting remains high in some areas and points to the need for greater enforcement efforts. At the same time, burgeoning elephant populations in other locations have intensified human-elephant conflict, and heightened the need to actively manage elephant populations and their impacts on local communities and habitats.

Clearly, additional conservation funding is urgently needed. Government budget allocations for conservation have suffered in the face of the pandemic and recent inflation. As discussed, there are a number of mechanisms to mobilize additional financial resources for elephant conservation and community benefit sharing. There are likely other mechanisms that should be explored, given the changing conservation policy environment at the international level and the ongoing transformation of global financial markets.

There is no single financial mechanism that will fill all the conservation funding gaps, so a combination of innovative public and private approaches will need consideration. This will require a concerted effort to develop and pursue a multi-pronged approach and take advantage of the growing global momentum toward improving financial flows for biodiversity protection. An important next step will be to assess both the conservation funding needs in the range states as well as the potential for different mechanisms in combination to address those needs.

To capitalize on these opportunities, it will be necessary to address enabling conditions, including better monitoring, evaluation, and transparency, as well as working with local communities, to encourage greater financial flows. This will also require a multisectoral approach involving different agencies, and a collaborative approach involving government, NGOs, and the private sector in each country. This is an opportune time to set the stage for the African elephant range states to more fully engage as business partners with potential public and private investors.

Glossary

Biodiversity finance contributes to activities that conserve, restore, or avoid a negative footprint on biodiversity and ecosystem services. Biodiversity finance and conservation finance can be used interchangeably (BIOFIN).

Biodiversity Finance Initiative (BIOFIN) is a global platform led by UNDP focused on raising and managing capital and using financial and economic mechanisms to support sustainable biodiversity management. Its aim is leveraging and effectively managing economic incentives, policies, and capital to achieve the long-term well-being of nature and our society (UNDP).

Carbon credits or carbon offset credits are quantified reductions in emissions of carbon dioxide or greenhouse gases made in order to compensate for or to offset an emission made elsewhere, and are traded in carbon markets. The tradeable units are quantified in tons of greenhouse gas emission, usually specified in CO₂ equivalents (UNEP).

Blended finance is the use of catalytic capital from public or philanthropic sources to increase private sector investment in sustainable development. More specifically, it is the use of concessional donor funds to mitigate specific investment risks and help rebalance risk-reward profiles of pioneering, high-impact investments so that they have the potential to become commercially viable over time (IFC).

Climate finance aims at reducing emissions, enhancing sinks of greenhouse gases and reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems in the face of negative climate change impacts (BIOFIN).

Conservation finance – see Biodiversity finance.

Debt-for-Nature Swaps is an arrangement by which an indebted developing country establishes local currency funds to be used to finance a conservation program in exchange for cancellation of a portion of its foreign debt (OECD).

Debt-for-Climate-and-Nature Swaps are exchanges whereby a creditor allows a country's debt to be reduced by some form of write-off or a lower interest rate, and the money is used to invest in poverty-reducing climate resilience, climate emissions mitigation or biodiversity conservation initiatives (IIED).

Enabling conditions are necessary conditions for a program or project to move forward. In the conservation finance context, these are the policy and regulatory changes, and

development of performance tracking measures, needed to attract investment to conservation projects and activities.

Finance vs. Funding. The term “funding” tends to refer mostly to the flow of capital to projects or programs rather than private investments. For example, an NGO is more likely to seek “funding” rather than “finance” and an investment bank will provide finance rather than funding to a company (Meyers, et al., 2020).

Finance/financial mechanisms are tools used to mobilize, collect, manage and disburse funding. This term is used interchangeably with “tools,” “mechanisms,” and “instruments” (BIOFIN).

Green Bond is a type of financial instrument that is issued to raise capital to support climate-related or environmental projects and provides investors with regular or fixed income payments (World Bank).

Payments for Ecosystem Services (PES) is the name given to a variety of arrangements through which the beneficiaries of environmental services, from watershed protection and forest conservation to carbon sequestration and landscape beauty, reward those whose lands provide these services with subsidies or market payments (WWF).

REDD+ is a framework created by the United Nations Framework Convention on Climate Change Conference of Parties to guide activities in the forest sector that **reduces emissions from deforestation and forest degradation**, as well as the sustainable management of forests and the conservation and enhancement of forest carbon stocks in developing countries (UNFCCC).

Sustainable finance is the process of taking due account of environmental, social and governance (ESG) considerations when making investment decisions in the financial sector, leading to increased longer-term investments into sustainable economic activities and projects (World Bank).

Wildlife economy is the businesses and economic activities that either directly depend on wildlife (both plants and animals, marine and terrestrial) or contribute to wildlife conservation through their activities (African Leadership University).

