RE-THINKING THE APPLICATION OF SUSTAINABLE USE POLICIES FOR AFRICAN ELEPHANTS IN A CHANGED WORLD
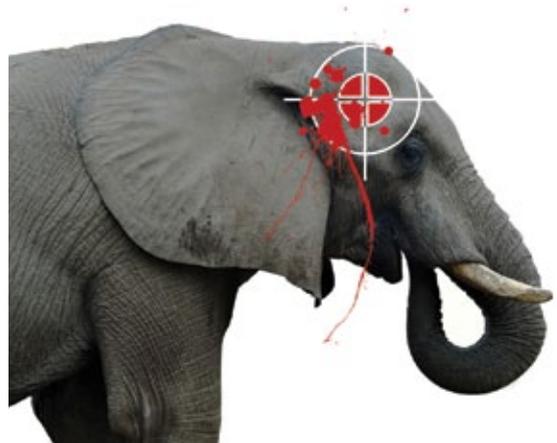
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ABSTRACT

Despite increasing calls to recognise the intrinsic value of biodiversity, the need to incentivise people to choose conservation as a competitive form of land use through a sustainable use (SU) approach remains the de facto and de jure reality across most of Africa today. In a 'second-best' world of corruption and poor governance, consumptive use (CU) policies (eg, ivory trading, trophy hunting, culling) have produced mixed results for elephant and ecosystem conservation, and for human development. The partial ban on ivory trade globally has led to confusion among African policymakers, local and international law enforcement agencies, and ivory consumers. This is causing a perfect storm of increased poaching to meet the increased (speculative?) demand for raw ivory, without the potential solutions from implementing either a controlled legal trade or a permanent global ban. New realities are emerging, namely the closure of the main consumer ivory markets; the poor prospects for further international trade approvals under CITES; concerns that the biologically constrained supply may not be able to meet uncertain demand under a legal trade scenario; and the questioning of the conservation and community benefits of trophy hunting. African policymakers need to adapt their application of SU policy by:

- supporting a permanent global ivory trade ban and destroying ivory stockpiles;
- properly implementing stated SU policies to channel promised benefits to legitimate beneficiaries and address elephant over-abundance;
- improving the governance of trophy hunting as a stopgap land-use activity in communal areas, but banning hunting if it undermines ivory consumer demand reduction;
- promoting photographic tourism to expand its potential benefits to marginal areas; and
- improving the capacity of national wildlife agencies or soliciting support from public–private protected area management organisations.

These adaptions increase the net costs of incentivising community beneficiaries and law enforcement, shifting the burden to African governments. Therefore, if the non-African governments and special interest groups imposing the ivory trade, culling and trophy-hunting restrictions do not support them, they will be complicit in the permanent loss of vast areas of elephant ecosystems. Ultimately, an efficient, global biodiversity tax is required to fund these adaptions, in order to maintain the ecosystem services and/or intrinsic value of African ecosystems for all of humanity.

ABOUT THE AUTHOR

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ACKNOWLEDGEMENTS

These papers recognise the emergence of a 'new reality' in elephant conservation, where the majority of African elephant range states and the two largest ivory markets, the US and China, have decided that to secure a future with elephants across Africa, the international ban on ivory trade must continue and all ivory domestic markets must close. Humans will only continue to make space for elephants if we value them and if local communities derive benefits from them. In the emerging new reality of a world without ivory trade, these five papers are a timely and essential contribution to our thinking and policymaking as we look to secure a meaningful future for elephants and people. The hope is that these papers will assist African elephant range states and other countries in their discussions as to how to achieve this together.

Stop Ivory is an NGO registered in the UK and US committed to protecting elephants, stopping the ivory trade and securing a meaningful future for elephants and communities. Stop Ivory is the joint-secretariat of the Elephant Protection Initiative with Conservation International.

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ABBREVIATIONS AND ACRONYMS

AEC	African Elephant Coalition
CBD	Convention on Biological Diversity
CBNRM	Community-Based Natural Resources Management
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP17	Congress of the Parties 17 (of CITES)
CU	consumptive (sustainable) use
EPI	Elephant Protection Initiative
HEC	human–elephant conflict
IUCN	International Union for Conservation of Nature
NGO	non-government organisation
PPP	public–private partnership
PPPAMO	public–private protected area management organisation
SU	sustainable use

INTRODUCTION

Key populations of both African elephant sub-species (*Loxodonta africana* and *Loxodonta cyclotis*) in Central, West and East Africa have experienced drastic losses over the past five years, and the overall elephant population is likely declining.[1] Driven largely by increasing demand in East Asia, high market prices for illegal ivory has increased the incentives for poaching, allowing international criminal syndicates to exploit poor governance and undermine human development in vulnerable areas of Africa. However, only addressing the illegal demand for and trade in ivory will not save the species, unless large, intact ecosystems in which elephant populations can exist naturally are also preserved. Habitat loss is driven by both local and global human demographic dynamics: African communities convert land for agricultural use and harvest wild produce, while logging, mining and commercial agriculture supply consumers across the world. Recognition of this shared global blame and responsibility for the African elephant crisis is required to balance the relative costs and benefits of the different policies discussed in this paper. In Africa, the people who have rights to use the natural resources in large areas of suitable elephant habitat, and who bear the costs of living with elephants, need to be incentivised to make conservation a land-use choice, by benefitting from natural resource use that does not exceed biological sustainability thresholds. This is the basis of sustainable use (SU) policy, which has been the cornerstone of global and African conservation policy for the past few decades.

Given the acute threats facing elephants today, new realities are forcing African policymakers to re-think some SU assumptions. In particular, rampant corruption in Africa and along the illegal ivory supply chains to consumer markets, and changing sentiments outside Africa, are limiting the scope for some SU management tools. There is also a greater recognition of the unintended consequences of national SU policies on regional elephant populations. Firstly, this paper clarifies how SU policy has been interpreted by different stakeholders in different contexts, and interrogates their diverse objectives. Secondly, it reviews the evolution of SU policies in Africa, including successes and failures in the application of consumptive use (CU) in particular. Thirdly, it briefly discusses the merits of two non-CU management tools. It then highlights the new realities facing African policymakers today. Finally, this paper proposes recommendations to African policymakers and the global conservation industry on adapting SU policies to a changed world.

WHAT DO WE MEAN BY SUSTAINABLE USE?

