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OF WILD FAUNA AND FLORA

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MECHANISMS FOR FUNDING ELEPHANT CONSERVATION FOLLOWING THE NON-COMMERCIAL DISPOSAL OF IVORY STOCKPILES

1. This information document is submitted by Kenya in relation to agenda item 66.2.2.*

* *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

Introduction

Kenya has submitted CoP19 Doc. 66.2.2. in recognition of the fact that for years, debate over the resumption of ivory trade has divided elephant range States and consumed significant time at CITES CoPs. CoP 19 Doc 66.2.2 seeks to reward elephant range States not with trade but with financing upon destruction of their stocks, thus taking the issue of ivory trade off the table and uniting elephant range States in finding solutions for the conservation of and reduction of conflict with elephants. Ivory trade not only stimulates illegal trade and poaching, but it produces meagre economic resources that are insufficient to finance conservation efforts in the long term. Indefinitely storing ivory stockpiles, on the other hand, endangers elephant populations by feeding expectations that ivory trade will resume in the future. It is also costly and has resulted in the leakage of ivory from stocks onto the black market. Given the recognized need for financing coupled with the risks of stockpile maintenance, the destruction of ivory stockpiles, following strict disclosure, transparency, and testing requirements, should be a component of elephant management.

Multiple multilateral financial mechanisms exist and may provide an institutional base that can offer the necessary resources for long-term funding and compensate conservation efforts. These financial options are not risk-free and require exploration. The challenges presented by elephant conservation are just part of the escalating biodiversity crisis, necessitating serious engagement by the international community, including donor countries and international financial institutions, in devising new ways to secure and scale up much needed resources to fund biodiversity.

Two important caveats should be considered by elephant range States when searching for financial sources for conservation. The first one is systemic risk. The growth of debt ratios, that consolidated as a trend in the international economic system in the last two decades, indicates a highly uncertain environment for engaging in long term financial committments.

During the financial crisis of 2008, important components of the financial sector collapsed and had to be rescued with public money (especially in developed countries). Government debt went from 64% of global GDP in 2008 to 81% in 2017; by 2020, government debt in the Organisation for Economic Co-operation and Development (OECD) reached 130% of GDP.[1] Rising inflation and global instability will increase systemic risks and therefore debt costs to emerging markets. We have already observed increased interest rates across all important markets, signalling that the period of low interest rates prevailing since the 2008 crisis has come to an end and we may be entering a long-term period of increasingly expensive credit.

The second caveat is the evaluation of market risk of each financial instrument in relation to each country's own capabilities and constraints. Funding options must be carefully assessed in terms of the current economic positions of receiving countries. There is large variation in the levels of fiscal and financial vulnerability among African elephant range States, which means not only that they differ in their financial ratings (and therefore the rates they can reasonably bargain for in capital markets), but they also differ in variables that are key to financial resilience such as fiscal pressure (i.e., the share of fiscal income in GDP), debt exposure, and exports to name a few. Moreover, some instruments, particularly those influenced by secondary markets, are prone to different levels of turbulence and speculative behavior, and some should be deemed too risky beyond certain thresholds.

In general, debt has increased in African countries since 2008, driven by the cumulative depreciation of Exchange rates, growing interest payments, and high primary deficits.[2] These conditions have remained structural to economies and will not disappear in the short or medium term. Even before the crisis caused by the pandemic, the region was approaching a souvereign debt crisis.[3] The African Development Bank has just recently called on countries in the region to pay special attention to the changing composition of African debt

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[1] https://data.oecd.org/gga/general-government-debt.htm

[2] *ADBG (2022), African Economic Outlook 2021, African Development Bank Group, p. 55.*

[3] *Coulibaly, B.S., Gandhi, D. and L. Senbet (2019), Is sub-Saharan Africa facing another systemic sovereign crisis?, Policy Brief, Africa Growth Initiative at Brookings, April.*

and its impacts on debt vulnerability.[4] Likewise, countries in the Asian elephant range also face rising debt levels to the point of compromising futher growth.[5] All this calls for the utmost precaution when assessing financial instruments and the sustainability of acquiring new debt.

Nevertheless, there are funding options worth exploring. This document therefore aims to contribute to the discussion of funding options for elephant conservation centred around a precautionary policy of supply control through ivory stockpile destruction and exploration of the conditions and risks of alternative finance sources for low-risk conservation policy options. This mechanism (as it will be referred to herein) is detailed in CoP19 Doc 66.2.2 and could potentially be funded using one or in some cases more options discussed below. The intention is to expand on options suggested in CoP19 Doc. 66.2.2 and to consider additional options but not to exhaustively explore all potential options.