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References

- Advani, NK, 2014. African elephant: WWF Wildlife and Climate Change Series. World Wildlife Fund, Washington, D.C.
- African Elephant Fund. (2022). African Elephant Fund Progress Report. United Nations Environment Program, Nairobi.
- Amundi Asset Management and International Finance Corporation. (2021). Emerging Market Green Bonds Report 2020. International Finance Corporation, Washington.
- A-PACT. (2022). A Pan-African Conservation Trust (A-PACT): Sustainable Financing for All of Africa's Protected and Conserved Areas. Concept note.
- Arlaud, M., Cumming, T., Dickie, I., Flores, M., den Heuvel, O.V., Meyers, D., Riva, M., Seidl, A. and Trinidad, A. (2018). The biodiversity finance initiative: an approach to identify and implement biodiversity-centered finance solutions for sustainable development. *Towards a Sustainable Bioeconomy: Principles, Challenges and Perspectives*, (pp. 77-98). Springer.
- Atmadja, S. S., Duchelle, A. E., De Sy, V., Selviana, V., Komalasari, M., Sills, E. O., & Angelsen, A. (2022). How do REDD+ projects contribute to the goals of the Paris Agreement? *Environmental Research Letters*, 17(4), 044038.
- Berzaghi, F., Longo, M., Ciais, P., Blake, S., Bretagnolle, F., Vieira, S., Scaranello, M., Scarascia-Mugnozza, G. and Doughty, C.E. (2019). Carbon stocks in central African forests enhanced by elephant disturbance. *Nature Geoscience*, 12(9), 725-729.
- Berzaghi, F., Chami, R., Cosimano, T., & Fullenkamp, C. (2022). Financing conservation by valuing carbon services produced by wild animals. *Proceedings of the National Academy of Sciences*, 119(22), e2120426119.
- Beaune, D., Fruth, B., Bollache, L., Hohmann, G., & Bretagnolle, F. (2013). Doom of the elephant-dependent trees in a Congo tropical forest. *Forest Ecology and Management*, 295, 109-117.
- BIOFIN. (2020). Understanding mainstreaming as a finance solution: Survey results from 22 BIOFIN countries. The Biodiversity Finance Initiative, UNDP.
- Blended Finance Task Force. (n.d.). Seychelles Debt Swap. (Accessed Sept 8, 2022)

Cadman, T., Maraseni, T., Ma, H. O., & Lopez-Casero, F. (2017). Five years of REDD+ governance: The use of market mechanisms as a response to anthropogenic climate change. *Forest Policy and Economics*, 79, 8-16.

CCFN. (n.d.) Innovative Conservation in the Sobbe Conservancy – Wildlife Credits. (Accessed August 30, 2022)

CITES. (2010). African Elephant Management Plan. Fifteenth meeting of the Conference of the Parties to CITES, Geneva, Switzerland.

CITES. (2019a). Decisions of the Conference of the Parties to CITES, 18.4-18.11 - Access to Funding. Eighteenth meeting of the Conference of the Parties to CITES, Geneva, Switzerland.

CITES (2019b). Strategic Vision: 2021-2030, Eighteenth meeting of the Conference of the Parties to CITES, Geneva, Switzerland.

CITES. (2022). Report on Monitoring the Illegal Killing of Elephants (MIKE). Nineteenth meeting of the Conference of the Parties, Panama City, Panama, November 2022.

Convention on Biological Diversity. (n.d.) Text of the Convention. (Accessed August 8, 2022).

Cumming, T., Seidl, A., Emerton, L., Spenceley, A., Kroner, R. G., Uwineza, Y., & van Zyl, H. (2021). Building sustainable finance for resilient protected and conserved areas: Lessons from COVID-19. *Parks*, 27, 149-160.

Dasgupta, P. (2021). The economics of biodiversity: the Dasgupta review. Abridged version. Hm Treasury, London.

Davies, R., Engle, H., Käppeli, J. and Wintner, T. (2016). Taking conservation finance to scale. *McKinsey & Company*.

Deutz, A., Heal, G.M., Niu, R., Swanson, E., Townshend, T., Zhu, L., Delmar, A., Meghji, A., Sethi, S.A. and Tobin-de la Puente, J. (2020). Financing nature: Closing the global biodiversity financing gap. The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability.

Dinerstein, E., Varma, K., Wikramanayake, E., Powell, G., Lumpkin, S., Naidoo, R., Korchinsky, M., Del Valle, C., Lohani, S., Seidensticker, J. and Joldersma, D. (2013). Enhancing conservation, ecosystem services, and local livelihoods through a wildlife premium mechanism. *Conservation Biology*, 27(1), 14-23.