One of the three central pillars of the Convention on Biological Diversity (CBD) of 1992, sustainable use is defined as 'the use of components of biological diversity in a way and at a

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1   Wittemyer G, 'Testimony to the US Senate Foreign Relations Subcommittee on Africa and Global Health Policy, Hearing on "Stemming Wildlife Poaching"', 16 July 2015.

rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations'.[2]

DIFFERENT TYPES OF 'USE' FOR ELEPHANTS AND ECOSYSTEMS

Elephants and natural ecosystems hold both economic and intrinsic value to humans. Some, but not all, people derive intrinsic value from the mere existence of biodiversity on the planet, or believe that human rights should not supersede the rights of animals as sentient beings, thus arguing there is no justification for economic use.[3] Elephants are critical to the health of certain ecosystems in Africa,[4] contributing indirectly to the ecosystem services they provide humans, such as providing clean water and air, preventing soil erosion and sequestrating carbon in forests, the benefits of which are felt locally and globally. A common differentiation is made between consumptive, involving killing, and non-consumptive use. Photographic tourism is referred to as non-CU, although it can have significant negative impacts on biodiversity through game-viewing disturbances, infrastructure development and waste production.[5] The position of the International Union for Conservation of Nature (IUCN)[6] is that '[b]oth consumptive and non-consumptive use of biological diversity are fundamental to the economies, cultures, and well-being of all nations and peoples' and should thus be considered as justifiable to meet human needs, as long as such use is sustainable.

The common misinterpretation of SU as only referring to CU may cause confusion among policymakers and special interest groups, and undermine support for broader SU policy.[7] In this paper, CU will refer to the harvesting of (eg, culling and trophy hunting) and trade in wildlife products (eg, ivory); while SU shall be more broadly interpreted to include both consumptive and non-consumptive use (eg, photographic tourism and the use of ecosystem services provided by healthy elephant ecosystems).

WHAT ARE WE TRYING TO SUSTAIN?

Like the CBD, the IUCN also recognises the dual social and biological objectives of SU policy: 'Use, if sustainable, can serve human needs on an ongoing basis while contributing

2   UNEP (UN Economic Programme), 'Article 10, Chapter 2: The Convention on Biological Diversity', in *Global Biodiversity Outlook* 1, 2001, https://www.cbd.int/doc/publications/gbo/gbo-ch-02-en.pdf, accessed 15 June 2016.

3   Duffy R, 'Interactive elephants: Nature, tourism and neoliberalism', *Annals of Tourism Research*, 44, 2014, pp. 88–101.

4   Ripple WJ *et al.*, 'Collapse of the world's largest herbivores', *Science Advances*, May 2015, pp. 1–12.

5   Leader-Williams N, 'Sustainable use and incentive-driven conservation: Realigning human and conservation interests', *Oryx*, 2013, p. 216.

6   IUCN (International Union for Conservation of Nature), 'Policy Statement on Sustainable Use of Wild Living Resources', par. 2, https://www.iucn.org/sites/dev/files/import/downloads/policy_en.pdf, accessed 15 June 2016.

7   Leader-Williams N, *op. cit.*, p. 216.

to the conservation of biological diversity.'[8] However, different elephant stakeholders – local communities, private landowners,[9] African governments, global conservation and human development organisations, photographic tourists, trophy hunters, ivory carvers, and other special interest groups – may all have different views on what biodiversity and human needs we are trying to sustain through SU policies.

Biodiversity of ecosystems and elephants

In the context of unsustainable human population and per capita natural resource use trends globally, how do we define global biological sustainability thresholds for elephants? The number of elephants has declined from a few million a century ago to approximately 500 000 today, and has specifically declined over the past five years.[10] Within this macro story, there are two diverging scenarios. A handful of populations in Southern and East Africa are expanding and some now exceed biological sustainability thresholds in specific protected areas, threatening broader ecological processes. At the same time, the remainder of the elephant's former natural range is characterised by local extinctions and increasingly fragmented populations, which face critical threats to their viability, especially in Central and West Africa. The African forest elephant population dropped by 62% from 2002–2011.[11] Elephants are a biological apex species, as well as a symbolic anchor of a protected area in the eyes of broader stakeholders. Thus local elephant extinctions often accompany the broader loss of biodiversity in an area. This interdependence reflects why an ecosystem approach rather than a species approach is required to determine biological sustainability thresholds for elephants. Accordingly, neither the overall quantum of elephants alive nor how many individuals die unnaturally is as important as the long-term viability of a genetically diverse spectrum of populations in large, intact ecosystems.

Given the acute threats facing elephants and ecosystems today, this paper proposes a biological sustainability objective for elephants over the next decade as holding the line against poaching and protected area boundary infringement threats in selected large ecosystems, taking cognisance of both the genetic diversity of elephants and their role in anchoring threatened biomes. These could include the following healthy elephant populations: Great Limpopo Transfrontier Park, Kavango–Zambezi Transfrontier Conservation Area and the Maasai Mara/Serengeti ecosystems, plus priority areas

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8   IUCN, *op. cit.*, par. 3.

9   While recognising the historical conservation role played by some Southern African private landowners, this paper will focus on incentivising government and community stakeholders. The size of the land required for viable elephant populations and the unique challenges of managing elephant populations in small, closed areas mean the number of elephants on private land is numerically and genetically insignificant to overall sustainability objectives. It is also unlikely that elephants could be intensively ranched by private landowners on the same basis as other large, threatened mammals such as rhinos.

10   Wittemyer G, *op. cit.*, p. 2.

11   Wittemyer G *et al.*, 'Illegal killing for ivory drives global decline in African elephants', *Proceedings of the National Academy of Sciences of the United States of America*, 2014, pp. 13117–13121.

under critical threat:[12] the core African forest elephant population in the TRIDOM area (Republic of Congo, Gabon, the Central African Republic and Cameroon), W National Park in West Africa, and the Selous/Niassa/Ruaha populations in Tanzania and Mozambique. This pragmatic approach allows for ecosystem rehabilitation and elephant range expansion from these seed populations at a later stage, once the threats are better addressed.

Social objectives: Human needs

Today, more than 80% of the former natural elephant range in Africa exists outside formally protected areas,[13] largely on rural, communally owned land. These local communities have to deal with both the direct costs of human–elephant conflict (HEC) and the opportunity costs of not using the land exclusively for subsistence agriculture and/or harvesting natural resources, which remains imperative for survival in much of rural Africa. Increasingly militarised elephant poaching, often by rebel groups or criminal syndicates aligned with political elites, undermines human security in communities living near elephants. To choose conservation as a form of land use, the benefits must outweigh these costs of living with elephants. Devolving land-use and wildlife rights from national governments to local communities allows greater ownership of and accountability for land-use decision-making.[14] In reality, a benefit-only incentive system is insufficient to prevent over-utilisation of natural resources on communal land, given the 'Tragedy of the Commons' effect.[15] Some form of punitive management intervention is therefore critical to ensure utilisation rates are below thresholds, ensuring that benefits are sustainably produced for current and future generations.