Options for financing non-commercial disposal of ivory stocks

The non-commercial disposal of ivory stocks is a policy consistent with a precautionary approach to elephant conservation, which is increasingly being used by both elephant range and non-range States.[6] Maintaining this policy option incurs significant costs for range countries already facing challenges in maintaining a constant flow of public resources for conservation. Most conservation management agencies in lower income countries are caught in a "policy choice dilemma" in which, despite the higher long-term value of a precautionary policy option like destruction, a higher risk option such as an ivory sale may be chosen because it delivers immediate results and the agent making the choice cannot afford to lose the smaller gain.[7] An external source of finance can shift the equation by enabling and sustaining a higher investment trajectory, so that a strategy based on precaution prevails over one that takes very high risks to obtain short-term gains.

In the past, the option of destroying stockpiles for compensation was deemed unrealistic "because no source of long-term compensation has been identified," although opportunities for specific bilateral agreements were noted.[8] Today, the harsh economic conditions facing many elephant range States, and the need for funds to maintain conservation efforts, call for a further review of this option with the aim of finding a more permanent solution to the dual problem of financing elephant conservation and addressing growing ivory stockpiles. A range of funding mechanisms oriented to finance biodiversity conservation exist offering possibilities to source long-term compensation. Additional information on funding options can be found through UNEP's Biodiversity Finance Initiative[9] that details an array of funding options not covered here, such as tourism fees.

Global financing for biodiversity conservation

Looking at the broader picture first, the major source of funding for biodiversity conservation is of a public nature. According to a recent estimate,[10] public sources are responsible for 80-85% of the total finance for biodiversity conservation with national governments providing 54-60% (between $75-78 billion USD, see Table 1 below). Also included in public investments are natural infrastructure (mostly watershed conservation

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[4] *ADBG (2022), op. cit. pp. 49-56.*

[5] *Lau, E., Moll de Alba, J., & Liew, K.-H. (2022). Debt and economic growth in Asian developing countries. Economic Analysis and Policy, 76, 599–612. https://doi.org/https://doi.org/10.1016/j.eap.2022.09.011; Sri Lanka fell into default in 2002 (https://www.bloomberg.com/news/articles/2022-05-19/sri-lanka-enters-default-and-warns-inflation-may-surge-to-40). Government debt to GDP ratios have currently reached high levels in India (89.3%), Malaysia (63.3%), and Thailand (59.6%), Myanmar (42%), and Nepal (40.5%) (https://tradingeconomics.com/country-list/government-debt-to-gdp?continent=asia).*

[6] *See Cop19 Doc 62.2.2 submitted by Kenya.*

[7] *B. Arthur (1988), Self-reinforcing mechanisms in economics. In The Economy as an Evolving Complex System. Santa Fe Institute Studies in the Sciences of Complexity, Addison-Wesley Publishing Company.*

[8] *CITES Doc. 10.46 Annex, p. 683 https://cites.org/sites/default/files/eng/cop/10/doc/E10-44to46.pdf.*

[9] *https://www.biofin.org/finance-solutions.*

[10] *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.*

programs, amounting to $27 billion USD) and official development assistance ($4-9 billion USD). Finance derived from public-private partnerships makes up 11.2% ($11-16 billion USD annually). Strictly private sources provide 8.4% or $8-12 billion USD. This falls far short of actual financing requirements, as the gap between these investments and what is needed has been estimated at $598–824 billion USD per year.[11]

Table 1

Finance for biodiversity (billion USD)

	low	high	%	
Total	**125**	**143**	**100.0**	
Governmental budgets and taxation	75	78	54.5	
Natural infrastructure	27	27	18.9	80.4
Official development assistance (ODA)	4	10	7.0	
Biodiversity offsets	6	9	6.3	
Green financial products	4	6	4.2	11.2
Nature-based solutions and carbon markets	1	1	0.7	
Sustainable supply chains	6	8	5.6	8.4
Philanthropy and conservation NGOs	2	4	2.8	

Source: Deutz, et al. 2020.

The estimates of investment in conserving biodiversity contrast strongly with estimates of the value of "environmental services" provided by healthy ecosystems, which are at risk of loss.

A recent study by the World Bank estimated that biodiversity loss measured in terms of GDP could amount to $2.7 trillion USD per year by 2030.[12] Valuation methods underlying these estimates are not complete and can only be considered as approximations to real values, but they show the difference between investment and potential losses and convincingly illustrate a significant gap between what is needed and what is being done.

Two consecutive supply-side crises since 2020 (COVID-19 lock-downs and the conflict in Ukraine) have exposed government budgets to increased financial fragility, national income reduction, increased health and economic support expenditure, price volatility and augmented uncertainty impacting governments' policy space. The prospects for economic growth in the years ahead are not optimistic, due to inflation and uncertainty.[13] Despite this, there are reasons to believe that public funds will most likely continue to be, at the global level, the most important source of financing for biodiversity. This is different for many developing countries, which due to budgetary restrictions tend to rely more strongly on development assistance for financing conservation. Since natural infrastructure and conservation are public goods, most investment tends to be of a public nature in developed countries receiving a reserved share of public budgets. Since conservation encompasses values that are not easily valued or traded by markets, private funding sources tend to be scarcer.