Dominguez, A.B. (2022). A new lifeline for wildlife conservation finance. Global Environment Facility, Washington. Blog, March 23.

FAPBM. (n.d.). Madagascar's Protected Areas and Biodiversity Fund. (Accessed: August 15, 2022).

Gaodirelwe, I., Motsholapheko, M. R., & Masunga, G. S. (2020). Community perceptions of wildlife management strategies and subsistence poaching in the Okavango Delta, Botswana. *Human Dimensions of Wildlife*, 25(3), 232-249.

Hicox, L. (2020). The ecological role of elephants: shaping the land and lending a hand. *The Journal of African Elephants*, January 6.

IUCN. (2021). African elephant species now Endangered and Critically Endangered - IUCN Red List. International Union for the Conservation of Nature, Gland, Switzerland.

IUCN. (2020). Closing the gap. The financing and resourcing of protected and conserved areas in Eastern and Southern Africa. IUCN ESARO; BIOPAMA, Nairobi, Kenya.

IUCN. (2022). IUCN Africa Protected Areas Congress culminates in Kigali Call to Action. International Union for the Conservation of Nature, Gland, Switzerland.

Katjingsiua, I. and Mauney, G. (2020). Wildlife Credits: Innovation in conservation by and for Namibians. Conservation Namibia.

King, Nicholas. (2021). Conservation Finance Options to Support African Post-2020 Biodiversity Priorities. *South African Institute of International Affairs*. Occasional Paper 325.

Kotseva, P. (2022). How Blockchain Protects the Mega Gardeners of the African Rainforest. *The Recursive*, June 17. *The Recursive*, June 17.

Kramer, R. A., & Sharma, N. (1997). Tropical forest biodiversity protection: who pays and why. In *Last stand: protected areas and the defense of tropical biodiversity* (pp.162-186). Oxford.

Kuenzi, C., & McNeely, J. (2008). Nature-based tourism. In *Global Risk Governance* (pp. 155-178). Springer, Dordrecht.

Lindsey, P., Allan, J., Brehony, P., Dickman, A., Robson, A., Begg, C., Bhammar, H., Blanken, L., Breuer, T., Fitzgerald, K. and Flyman, M. (2020). Conserving Africa's wildlife and wildlands through the COVID-19 crisis and beyond. *Nature Ecology & Evolution*, 4(10), 1300-1310.

McFarland, B. J. (2018). The Origins and History of Conservation Finance. In *Conservation of Tropical Rainforests* (pp. 121-131). Palgrave Macmillan.

Meyers, D., Alliance, C.F., Bohorquez, J., Cumming, B.F.I.B., Emerton, L., Riva, M., Fund, U.J.S. and Victurine, R., (2020). Conservation finance: a framework. *Conservation Finance Alliance*, 1-45.

Miranda Montero, J. J., Wright, E. M., & Khan, M. N. (2019). Illegal logging, fishing, and wildlife trade: The costs and how to combat it. Global Wildlife Program, World Bank, Washington.

Muboko, N., Muposhi, V., Tarakini, T., Gandiwa, E., Vengesayi, S., & Makuwe, E. (2014). Cyanide poisoning and African elephant mortality in Hwange National Park, Zimbabwe: a preliminary assessment. *Pachyderm*, 55, 92-94.

Mwakiwa, E., Hearne, J.W., Stigter, J.D., De Boer, W.F., Henley, M., Slotow, R., Van Langevelde, F., Peel, M., Grant, C.C. and Prins, H.H. (2016). Optimization of net returns from wildlife consumptive and non-consumptive uses by game reserve management. *Environmental Conservation*, 43(2), 128-139.

Naidoo, R., Weaver, L. C., Diggle, R. W., Matongo, G., Stuart-Hill, G., and Thouless, C. (2016). Complementary benefits of tourism and hunting to communal conservancies in Namibia. *Conservation Biology*, 30(3), 628-638.

Naidoo, R., Fisher, B., Manica, A., & Balmford, A. (2016). Estimating economic losses to tourism in Africa from the illegal killing of elephants. *Nature Communications*, 7, 1-9.

Osano, P.M., Said, M.Y., de Leeuw, J., Ndiwa, N., Kaelo, D., Schomers, S., Birner, R. and Ogutu, J.O. (2013). Why keep lions instead of livestock? Assessing wildlife tourism-based payment for ecosystem services involving herders in the Maasai Mara, Kenya. *Natural Resources Forum*, 37, 242-256.

Pattanayak, S., Wunder, S., & Ferraro, P. (2010). Show Me the Money: Do Payments Supply Environmental Services in Developing Countries? *Review of Environmental Economics and Policy*, 4(2), 254-274.