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National development: Trying to balance social and biodiversity objectives

While voters and/or constitutions mandate national governments to deliver both social and biodiversity objectives through conservation policy, human development remains a priority for various reasons. Therefore, conservation needs to be a competitive form of land use when compared with alternatives such as logging, mining or commercial

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12   Wasser SK *et al*., 'Genetic assignment of large seizures of elephant ivory reveals Africa's major poaching hotspots', *Science*, 349, 2015, pp. 84–87.

13   Selier SA *et al*., 'The legal challenges of transboundary wildlife management at the population level: The case of a trilateral elephant population in Southern Africa', *Journal of International Wildlife Law and Policy*, 2016, p. 101.

14   This is the core tenet of the Community-Based Natural Resources Management and Community Conservancy approaches, which are addressed in Chevallier R & R Harvey, 'Ensuring Elephant Survival Through Improving Community Benefits', SAIIA (South African Institute of International Affairs) OP 243, 2016.

15   Cole DH, Epstein G & MD McGinnis, 'Digging deeper into Hardin's pasture: The complex institutional structure of "the tragedy of the commons"', *Journal of Institutional Economics*, 10, 3, 2014, pp. 353–369.

agriculture,[16] although this is often unrealistic within the short timeframes of democratic presidential terms.

Protected area management is an ever-bigger burden on constrained national budgets, especially given the militarisation of poaching operations and the increasingly sophisticated illegal wildlife trade syndicates. In order to balance biological and social objectives with limited capacity and funding, decision-making through conservation triage[17] could focus efforts on fewer protected areas that have the best chance of surviving the ongoing threats. Policy targets should address the number of viable populations, possibly to anchor different ecosystem biomes, and identify whether meta-population management is needed to maintain genetic integrity between isolated populations. To benefit from economies of scale in protected area management and to reduce HEC, small elephant populations in non-critical biomes may need to be relocated or destroyed. Given that African policymakers are mandated to focus on domestic interests, they need to be incentivised to consider domestic policies' unintended consequences for regional elephant management efforts, trans-boundary populations and global cross-cutting issues such as consumer ivory demand and the illegal ivory trade. Otherwise, an optimal domestic management tool that targets an absolute number of elephants within a specific country to maximise sustainable, domestic human benefits from elephants may undermine the elephant sustainability objectives in other range states.

Special interests

If conservation is a land-use choice made primarily by local people and government officials, who bear the direct and opportunity costs of conserving protected areas and living with elephants, then everyone else who derives economic or intrinsic value from elephants needs to incentivise them. Special interest groups, often from outside Africa, derive various values from elephants and have become increasingly influential in skewing elephant management policy towards their narrower objectives. These include:

- the for-profit photographic tourism industry, which needs to provide paying guests (largely foreign) with value-for-money game-viewing experiences – this may skew elephant management towards over-abundance in attractive areas and limit the legitimate applications of trophy hunting and culling;
- the trophy-hunting and ivory-carving industries, which need a reliable, legal supply of elephants and ivory from a large elephant population – they are arguably less interested in the viability of genetically diverse populations anchoring threatened biomes across Africa;

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16   SADC, 'Law Enforcement and Anti-poaching Strategy (2016–2021)', http://www.gaborone. diplo.de/contentblob/4715602/Daten/6225480/SADC_LEAP_FINAL.pdf, accessed 10 July 2016.

17   Kilham E & S Reinecke, 'Biggest bang for your buck: Conservation triage and priority-setting for species management in Australia and New Zealand', INVALUABLE Policy Brief, 0115, 2015, p. 1.

- animal rights activists, who are primarily concerned with the welfare of each and every elephant, often to the detriment of the optimal allocation of resources to the broader ecosystem and the social sustainability objectives discussed above; and
- a multitude of other local and global non-government organisations (NGOs) with a range of conservation, human development, and human rights objectives.

Some of these groups' objectives are aligned with those of the primary decision-makers, and all are potentially useful for monetising conservation land uses to incentivise beneficiaries. That said, some have been criticised for not sufficiently resourcing their narrow agendas and not taking accountability for the unintended consequences thereof,[18] thereby shifting the burden of implementation onto African governments, communities and private landowners.

APPLICATION OF SUSTAINABLE USE POLICIES IN AFRICA

THE EVOLUTION OF SUSTAINABLE USE POLICY

Concerned about the unrestricted slaughter of wildlife largely by colonial hunters, colonial authorities established national parks across Africa in the first half of the 20th century.[19] They restricted the use of wildlife and centralised management control in the state, thereby disempowering local African communities from the imperative use of natural resources. Facing ballooning human populations, rapidly expanding agriculture and demands for greater rights by Africans, a radical shift occurred in conservation policies in the 1960s, marked by a 'use it or lose it' sentiment,[20] which was echoed in global conservation policies. Southern African countries led the implementation of this new experiment, devolving rights over wildlife to private and community landowners, encouraging the economic use of and trade in wildlife products (including CU). The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) began to actively manage this legal international wildlife trade in 1975. Kenya took a different track, banning elephant hunting in 1973 and trophy hunting in 1977, although there was extensive evidence of political elites involved in the large-scale laundering of poached ivory from Kenya's national parks through the legal trade system.[21]

The elephant-poaching crisis of the 1980s highlighted the shortcoming of SU policies – many African countries lacked sufficient governance mechanisms and capacity to overcome the corrupting influence of criminal syndicates and to implement policies effectively. There was extensive abuse of the export permitting and trading system by both ivory traders and African government officials. For example, in 1986/7, Burundi traded

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18   Martin G, *Game Changer: Animal Rights and the Fate of Africa's Wildlife*. Oakland: University of California Press, 2012.

19   Child B, 'The sustainable use approach could save South Africa's rhinos', *South African Journal of Science*, 108, 7/8, 2012, p. 2.

20   *Ibid.*, p. 2.

21   Martin G, *op. cit.*

89.5 tonnes of ivory while having only one known live wild elephant, its legal stockpile likely coming from poached elephants in neighbouring countries.[22] African elephant populations dropped from 1.3 million in 1979 to 600 000 in 1989.[23] An international outcry ensued, resulting in an international trade ban under CITES in 1989.