There are no official estimates of the budget target required for funding conservation of elephant populations in range States. Based on a rule-of-thumb of $200 USD per square kilometer to effectively manage protected areas, a raw estimate indicates that the annual investment for conservation required for

[11] *Ibid., p. 15.*

[12] *Johnson, J.A., G. Ruta, U. Baldos, R. Cervigni, S. Chonabayashi, E. Corong, O. Gavryliuk, J. Gerber, T. Hertel, C. Nootenboom, S. Polasky (2021), The Economic Case for Nature: A Global Earth-Economy Model to Assess Development Policy Pathways. World Bank, Washington, DC. https://openknowledge.worldbank.org/handle/10986/35882 License: CC BY 3.0 IGO."*

[13] *IMF, World Economic Outlook, October, 2022, https://www.imf.org/en/Publications/WEO/Issues/2022/10/11/world-economic-outlook-october-2022.*

the whole African elephant range would be around $626.4 million USD (see Table 2 below).[14] For the Asian elephant range, it would be about $88 million USD (see table 3 below). In what follows, some of the mechanisms with potential for financing elephant conservation are explored.[15]

i. Global Environment Facility

A possible finance option for non-commercial ivory disposal is the Global Environment Facility (GEF). Although CITES is not included among the five Conventions for which the GEF serves as a financial mechanism, that does not appear to foreclose the GEF as a financing mechanism. Its mandate has been extended to non-GEF global environmental frameworks (like the Montreal Protocol),[16] and includes conservation, which aligns with ivory disposal and elephant conservation. Access to funding by the GEF has been explored at CITES before but not for a specific project.[17]

"GEF projects can be proposed by governments, national institutions, local communities, non-governmental organizations (NGOs), international scientific agencies, and private sector companies in an eligible country."[18] Biodiversity conservation is within the GEF mandate, and it has specifically provided funding for conservation of threatened species under the Convention on Biological Diversity (CBD).

Between 2014 and 2018, the sixth replenishment of the Fund (GEF-6) channelled about $80 million USD to its *Program 3: Preventing the Extinction of Known Threatened Species*, attracting another $300 million in co-financing.[19] Generally such GEF funds are only available to countries that are party to related treaties, in this instance CBD. Consideration should be given to directing GEF funds to elephant range States holding ivory stockpiles, if they agree to destroy those stockpiles. Given that most if not all are Parties to the CBD, they are eligible for GEF funding. However, GEF funding is typically dedicated to global benefits leaving domestic goals to other funding options, so a mixed funding stream might be required.

A drawback of this option is that, levels of GEF funding are typically insufficient to provide all the necessary resources and budget for developing countries to manage their protected areas and enhance biodiversity.[20] As noted above, closing the current gap in conservation spending would need to upscale spending on environmental conservation by five to seven times. A more decisive up-scaling of GEF funds, such as that required to close the biodiversity funding gap, could greatly contribute to the conservation of flagship species, such as elephants, that inhabit most of the African continent and are found in many Asian countries.

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[14] *This rule-of-thumb is taken from Zimbabwe's current elephant management plan, p. 14 (*

https://www.cms.int/sites/default/files/document/cms_nlp_zwe_plan_elephant_2021.pdf).

[15] *A review of these mechanisms is found in Kramer, R (2022), 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 (CoP19 Inf.14).*

[16] *The GEF mandate (13th paragraph) states that "(w)hile the GEF does not receive guidance from the Montreal Protocol, through a memorandum of understanding between the respective Secretariats of the GEF and the Multilateral Fund for the Implementation of the Montreal Protocol, the GEF follows the policy and programming priorities of the Executive Committee of the Multilateral Fund Secretariat."*

[17] See SC36 Report, paragraph 18, https://cites.org/sites/default/files/eng/com/sc/36/E36-SumRep.pdf;

Notification by the Secretariat: https://cites.org/sites/default/files/eng/notif/2012/E037.pdf. In the past CITES Parties have discussed whether the MOU with CBD should include CITES project proposals for GEF funding.