Pearce, F. (2022). In Tanzania, Carbon Offsets Preserve Forests and a Way of Life. *Yale Environment* 360. May 26.

- Rakotonarivo, O.S., Jones, I.L., Bell, A., Duthie, A.B., Cusack, J., Minderman, J., Hogan, J., Hodgson, I. and Bunnefeld, N. (2021). Experimental evidence for conservation conflict interventions: The importance of financial payments, community trust and equity attitudes. *People and Nature*, 3(1), 162-175.
- Roe, D., Booker, F., Wilson-Holt, O., & Cooney, R. (2020). Diversifying local livelihoods while sustaining wildlife. Luc Hoffman Institute.
- Rylance, A., Snyman, S., & Spenceley, A. (2017). The contribution of tourism revenue to financing protected area management in Southern Africa. *Tourism Review International*, 21(2), 139-149.
- Salzman, J., Bennett, G., Carroll, N., Goldstein, A., & Jenkins, M. (2018). The global status and trends of Payments for Ecosystem Services. *Nature Sustainability*, 1(3), 136-144.
- Shaffer, L. J., Khadka, K. K., Van Den Hoek, J., & Naithani, K. J. (2019). Human-elephant conflict: A review of current management strategies and future directions. *Frontiers in Ecology and Evolution*, 6, 235.
- Snyman, S., Sumba, D., Vorhies, F., Gitari, E., Ender, C., Ahenkan, A., Pambo, A.F.K. and Natacha, O.A.. (2021a). State of the Wildlife Economy in Africa. African Leadership University, School of Wildlife Resources, Kigali, Rwanda.
- Snyman, S., Nelson, F., Sumba, D., Vorhies, F., & Ender, C. (2021b). Roadmap for Africa's Wildlife Economy. A summary of State of the Wildlife Economy in Africa. African Leadership University, School of Wildlife Conservation, Kigali, Rwanda.
- South Pole. (n.d.). Kariba Forest Protection. (Accessed 9/20/22).
- Steele, P., & Patel, S. (2020). Tackling the triple crisis. Using debt swaps to address debt, climate and nature loss post-COVID-19. International Institute for Environment and Development, London
- Stolton, S. and Dudley, N. (2019). The New Lion Economy. Unlocking the value of lions and their landscapes. Equilibrium Research, Bristol, UK.
- Thouless, C.R., H.T. Dublin, J.J. Blanc, D.P. Skinner, T.E. Daniel, R.D. Taylor, F. Maisels, H. L. Frederick & P. Bouché (2016). African Elephant Status Report 2016: an update from the African Elephant Database. Occasional Paper Series of the IUCN Species Survival Commission, No. 60 IUCN / SSC Africa Elephant Specialist Group. IUCN, Gland, Switzerland.

Tobin-de la Puente, J., & Mitchell, A. W. (2021). The little book of investing in nature. Global Canopy: Oxford.

United Nations (n.d.). Sustainable Development Goals. Available at <https://sdgs.un.org/goals> [Accessed 8 August, 2022].

UNEP. (n.d.). African Elephant Fund. United Nations Environment Program. (Accessed 3 September, 2022)

UNDP. (2018). The BIOFIN Workbook 2018: Finance for Nature. The Biodiversity Finance Initiative, United Nations Development Program.

UNDP. (2020). Moving mountains: Unlocking private capital for biodiversity and ecosystems. The Biodiversity Finance Initiative, United Nations Development Programme.

UNFCCC. (n.d.). What is REDD+? UNFCCC Secretariat, Bonn. (Accessed September 13, 2022).

USAID. (2018). Experiences and lessons learned in payments for ecosystem services (PES) in East Africa. United States Agency for International Development, Washington.

Watson, C.,Schalatek, L., Evequoz, A. (2022) Climate Finance Thematic Briefing: REDD+ Finance. Climate Funds Update, Heinrich Boll Stiftung, Washington.

Webb, G. J. (2002). Conservation and sustainable use of wildlife-an evolving concept. *Pacific Conservation Biology*, 8(1), 12-26.

World Bank. (2022). Case Study: Wildlife Conservation Bond mobilizes private capital to protect critically endangered rhinos. World Bank Treasury, Washington.

Wunder, S., Duchelle, A.E., Sassi, C.D., Sills, E.O., Simonet, G. and Sunderlin, W.D. (2020). REDD+ in theory and practice: how lessons from local projects can inform jurisdictional approaches. *Frontiers in Forests and Global Change*, 3, 11-17.

WWF. (2009). Guide to Conservation Finance. Worldwide Fund for Nature, Gland, Switzerland.