During the 1990s and early 2000s elephant poaching and illegal trade appears to have dropped, and many elephant populations recovered.[24] Although there is insufficient information to prove conclusively that this occurred solely because of the trade ban, the widespread publicity (including Kenya's ivory burn in 1989) appears to have helped reduce consumer demand, especially in the largest markets (the US, EU and Japan).[25] Despite the 1989 ban, many countries continue to practise SU policies, and adapted to other forms of use. Some Southern African countries (where successful implementation of SU policies resulted in expanding elephant populations) lobbied for the resumption of trade to fund conservation efforts and benefit communities. Using the criteria agreed upon at the 1989 CITES meeting, two 'experimental' sales were allowed from the national stockpiles of Botswana, South Africa,[26] Namibia and Zimbabwe in 1999 and 2008, to provide sufficient legal supply to supress illegal market prices and thereby try to reduce the incentives for poaching.

Since the mid-2000s elephants have been facing a second major poaching onslaught, this time under a partial trade ban (two sales occurred, and some domestic markets remain open), driven by increasing demand, especially in China. Today, the ivory trade debate has come full circle with protectionists again gaining the upper hand, as in 1989. Across most of Africa today the de facto and de jure reality remains that conservation land must deliver sufficient socio-economic benefits to people to justify its existence – ie, SU. But different approaches have been taken to the application of CU in particular.

WHERE IS CONSUMPTIVE USE POLICY PRACTISED TODAY IN AFRICA?

Not all African countries have well-articulated, up-to-date conservation policies and elephant management plans, with other factors determining realities on the ground in protected areas and on communal land. No range states are currently implementing elephant culling, but there are different approaches to ivory trade, ivory stockpile

> No range states are currently implementing elephant culling, but there are different approaches to ivory trade, ivory stockpile management and trophy hunting of elephants

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22 EIA (Environmental Investigative Agency), *A System of Extinction: The African Elephant Disaster*, 1989, https://eia-international.org/report/a-system-of-extinction-the-african-elephant-disaster, accessed 15 June 2016.

23 Lemieux AM & RV Clarke, 'The international ban on ivory sales and its effects on elephant poaching in Africa', *British Journal of Criminology*, 49, 2009, p. 451.

24 *Ibid.*

25 Dupuy V, *International Environmental Law*. Cambridge: Cambridge University Press, 2015, par. 6.3.2.3.

26 South Africa only down-listed its elephants to Appendix II in 2000, participating in the 2008 sale only.

management and trophy hunting of elephants, which allows us to broadly categorise four groups of range states:

• three of the four Appendix II countries in Southern Africa are committed to trade;
• the fourth Appendix II country, Botswana, is against trophy hunting and trade;
• the major Appendix I range states in SADC that implement trophy hunting; and
• the other range states that oppose any trophy hunting or trade.

Appendix II[27] countries: Namibia, Zimbabwe and South Africa

Namibia, Zimbabwe and South Africa are currently the primary proponents of the ivory trade, claiming that they have earned the right to apply CU policies to balance the social and biodiversity aspects of conservation as a choice of land use. Although only Namibia and Zimbabwe have submitted proposals to CoP17 to resume trading, they have been joined by South Africa in a separate proposal, requesting CITES parties to continue exploring the Decision-Making Mechanism for a Process of Trade in Ivory on the potential for future trade.[28] All three countries oppose the destruction of ivory stockpiles, with South Africa claiming that this increases scarcity value and prices, thereby incentivising poaching.[29] They are pushing a pro-trade approach on the regional level, influencing SADC's LEAP strategy document to state that '[n]atural resource demand reduction initiatives could seriously jeopardise sound long-term conservation and development policy and practice in the region'.[30] Having clearly articulated SU policies, with successful implementation supported by favourable governance environments and capable wildlife agencies, has resulted in the increasing elephant populations with no significant poaching threats. That said, the EU has concerns about Zimbabwe's protected area management,[31] with at least one elephant population currently over-exploited.[32] All three have successful trophy-hunting industries, with Namibia and Zimbabwe relying

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27   CITES Appendix II lists species that are not necessarily threatened with extinction at the moment but that may become so unless trade is closely controlled. (See CITES, 'The CITES appendices', https://cites.org/eng/app/index.php, accessed 15 June 2016.)

28   CITES, 'Decision-Making Mechanism for a Process of Trade in Ivory: Proposal of Namibia, South Africa, Zimbabwe', https://cites.org/sites/default/files/eng/cop/17/WorkingDocs/E-CoP17-84-03.pdf, accessed 20 July 2016.
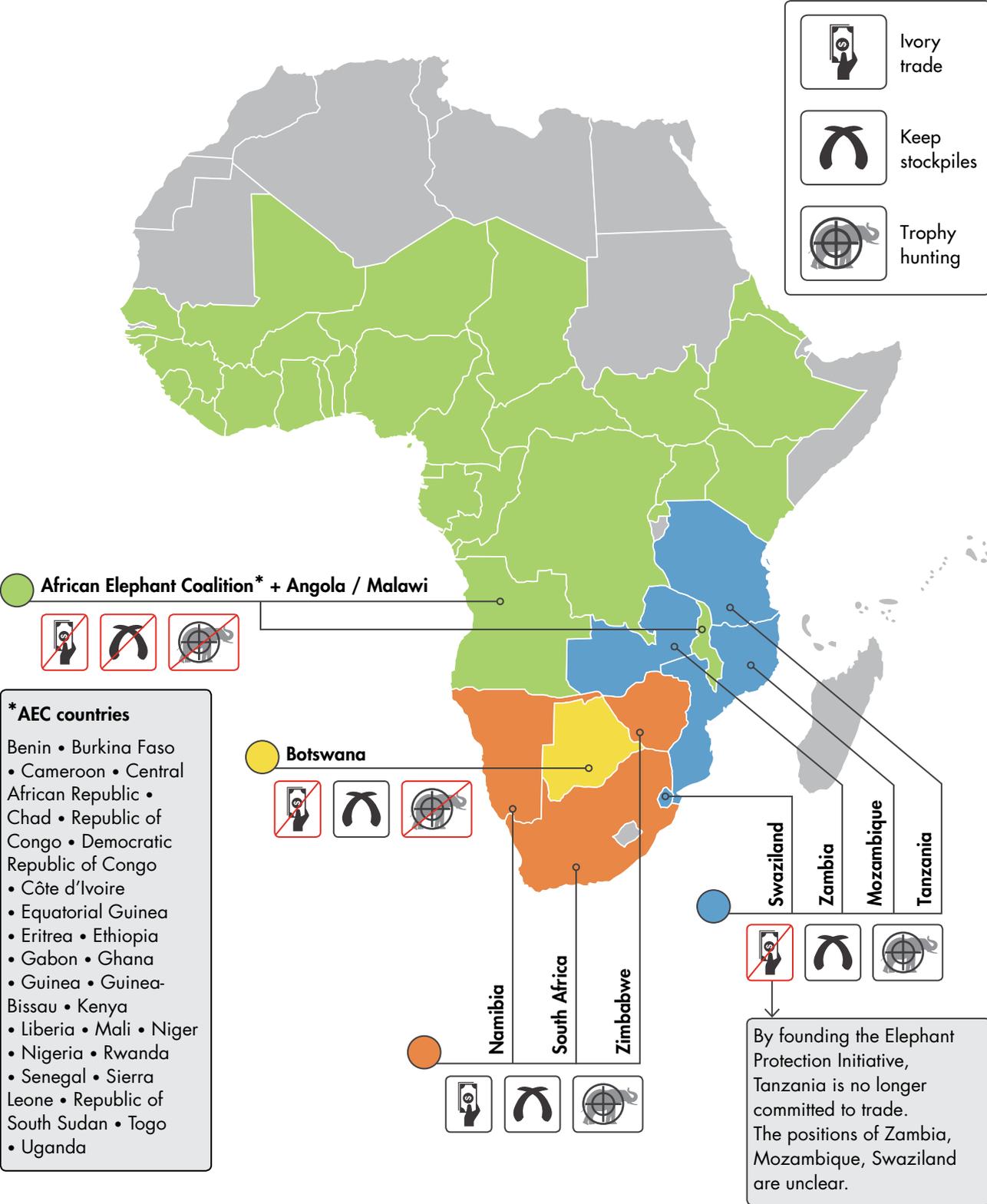
29   Statement by Thea Carroll, South African representative at the 66th CITES standing committee meeting, as reported in *The Southern Times*, 'SADC faces tough battle at CITES 17', 23 March 2016, http://southernafrican.news/2016/03/23/sadc-faces-tough-battle-at-cites-17/, accessed 15 June 2016.