[18] *According to the Conservation Finance Alliance, https://www.conservationfinance.info/s/The-Global-Environment-Facility.doc.*

[19] *The program was focused on a set of African Sub-Saharan and Asian countries and was aimed at: a) strengthening national legislation, institutions, and law enforcement to reduce poaching; (b) strengthening science-based wildlife monitoring, education and awareness; and (c) reducing demand for illegal wildlife products.*

[20] *See BIOFIN (2018), The Biodiversity Finance Initiative Workbook.*

www.biofin.org/sites/default/files/content/publications/workbook_2018/index.html.

ii. Debt-for-Nature Swaps

A further potential source of finance is Debt-for-Nature Swaps (DNS). These are financial transactions in which a portion of a developing nation's foreign debt is forgiven in exchange for local investments in agreed environmental conservation measures.[21] In this way some of the foreign debt from African and Asian range States could be forgiven in exchange for their commitment to destroy ivory stocks and invest in elephant conservation. This would have the advantage of simultaneously addressing two problems endemic to developing countries: debt relief and the need for increased investment in biodiversity conservation.[22]

The biggest advantage of Debt-for-Nature Swaps is that, they do not require countries to accept additional debt. Given the high level of debt that currently exists in many developing countries, this option offers large financial opportunities. For example, the total external debt in African elephant range States averaged $645 billion USD in 2017-2020, at an annual cost of ca. $60 billion USD per year. In 2020, the first year of the pandemic, annual debt service reached $69.2 billion USD. Debt is concentrated in the region, South Africa accounting for 50% of the total annual paid interests and 26% of total debt. As noted above, approximating the investment required for the conservation of African elephant range area using a rule-of-thumb of $200 USD per sq. km, produces an estimate of $626 million USD annually, less than 1% of the debt service paid in 2020 (see Table 2 below). The percentage per region would vary according to current debt levels and the size of their range area. If a Debt-for-Nature Swap program could be established, for example, on the basis of 2% of total annual debt service paid by African range States in 2020, this instrument could liberate almost $1,385 million USD per year to fund elephant conservation efforts, providing more than $400 USD per sq. km. of range area.

[21] *Visser, D. R. and G. A. Mendoza (1994), Debt-for-Nature Swaps in Latin America, in Journal of Forestry,* ***92*** *(6): 13–6.*

[22] *OECD (2007), Lessons Learnt from Experience with Debt-for-Environment Swaps in Economies in Transition, Organization for Economic Cooperation and Development, Paris; UNDP, Debt for Nature Swaps, http://www.undp.org/content/sdfinance/en/home/solutions.html.*

Table 2

African Elephant conservation: estimated funding requirements and debt service

Region	**Range area** (sq. km)	**Required investment** (million US$ per year) *	**Debt service on external debt** (million US$ per year) **	**Required investment as % of debt service**
Central Africa	783,085	157	3,853	4.1
Eastern Africa	880,648	176	7,878	2.2
West Africa	142,500	29	13,381	0.2
Southern Africa	1,325,998	265	44,125	0.6
Total African range	**3,132,231**	**626**	**69,237**	**0.9**

Primary sources: Debt figures from World Bank, International Debt Statistics; Elephant population and range area figures from the African Elephant Status Report, 2016.

Notes:

Data on debt does not include Equatorial Guinea, Namibia and South Sudan.

* Applying a rule-of-thumb of 200 US$ per sq. km

** For the year 2020

Applying the same rule for estimating the investment required for the conservation of Asian elephant range area (using the same rule-of-thumb of $200 USD per sq. km), yields $88 million USD annually, a tiny fraction (0.05%) of the debt service paid in 2020 (see Table 3 below). Of course, the highly fragmented condition of the Asian elephant range implies different conservation challenges and costs compared to the African range, which should be further determined and detailed when developing a financial mechanism.

Table 3

Asian Elephant conservation: estimated funding requirements and debt service

Region	Range area (sq. km)	Required investment (million US$ per year) *	Debt service on external debt (million US$ per year) **	Required investment as % of debt service
Bangladesh	1,800	0.4	3,866.7	0.01
Bhutan	1,500	0.3	58.3	0.51
Cambodia	40,000	8.0	1,488.0	0.54
India	110,000	22.0	76,238.9	0.03
Indonesia	105,000	21.0	67,411.0	0.03
Lao PDR	20,000	4.0	1,033.7	0.39
Myanmar	115,000	23.0	587.5	3.91
Nepal	2,500	0.5	275.2	0.18
Sri Lanka	15,000	3.0	5,223.3	0.06
Thailand	25,000	5.0	16,832.7	0.03
Vietnam	3,000	0.6	16,358.0	0.00
Total Asian range	**438,800**	**88**	**189,373**	**0.05**

Primary sources: Debt figures from World Bank, International Debt Statistics; Asian Elephant population and range area figures from Sukumar, R (2006): A brief review of the status, distribution and biology of wild Asian elephants. Int. Zoo Yb. (2006) 40: 1–8

Notes:
Data excludes China and Malaysia
* Applying a rule-of-thumb of 200 US$ per sq. km
** For the year 2020

Designing a Debt-for-Nature Swaps program as a positive multiple of the debt-to-investment ratio would enhance compliance incentives and multiply the positive effects on debt reduction. This would enable the Debt-for-Nature Swaps to act simultaneously as a true debt-relief mechanism, for example, cancelling "X" points of debt for every point of investment effectively realized in elephant conservation, the non-commercial disposal of ivory stockpiles, and human-elephant conflict amelioration. Furthermore, this type of solution would not be an act of altruism but one of environmental justice, by which wealthy developed countries would be paying for their accumulated ecological debt by financing conservation in Africa and Asia.[23]

Concerning disadvantages, it is worth mentioning: 1) it is not really "fresh" money, but a discount on already committed resources, used as an incentive to change the allocation of public investment; 2) debt may not be sustainable; and 3) debt may have spurious origins. In a recent example, it was proposed to Argentina that the implementation of a Debt-for-Nature Swap program could be certified by an independent civil-society body sanctioning the legitimacy of acquired debt.[24]

[23] *Paredis, E., G. Goeminne, W. Vanhove, F. Maes, and J. Lambrecht (2008), The Concept of Ecological Debt: its Meaning and Applicability in International Policy, Academia Press, Gent.*

[24] *AVAAZ (2020), DeudaXDeuda. Una propuesta pospandemia para resolver las deudas soberanas y ecológicas, con miras a una transición justa en la Argentina.*

iii. Strengthening fiscal space: Special Drawing Rights

Another finance option could be implemented through a dedicated allocation of Special Drawing Rights (SDRs) by the International Monetary Fund (IMF) to directly fund or back the conservation effort of African and Asian elephant range states. This could be used, in principle, in combination with other funding mechanisms. Special Drawing Rights are international reserve assets that serve as a unit of account of the IMF. They cannot be used directly in market transactions (since they are not a currency, nor a claim on the IMF), but countries that hold Special Drawing Rights can exchange them for hard currency, at the cost of an interest rate set by the IMF.[25] In theory, SDR abundant countries could contribute to a global Fund that transfers Special Drawing Rights to countries that participate in the mechanism. Allocation of Special Drawing Rights were used just recently for relieving the financial burden created by the COVID-19 pandemic and have been proposed as a mechanism for addressing climate change vulnerabilities.[26]

Special Drawing Rights have always been thought of as instruments for achieving balance-of-payments stability, the main objective of the IMF, while financing tangible development projects has been the task of the World Bank. As such, the IMF has normally conditioned short-term financial assistance to states in need, aimed at stabilization objectives, with very strict financial and fiscal discipline. Special Drawing Rights are last resource options for enabling countries to enlarge their fiscal space, basically augmenting expenditure capacity to be invested into specific sectors. There are no good reasons why financial mechanisms aimed at short-term goals cannot be used for conservation, if the proper rules for maintaining continuity and discipline are put in place. Investment in biodiversity conservation is a matter of maintaining public services and operations.

By "donating" Special Drawing Rights to the IMF, developed countries could contribute to a Fund (housed by, for example, the African Development Bank or the Asian Development Bank) that is replenished each year. By doing so, higher income countries would be paying their own ecological debt by contributing to the fund for elephant conservation. This way, resources tagged to investments in elephant conservation and non-commercial disposal of ivory stockpiles could afford countries with resources the opportunity to expand public investment at very low interest rates, without draining scarce resources from other critical functions (education, health) and without compromising fiscal balances.

iv. Payment for environmental services

As mentioned above, the environmental functions provided by biodiversity have been estimated to contribute trillions of USD to the global economy. Accounting for the economic value of these natural functions is not a straightforward task and estimates are incomplete and uncertain, but it is clear that even estimates of trillions of USD represent the lower bound of benefits that are absolutely fundamental for the human economy. Programs for payment of ecosystem (or environmental) services consist of direct money transfers, normally implemented through State agencies, to land owners, organizations, and other entities in exchange for the provision of such services. These programmes have been growing significantly in the last two decades, in terms of the number of projects, geographical coverage and amount of finance. By 2018, there were 550 programmes providing payments for ecosystem services providing $36-42 billion USD per year.[27]

A salient example based on this concept is Costa Rica's Program for Payments of Environmental Services. Launched in 1997, it is a financial mechanism of the State, designed to improve and protect existing forest areas and develop new ones. It is a voluntary programme consisting of multi-year direct payments (5 or 10 years) to land-owners, for financing projects for forest protection, reforestation and agro-forestry systems, in recognition of the environmental services provided by healthy forests: carbon sequestration, biodiversity

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[25] *https://www.brettonwoodsproject.org/2021/12/what-are-special-drawing-rights-sdrs/*

[26] *See for example, Jensen, L. (2021), An Unprecedented Opportunity to Boost Finance for Development, The Upcoming Special Drawing Rights Allocation, UNDP Global Policy Brief, Development Futures Series.*