30   SADC, *op. cit*.

31   European Commission, *EU position on certain proposals submitted to COP17 of CITES*, 1 July 2016, http://ec.europa.eu/transparency/regdoc/rep/1/2016/EN/1-2016-437-EN-F1-1-ANNEX-2.PDF, accessed 10 July 2016.

32   Zimbabwe Parks and Wildlife Management Authority, *Zimbabwe National Elephant Management Plan* (2015–2020), http://www.zamsoc.org/wp-content/uploads/2016/04/ZIMBABWE-ELEPHANT-MANAGEMENT-PLAN-APPROVED-FINAL-1.pdf, accessed 15 June 2016.

FIGURE 1 RANGE STATES: DIFFERENT APPROACHES TO CONSUMPTIVE USE OF AFRICAN ELEPHANTS

Ivory trade

Keep stockpiles

Trophy hunting

African Elephant Coalition* + Angola / Malawi

*AEC countries

Benin • Burkina Faso • Cameroon • Central African Republic • Chad • Republic of Congo • Democratic Republic of Congo • Côte d'Ivoire • Equatorial Guinea • Eritrea • Ethiopia • Gabon • Ghana • Guinea • Guinea-Bissau • Kenya • Liberia • Mali • Niger • Nigeria • Rwanda • Senegal • Sierra Leone • Republic of South Sudan • Togo • Uganda

Botswana

Namibia

South Africa

Zimbabwe

Swaziland

Zambia

Mozambique

Tanzania

By founding the Elephant Protection Initiative, Tanzania is no longer committed to trade. The positions of Zambia, Mozambique, Swaziland are unclear.

Source: Author's own work.

Map created by angelathomas68@gmail.com

heavily on elephant-hunting revenues to incentivise community beneficiaries through community-based natural resources management (CBNRM) programmes.[33] However, critics have pointed out abuses in their hunting industries, especially in Zimbabwe.[34]

Botswana

As the fourth Appendix II country, Botswana has historically taken a similar path on SU policy and elephant management to the three countries above. Elephant hunting in Botswana was the cornerstone of its CBNRM programmes, and the country engaged in both international once-off ivory sales in 1999 and 2008. In a major conservation policy U-turn, it banned trophy-hunting in 2013, and founded the Elephant Protection Initiative (EPI) in 2014, which proposes a permanent global trade ban. That said, it has taken a contradictory position by not destroying its ivory stockpile, although it 'committed to ensuring that such specimen[s] remain beyond any economic use'.[35] Over the past two decades Botswana has successfully shifted from a dependence on CU (hunting) to non-CU (tourism) on both state and communal land. There is still considerable debate, however, over the sustainability of the hunting ban.[36]

The major Appendix I range states in SADC: Tanzania, Zambia and Mozambique

Historically, CU has been a cornerstone of conservation policies in all three major range states, and they continue to implement elephant trophy hunting to fund conservation and incentivise rural communities. However, recent restrictions on the import of their elephant trophies into the US and the EU reflect widespread concerns about poor regulation, corruption and the drastic declines of some elephant populations due to

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33   Naidoo R *et al.*, 'Complementary benefits of tourism and hunting to communal conservancies in Namibia', *Conservation Biology*, 30, 2016, pp. 628–638.

34   USFWS (US Fish and Wildlife Service), 'Service suspends import of elephant trophies from Tanzania and Zimbabwe', Press Release, 4 April 2014, https://www.fws.gov/news/ShowNews. cfm?ID=2E6FF2A2-E10F-82BC-DAE08807810E3C6B, accessed 15 June 2016.

35   Statement by Botswana Ministry of Environment, Wildlife and Tourism, as reported in Cruise A, 'Namibia says no to destroying its huge ivory and rhino horn stockpile', *National Geographic*, 20 July 2015, http://voices.nationalgeographic.com/2015/07/20/namibia-says- no-to-destroying-its-huge-ivory-and-rhino-horn-stockpile/, accessed 11 July 2016.

36   See, for instance, Cornell M, 'Botswana's hunting ban deserves better', *National Geographic*, 13 October 2015, http://voices.nationalgeographic.com/2015/10/13/opinion-botswanas- hunting-ban-deserves-better-from-the-new-york-times/, accessed 8 August 2016. This was written in response to Onishi N, 'A hunting ban saps a village's livelihood', *New York Times*, 13 September 2015, http://www.nytimes.com/2015/09/13/world/a-hunting-ban-saps-a- villages-livelihood.html?_r=0, accessed 8 August 2016. For a further discussion on hunting, see Goldman J, 'What if we banned trophy hunting in Africa?', *The Conversation*, 23 October 2015, 'http://conservationmagazine.org/2015/10/what-if-we-banned-trophy-hunting-in- africa/, accessed 8 August 2016.

poaching.[37] Zambia's and Tanzania's applications for once-off ivory sales were rejected by the CITES parties at CoP15 in 2010. Facing severe poaching crises, neither Tanzania nor Mozambique is in a realistic position to seek a down-listing to Appendix II at the moment. Some of Zambia's populations are under severe poaching pressure[38] but overall the national population is increasing, which could potentially support a future down-listing, although Zambia has not officially indicated any intention to do so. Tanzania has joined the EPI but has taken the contradictory position of not destroying its stockpile, stating that it will be used for scientific research and as legal evidence in criminal cases against elephant poachers.[39] Zambia and Mozambique's unwillingness to join the EPI implies that both remain open to future trade opportunities.