[27] *Salzman, J, G. Bennet, N. Carroll, A. Goldstein, and M. Jenkins (2018), The global status and trends of Payments for Ecosystem Services. Nature Sustainability, 1, 136-144.*

protection, water conservation, and scenic beauty.[28] The program has gradually included parallel objectives of poverty alleviation and gender equality, and covered 1.3 million hectares and benefited over 18 thousand families.[29]

In 2020, payments per hectare ranged between $18 and $73 USD per year, depending on the services provided. Payments are determined according to possible alternative uses (mainly, cattle production), so that the foregone income by choosing conservation is compensated.[30] In the case of conservation projects, the total payment is scheduled along the project's duration, with 50% in the first year, 20% in the second, and 10% the remaining three years. The programme, implemented through the agency FONAFIFO (National Fund for Forestry Financing, in Spanish), is funded by a 3.5% tax on sales of hydrocarbon fuels. It has also received funding from the government of Norway, and a non-recoverable loan of $30 million USD from the GEF and a special contribution of $10 million USD from the World Bank.[31]

This programme has been very successful in terms of environmental and social impact. Its success can also be attributed to the stable, transparent, and efficient institutional environment of the country. An obvious disadvantage is its reliance on fiscal expenditure, which means that in absence of further private international financing, the state bears the bulk of the financial burden.

v. Carbon offsets

Carbon offsets are greenhouse-gas (GHG) emission reductions (or increases in carbon storage, e.g., through forest restoration) that compensate for CO_2 or other greenhouse gas (GHG) emissions occurring somewhere else. A carbon credit is a transferable instrument, certified to represent a reduction of GHG emissions (typically one ton of CO_2-equivalent) by a government or other certification agency. A purchaser buys this credit to claim the GHG reduction as their own, in order, for example, to meet GHG mitigation goals.

In most cases, carbon credits are produced in the context of specific projects with important GHG reduction potential, like renewable energy or to avoid deforestation. Carbon offset credits operate under the auspices of specific offset programs, institutions that set the standards for ensuring the quality of offsets (pioneered by the UN Clean Development Mechanism). These programs are both run by governments (compliance programs) and by NGOs (voluntary programs).[32] In order to avoid double-counting, carbon offsets must be additional to national GHG emissions reductions already committed to by countries under the Paris Agreement to ensure that GHG reductions are not then claimed by the transferring country.

Important carbon offset initiatives exist in the African elephant range, developed around forest conservation projects. The Central African Forest Initiative (CAFI), established in 2015, is a partnership between a coalition of nine donor countries, six African countries[33] and their respective government agencies. It has transferred $115 million USD of a total $502.3 million USD committed for forest conservation and carbon capture. In turn, Gabon has also partnered with a private firm, the African Conservation Development Group, to develop a

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[28] *The official webpage can be consulted here (in Spanish): https://www.fonafifo.go.cr/es/servicios/pago-de-servicios-ambientales/.*

[29] *See https://www.presidencia.go.cr/comunicados/2020/10/programa-tico-de-pago-por-servicios-ambientales-gana-premio-global-de-accion-climatica-de-naciones-unidas/.*

[30] *Murillo, C. (2011), Costa Rica: fiscal policy and payment for environmental services, in Nadal, A., Macroeconomic Policies, Livelihoods and Sustainability, Policy Matters, Issue 18, November, IUCN Commission for Environmental, Economic and Social Policy.*

[31] *Ibid.*

[32] *Carbon offsets are different to the REDD+ framework, which is based on the development and implementation of national strategies or action plans for reducing emissions from deforestation and forest degradation. In REDD+, actions must prove they are new, additional and predictable (results-based), which in turns allows countries to seek and obtain payments for GHG capture (https://unfccc.int/topics/land-use/workstreams/redd/what-is-redd).*

[33] *The Central African Republic, the Democratic Republic of the Congo (DRC), the Republic of Cameroon, the Republic of Congo, the Republic of Equatorial Guinea and the Republic of Gabon.*

large project involving forestry, agriculture and ecotourism in the Grande Mayumba region, also using carbon credits.[34]

Carbon offsets have been criticized as being ineffective to reduce GHG emissions by enabling high-emitting activities to continue. They can "lock in" higher emissions over the long run and can be based on over-estimated reductions.[35] They could also create perverse incentives by discouraging future, more ambitious regulation, as project developers would not be able to finance projects through the sale of offsets since future regulation implies that such reductions are not additional anymore.[36] Finally, in the particular case of forest conservation there is the issue of permanence, that is, the risk of future deforestation.[37] All these potential drawbacks may affect the ability of projects based on carbon credits to attract potential investors and increase the cost and complexity of quality control mechanisms.

Carbon offsets have not been directly related to elephant conservation, but under a proper design, they could at least (according to our current state of knowledge) benefit forest elephants. In their roaming for food across the rainforest, forest elephants consume and crush the lower vegetation and reduce the density of young trees, augmenting the advantages for the remaining ones. By promoting the growth of taller, larger trees, forest elephant activity increases significantly the carbon captured in biomass. A recent study estimates that the total present value for the carbon capture services of forest elephants could be over $150 billion USD per year (at $25 USD per ton).[38] This concept may not be easily extended to savannah elephants but is worth considering for Asian elephants.

vi. Green bonds

Green bonds are a debt mechanism that is currently booming,[39] a staggering $1.8 trillion USD in bonds having been sold by the end of 2021 since they first appeared in 2007.[40] They have become a mainstream instrument for borrowing money linked to environmental purposes by governments and corporations. For example, in 2021 the European Commission announced plans to issue up to €250 billion in green bonds as part of the EU's Coronavirus recovery plan.[41]

There is no standard definition of what constitutes a green bond. In principle, a bond is a fixed-income financial asset, used by states, firms or any other entity to take up loans from the public, offering a regular interest (the coupon rate) and committing to pay the full loan back at a certain future date (the maturity date). From there, the issuer has a lot of flexibility in defining the actual *green* nature of the bond, that is, the type of environmental comittment of the project associated with the instrument. *Sustainability bonds* are a variant form of green bonds, mostly used by development banks to finance sustainable development projects in emerging markets. Sustainability bonds issued $184 billion USD in debt in 2021, up 149% from 2020.[42]

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[34] *See: https://afcondev.com/grande-mayumba.*

[35] *Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. (2019), "Securing Climate Benefit: A Guide to Using Carbon Offsets." Stockholm Environment Institute & Greenhouse Gas Management Institute. Offsetguide.org/pdf-download/; Schneider, L. (2009). Assessing the additionality of CDM projects: practical experiences and lessons learned. Climate Policy, 9(3). 242–54. DOI: 10.3763/cpol.2008.0533.*

[36] *Wara, M. and Victor, D. G. (2008). A Realistic Policy on International Carbon Offsets. Program on Energy and Sustainable Development Working Paper, 74. Stanford University, Stanford, CA. http://pesd.stanford.edu/publications/a_realistic_policy_on_international_carbon_ offsets/.*

[37] *Murray, B. C., Galik, C. S., Mitchell, S. and Cottle, P. (2012). Alternative Approaches to Addressing the Risk of Non-Permanence in Afforestation and Reforestation Projects under the Clean Development Mechanism. Nicholas Institute for Environmental Policy Solutions, Duke University.*

[38] *Chami, R. C. Fullenkamp, T. Cosimano, and F. Berzaghi (2020) The secret work of elephants, Finance & Development, December 2020.*

[39] *Morgan Stanley, 2017. Behind the green bond boom. Morgan Stanley, October 11.*

[40] *Green Bond Boom Sees Issuances Double to $621 Billion, Bloomberg NEF, March 8, 2022,*

https://about.bnef.com/blog/green-bond-boom-sees-issuances-double-to-621-billion/

[41] *"EU commission to issue 250 billion euros in green bonds," AP News, September 7, 2021. https://apnews.com/article/business-environment-and-nature-european-commission-d760ce592b98b950c93eaef724891d43*

[42] *See note 41.*

The main disadvantage of bonds is that they entail actual debt at high interest rates. Bonds are normally designed to attract non-conventional investor sources that are willing to accept a higher risk. In general, bond markets follow risk levels of countries as set by rating agencies. Elaborating upon the conclusions of Flammer (2020) on corporate green bonds, for these to become an attractive financing mechanism for elephant range States, those countries would need to convince investors that they have a strong comittment to sustainability and attract investors willing to trade off financial returns for environmental benefits.

In addition, green bonds can be a form of "greenwashing", lacking standards for metrics and transparency, and have yet to deliver true conservation value.[43] The spectacular growth of green bonds inevitably raises the suspicion, as with any other type of financial instrument traded in secondary markets, of strong speculative forces underlying the market.

vii. Private funds

Deutz et al[44] have estimated that private philanthropy allocates between $1.7 and $3.5 billion USD a year for conservation projects worldwide. While this source of funding was not considered to be large enough to contribute significantly to close the biodiversity finance gap, it was rightfully recognized as "highly catalytic for mobilizing private sector financial flows".

For example, private trusts and funds have played a decisive role in complementing and catalysing resources for biodiversity conservation in Africa. A 2009 study registered over 280 non-governmental organizations working on wildlife conservation in sub-Saharan African, spending ca. $130 million USD a year and providing "some level of support to about 14% of the continent's protected areas".[45] The current contribution is certainly much larger.