African Elephant Coalition

The AEC is made up of 29 African countries outside SADC (26 of which are current elephant range states). Although some of these countries still have trophy-hunting policies, their elephant populations are under such severe threat that legal elephant trophy hunting is currently not practised, or is not allowed under the CITES export permit system. The AEC proposes a permanent global ivory trade ban, through implementation of the following five actions:[40]

- listing all elephants as Appendix I;
- closing all domestic markets globally;
- destroying ivory stockpiles;
- stopping the CITES Decision-Making Mechanism negotiation on a potential future trade; and
- restricting trade in live elephants.

Kenya does not support any CU, limiting the application of SU to photographic tourism, and has been a vocal advocate of the intrinsic value of biodiversity and elephants in particular. Although Kenya and Uganda have historically faced problems of corruption and human pressure on elephant ranges outside protected areas, their elephant populations are increasing, and they are considering non-culling alternatives to address looming

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37   European Commission, 'Main outcomes of the meeting of the EU Scientific Review Group of 15 September 2015', http://ec.europa.eu/environment/cites/pdf/srg_septembre_2015.pdf, accessed 10 July 2016.

38   Cruise A, ' Elephants wiped out on alarming scale in Southern Africa', *National Geographic*, 6 April 2016, http://news.nationalgeographic.com/2016/04/160406-elephants-wiped-out-alarming-scale-Southern-Africa/, accessed 10 July 2016.

39   Statement by Tanzanian Minister of Natural Resources and Tourism, as reported in ippmedia.com, http://ippmedia.com/en/news/tanzania-rejects-us-advice-destroy-ivory-stockpile, accessed 10 July 2016.

40   AEC (African Elephant Coalition), 'African nations call on the world to help them save African elephants', Press Release, 27 June 2016, http://www.africanelephantcoalition.org/wp-content/uploads/2016/06/Press-release.pdf, accessed 15 June 2016.

over-abundance of some populations.[41] Most other AEC countries are facing population declines over the medium term. Home of the largest remaining populations of African forest elephants, Gabon and the Republic of Congo are both firm supporters of the EPI, opposing ivory trade and elephant trophy hunting. Although not part of the AEC, Angola and Malawi are other significant range states that also do not implement any CU of wildlife.

Successful application of consumptive use policies

The application of CU policies in Southern Africa has been largely successful in preserving ecosystems (expanding the state-protected estate in South Africa from 6% to 8%);[42] saving some threatened species from extinction;[43] and generating socio-economic benefits for government and community beneficiaries. While revenues from legal ivory sales prior to 1989, and the two once-off sales thereafter, funded conservation efforts and contributed significantly to increasing elephant populations, trophy hunting has been the primary CU activity in Southern Africa.

Elephant trophy hunting can generate material benefits for local communities (cash, meat, jobs) and governments (cash, offset of land management and law enforcement costs). On public land, in some countries, elephant trophy hunting is vital in generating revenues to fund government wildlife agencies, and for justifying their existence in the context of growing human populations and demand for land. Providing long-term concessions to responsible hunting operators with an obligation to support the management and law enforcement efforts of national wildlife agencies can be an effective policy tool, especially where governments lack the resources or capacity to properly manage wildlife areas.[44] The devolution of land and wildlife rights through CBNRM programmes allows communities to assume ownership and accountability by directly contracting with hunting operators, and directly monitoring hunting quotas. Lindsey *et al*. state:[45]

> In parts of Zambia, Zimbabwe, Namibia and Tanzania, revenues from trophy hunting have resulted in improved attitudes towards wildlife among local communities, increased involvement of communities in CBNRM programs, requests to have land included in wildlife management projects, and in some cases increasing wildlife populations.

41   Litoroh M *et al*., *Conservation and Management Strategy for the Elephant in Kenya 2012–2021*, http://www.kws.go.ke/download/file/fid/1402, accessed 15 June 2016.

42   Castley G *et al*., 'Making conservation work: Innovative approaches to meeting biodiversity conservation and socio-economic objectives', in Suich H & B Child (eds), *Evolution and Innovation in Wildlife Conservation: Parks and Game Ranches to Transfrontier Conservation Areas*. New York: Earthscan, 2009, pp. 307–323.

43   Child B, *op. cit*.

44   Lindsey P *et al*., 'Economic and conservation significance of the trophy hunting industry in sub-Saharan Africa', *Biological Conservation*, 134, 2007, p. 463.

45   *Ibid.*

As at 2007, 1.4 million km² of land in sub-Saharan Africa was used for trophy hunting

From 1989–2001 Zimbabwe's CBNRM programme generated over $20 million in transfers to the participating communities, 89% of which came from sport hunting and up to 80% from elephant hunting in particular.[46] A recent study by Naidoo *et al.*[47] found that trophy hunting is a key conservation, economic development and anti-poaching tool in Namibia. They estimated that if trophy hunting in Namibia were to stop, communities would lose annual revenues amounting to $1 million, 500 tonnes of meat and 500 jobs, threatening the financial viability of the majority of Namibia's CBNRM conservancies. As at 2007, 1.4 million km² of land in sub-Saharan Africa was used for trophy hunting.[48]

FAILURES OF CONSUMPTIVE USE

Various domestic demographic trends and institutional dynamics (both domestically and externally) undermine the successful implementation of both CU and non-CU policies. Regardless, both the poor articulation and application of CU policies, and the lack of effective alternative non-CU management tools, have materially contributed to the current elephant crisis.

Corruption and mismanagement at all levels

CU policies may be impossible to implement effectively without minimum levels of good governance within a country. Bennett argues that[49]

> effective management of a legal ivory trade would require robust systems to be in place to ensure that ivory from illegally killed elephants cannot be laundered into a legal market. At present, that is not feasible due to corruption among government officials charged with implementing wildlife-related legislation. With organized criminal enterprises involved along the whole commodity chain, corruption enables the laundering of illegal ivory into legal or potentially legal markets. Poachers and traffickers can rapidly pay their way out of trouble, so the financial incentives to break the law heavily outweigh those of abiding by it. Maintaining reliable permitting systems and leak-proof chains of custody in this context is challenging, and effective management breaks down. Once illegal ivory has entered the legal trade, it is difficult or impossible for enforcement officers to know what is legal and illegal. Addressing corruption throughout a trade network that permeates countries across the globe will take decades, if it can ever be achieved. That will be too late for wild African elephants at current rates of loss.

46   Child B, *op. cit.*

47   Naidoo R *et al.*, *op. cit.*

48   Lindsey P *et al.*, *op. cit.*

49   Bennett EL, 'Legal ivory trade in a corrupt world and its impact on African elephant populations', *Conservation Biology*, 29, 1, 2014, pp. 54–60.

Status quo (partial global trade ban) is worst of both worlds

The CITES international ivory trade ban imposed in 1989 has been a 'partial global trade ban' because:

- the main domestic markets remained open to some extent;
- once-off sales occurred in 1999 and 2008;
- the prospect of future sales exists after the moratorium ends in 2017; and
- some populations are on Appendix II while others are on Appendix I (ie, split-listing).

Therefore, although many proponents and opponents of a legal ivory trade agree that the once-off sales 'experiment' has been a failure,[50] neither side can use the recent escalation in illegal trade and poaching to conclusively support their theories. The status quo sends confusing signals to the market about the stigma of buying ivory products and the future prospects of international trade, thereby encouraging both consumer and speculative demand. It enables the laundering of poached ivory both through legal domestic consumer markets and through the international sales of Appendix II countries. The inability to easily differentiate between ivory by age or country of origin undermines effective monitoring of permitting systems. In addition, the split-listing ignores the complexities of managing elephant populations that traverse national boundaries when different parameters apply to the same elephant depending on its daily movements. Thus, under the status quo, countries with weak governance will continue to face a vicious positive feedback loop: they are generally afflicted by the most severe poaching pressure but are unable to monetise their elephant populations through CU because of external constraints, and are thus neither incentivised nor capacitated to apply limited resources to effective law enforcement. The consequence of the split-listing is that elephant populations in countries with good governance are likely to survive while those in countries with poor governance are likely to be lost, along with the ecosystem biomes that they anchor.

> The consequence of the split-listing is that elephant populations in countries with good governance are likely to survive while those in countries with poor governance are likely to be lost, along with the ecosystem biomes that they anchor

Failure to channel benefit flows to legitimate beneficiaries

Elite capture of benefit flows from the ivory trade and hunting undermines the incentive mechanism inherent in CU policies. National wildlife agencies and rangers in particular lack the capacity to properly manage protected areas, allowing poaching to proliferate. Similarly, on communal land, if hunters do not pay the promised trophy-hunting revenues to communities or their share is too small compared to the portion paid to the government, communities have no incentive to respect land-use agreements.[51]

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50 Bennett EL, *op. cit.*, p. 1; Stiles D, 'Can elephants survive a continued ivory trade ban?', *A Voice for Elephants*, 15 September 2014, http://voices.nationalgeographic.com/2014/09/15/opinion-can-elephants-survive-a-continued-ivory-trade-ban/, accessed 25 May 2016.

51 Grijalva R, 'Missing the Mark: African Trophy Hunting Fails to Show Consistent Conservation Benefits', Democratic Staff of the House Committee on Natural Resources Report, 13 June 2016, p. 13.

Unsustainable trophy-hunting practises

Critics argue that the incentive for corruption is inherent in concession tendering and quota allocation, to the point that hunting cannot be successful where there is poor governance.[52] Non-scientific quota setting, poor monitoring of over-harvesting, abusive practises by hunters, and a lack of year-round law enforcement operations have all undermined the benefits of hunting.[53] Hunting can also hinder game-viewing experiences because elephants become scared of humans and vehicles, and the existence of hunting can increasingly reduce the tourism brand of a country or protected area.[54]

Over-abundance of elephants

The failure to set clear sustainability targets for elephants and control the negative ecological impacts of over-abundance reflects the misapplication of SU policies, especially in Southern Africa. While Botswana admits that, in some areas, it needs to 'accept that changes to the environment are of less importance than other issues regarding elephants (such as tourism)',[55] it has not clearly defined its sustainability objectives for elephants. In a 1990 management plan[56] it defined the maximum number of elephants as 60 000, but has never undertaken culling nor actively pursued alternative solutions. The current population of at least 150 000[57] results in the erosion of broader biodiversity and significant HEC.

Culling has traditionally been used and remains a stated policy option in other Southern African countries, but was stopped in the 1990s for a number of reasons, including the threat of a tourism boycott. As per South Africa's Kruger National Park Elephant Management Plan 2013–2022,[58] viable alternative tools now exist: relocation of excess elephants; birth control; and disturbances or fences to protect high-impact zones. But these are expensive and cannot yet address the problem at the scale required, especially over the short term. The most promising medium-term solution is range expansion through creating trans-boundary parks and wildlife corridors. Contrary to popular sentiment, scientifically motivated culling is not incompatible with a permanent global trade ban,

> In a 1990 management plan [Botswana] defined the maximum number of elephants as 60 000, but has never undertaken culling ... The current population of at least 150 000 results in the erosion of broader biodiversity and significant HEC

52   *Ibid.*, p. 16.

53   *Ibid.*

54   Telephonic interview, Colin Bell, co-founder of Wilderness Safaris and author of *Africa's Finest*, Cape Town, 2 June 2016.

55   Botswana Department of Wildlife and National Parks, *National Policy and Strategy for the Conservation and Management of Elephants in Botswana*, 2003, p. 9, https://cmsdata.iucn.org/downloads/bwstrategyfinal.pdf, accessed 15 June 2016.

56   Kalahari Conservation Society, 'Environmental philosophy', http://www.kcs.org.bw/index.php/about-us/environment-philosophy, accessed 10 July 2016.

57   Elephant Database, 'Summary totals for Southern Africa', http://www.elephantdatabase.org/preview_report/2013_africa_final/2013/Africa/Southern_Africa, accessed 10 July 2016.

58   South African National Parks, 'Elephant management plan: Kruger National Park 2013–2022', November 2012, https://www.sanparks.org/assets/docs/parks_kruger/elephants/knp-elephant-management-plan.pdf, accessed 15 June 2016.

as the ivory can be destroyed and meat given to eligible surrounding communities in recognition of their respecting poaching and land-use regulations. Critics of culling should recognise the opportunity costs of applying scarce funding to more expensive alternative interventions, in the context of broader elephant conservation or human development needs, and should thus compensate governments for refraining from culling for ideological rather than scientific reasons.