The main attraction of private philanthropy for elephant conservation is of course the expressed trade-off of financial returns for conservation benefits. This is precisely what gives this type of funding a catalytic power for mobilizing larger funds and private sector resource mobilization. Their role in public-private-partnership projects may be crucial, in particular for start-up phases, as their expertise in fundraising can provide a bridge between conservation projects and private capital elsewhere in the world. On the down side, private funds are in general small (compared to other sources of funding) and dispersed, and their objectives may not naturally align with those of range States.

viii. Public-Private Blended Funds

A resource of blended funds is the Conservation Finance Alliance, which combines experts in conservation finance with practitioners and organizations. The Alliance leverages instruments and solutions to manage economic incentives, policies and capital for conservation. The Secretariat of the Conservation Finance Alliance is hosted by the Wildlife Conservation Society (WCS). The Alliance promotes biodiversity financing while providing toolkits and information on funding options.

One example of a project of the Conservation Finance Alliance is the Global fund for coral reefs. The Fund is "an investment vehicle to fund innovative business models that increase the resilience of coral reefs and the communities that depend on them".[46] It was created "as a 10-year $625 million blended finance vehicle" under which projects are funded initially by grants that provide resources for technology transfer, capacity building, monitoring, and project evaluation. Once the projects are off the ground, an investment fund provides

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[43] *See for example: Baker-McKenzie, 2019, Critical challenges facing the Green bond market, International Financial Law Review, October-November, pp. 22-25; Guigiale, M. (2018), Pro's and Con's of Green Bonds, OMFIF's The Bulletin (September 2018).*

[44] *Op. cit., p. 17.*

[45] *Schofield, K. and D. Brockington (2009), Non-governmental Organisations and African Wildlife Conservation, BWPI Working Paper 80, Brooks World Poverty Institute, University of Manchester.*

[46] *https://globalfundcoralreefs.org/how-we-work/.*

investment capital along with guarantees and loans from the Global Climate Fund, multilateral banks and other sources. A similar public—private partnership could be leveraged for elephant conservation.

Concluding remarks

The combined impacts of the biodiversity and climate crises include loss of environmental services, increased pandemic risk, and many other damages not accounted for that have cost the world economy trillions of USD over the last few years.[47] The ecological crisis has become an existential priority. The decision right now is between continuing the path of doing too-little, too-late or enabling the transformative change needed to protect biodiversity and the planet.

Elephant conservation stands as a symbol of conservation challenges. There have been important advances in international collaboration and coordinated efforts aimed at conservation across all range States. The current economic stagnation and uncertainty, however, is alarming, risking the loss of every gain to date in light of the mounting challenges ahead. Policy design and choices for financing conservation are complex, necessitating ongoing dialogue more than ever.

All of the financial mechanisms discussed have disadvantages, such as transaction costs derived from lengthy negotiations, relative loss of sovereignty in decisions regarding the allocation of conservation resources, and the potential for misdirection of funds. Development of low transaction-cost institutions and adequate, effective metrics are key elements for establishing effective mechanisms and scaling-up operations.[48] Their application to the specific case of elephant conservation would require an appropriate re-design to match range States' characteristics and needs.

Conducting negotiations at a regional level would reduce transaction costs, while a unified position among the elephant range States predicated upon non commercial disposal of ivory stocks would strengthen their negotiating position. In sum, elephants may provide an excellent case study for how biodiversity financing will be approached globally given the current biodiversity crisis and economic circumstances.

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[47] *The ten largest climate catastrophes of 2017 produced global costs up to $170 billion USD (Kramer and Wade, 2022, Counting the cost 2021. A year of climate breakdown, Christian Aid, London). In the last five years (2017-2021), the US has experienced 89 billion dollar extreme weather events, costing $742.1 billion USD, 34% of the total costs of these type of events since 1980 (over $2.15 trillion USD) (https://www.climate.gov/news-features/blogs/beyond-data/2021-us-billion-dollar-weather-and-climate-disasters-historical). The collapse of select ecosystem functions, like wild pollination, marine fisheries and native forests, – could cause losses of $2.7 trillion USD annually by 2030 (Johnson, J. A. Ruta, G., Baldos, U., Cervigni, R., Chonabayashi, S., Corong, E., Gavryliuk, O., Gerber, J., Hertel, T., Nootenboom, C., Polasky, S. (2021) The Economic Case for Nature : A Global Earth-Economy Model to Assess Development Policy Pathways. World Bank, Washington. The COVID-19 pandemic, most likely a result of wildlife trade and market conditions, may have costed up to $28 trillion USD in lost output (https://www.theguardian.com/business/2020/oct/13/imf-covid-cost-world-economic-outlook).*

[48] *Salzman, et al (op. cit).*