Poor application of non-consumptive use policies

The above failures of CU need to be assessed against the performance of alternative non-CU policies. Proponents of CU highlight the case of Kenya, which banned hunting in the 1970s to prioritise its photographic tourism industry, and subsequently experienced a collapse in wildlife numbers. Even in the flagship Mara ecosystem, which has enjoyed the benefits of Kenya's premier safari tourism brand, populations of most large mammals fell by 70%.[59] In other protected areas in Kenya, and especially on private land and communal areas lacking the unique tourism attributes of the Mara, large-scale land conversion to commercial and subsistence agriculture, and extensive poaching, have decimated wildlife numbers and led to the permanent loss of critical biomes.[60] That said, recent efforts by the Kenya Wildlife Service, private landowners and NGOs such as the Northern Rangelands Trust, a public–private protected area management organisation (PPPAMO) supporting CBRNM conservancies, is successfully slowing this trend, and elephant numbers are increasing again. Although mismanagement by wildlife officials and Kenya's human population explosion have undoubtedly contributed to this dire scenario, it has also played out in other African countries due to the failure of non-CU policies to adequately incentivise beneficiaries. From a biological sustainability perspective, even the negative externalities of poorly implemented CU policies may be a better outcome for elephants if better alternative policies are not realistically implementable for a specific country or ecosystem.

> Even the negative externalities of poorly implemented CU policies may be a better outcome for elephants if better alternative policies are not realistically implementable for a specific country or ecosystem

ALTERNATIVE OPTIONS: NON-CONSUMPTIVE LAND AND ELEPHANT USES

PUBLIC–PRIVATE PROTECTED AREA MANAGEMENT ORGANISATIONS

Donors and the global conservation industry have traditionally focused on scientific research and providing technical, financial and capacity-building assistance to national wildlife agencies, with limited direct involvement in protected area management. If the major constraints to successfully implementing CU policies are corruption and mismanagement, especially at national wildlife agencies, then alternatives need to be effective within a corrupt world.

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59   Ogutu JO *et al.*, 'Continuing wildlife population declines and range contraction in the Mara region of Kenya during 1977–2009', *Journal of Zoology*, 2011.

60   Martin G, *op. cit.*

Through public–private partnerships (PPPs), specialised PPPAMOs can:

- remove the burden of protected area management from constrained African governments;
- reduce corruption and improve performance through checks and balances from local communities, donors, government regulators, and the broader conservation industry;
- serve as effective vehicles for delivering social development benefits in countries with poor governance, especially to isolated, marginalised communities;
- improve governance and human security at the local level; and
- stimulate a conservation-led economy in remote areas.

Some African governments are at best reluctant to admit public sector failure and at worst view the PPPAMO as intervening in value extraction from protected areas, which underpins their corrupt patronage networks. The foreign diplomatic and donor communities should use their considerable influence over some African governments to encourage a wider application of this model. African Parks Network,[61] the Friedkin Conservation Fund[62] and the Northern Rangelands Trust[63] are examples of this PPPAMO model being implemented successfully across multiple protected areas in Africa.

Ideally, African governments should fund PPPAMOs directly,[64] as they do for infrastructure and social services PPPs, but in reality substantial donor funding is required. Actively managing a hypothetical 100 large elephant ecosystems while incentivising governments and communities to choose conservation could cost $100–300 million per year.[65] Theoretically, the global community enjoying a share of the ecosystem services and the intrinsic value of elephants and biodiversity should compensate a share of the net cost

The global community enjoying a share of the ecosystem services and the intrinsic value of elephants and biodiversity should compensate a share of the net cost (including opportunity costs) of maintaining these protected areas

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61   African Parks Network is an African-based non-profit organisation that manages 10 protected areas in seven African countries, covering 6 million hectares. Its vision is to manage 20 protected areas covering 10 million hectares across diverse biomes by 2020. (See African Parks Network, www.african-parks.org)

62   The Friedkin Conservation Fund is a non-profit organisation that manages 6.1 million hectares across five game reserves in Tanzania, running anti-poaching and community development programmes and supporting research activities. (See Friedkin Conservation Fund, www.friedkinfund.org)

63   Northern Rangeland Trust includes 33 community conservancies in Kenya, covering 4.4 million hectares. (See NRT [Northern Rangeland Trust], www.nrt-kenya.org)

64   The Rwandan government contributes $250,000 per year to the management of Akagera National Park, a PPPAMO between the government of Rwanda and African Parks Network. (African Parks Network, *African Parks Annual Report 2014*, 2014.)

65   In 2014, African Parks Network spent approximately $20 million managing 10 protected areas, including capital and operating costs and head office overheads. Individual park costs vary between $1 million and $3 million per park per year depending on size, level of demographic and poaching threats, and upfront capital rehabilitation costs required. (See African Parks Network, www.african-parks.org)

(including opportunity costs) of maintaining these protected areas,[66] which can be high when these areas could be exploited for higher-value activities such as mining, oil and forestry. However, various issues undermine the efficient allocation of funding within the current global conservation industry.

- High intermediation and transaction costs, with significant rent-seeking of donor funds by Western consultants and African government elites.
- Little accountability for converting public awareness of issues and scientific research into successful interventions in protected areas and illegal wildlife markets.
- Useful business principles are not being applied and private sector opportunities are not being sufficiently leveraged, possibly for ideological reasons.
- NGOs' marketing departments are setting conservation agendas instead of funding being allocated based on science and using conservation triage principles.
- Competing special interest groups are hijacking conservation funding and public platforms for ideological lobbying, with limited accountability for the underlying realities and unintended consequences in protected areas and markets.

Two trends are, however, driving disintermediation and hopefully more efficient capital allocation in conservation funding. The first is online crowd-funding for specific projects, interventions and beneficiaries from the public at large. In the second trend some of the world's 1 800 billionaires are now directly tackling critical conservation problems through philanthropy. Despite the under-performance of the REDD[67] forest carbon mechanism[68] some type of global 'biodiversity tax' mechanism is required to sufficiently fund PPPAMOs and/or national wildlife agencies, recognising the need to compensate legitimate beneficiaries of ecosystems for their provision of universal public goods.[69]

Some type of global 'biodiversity tax' mechanism is required to sufficiently fund PPPAMOs and/or national wildlife agencies

PHOTOGRAPHIC TOURISM

Photographic tourism has the potential to be a near-perfect conservation land-use activity. It is the primary land-use activity supporting the sustainability of elephant ecosystems in Kenya, Botswana and South Africa, and in some areas of Tanzania and Zambia. That said, it has failed to meet community and government expectations of benefit flows in many of the countries and protected areas where its benefits were heralded.[70] The tourism industry has high capital and marketing costs, low profit margins and cyclicality linked

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66   Caro T & TR Davenport, 'Wildlife and wildlife management in Tanzania', *Conservation Biology*, 2015, pp. 1–8; Hiedanpää J & DW Bromley, 'Payments for ecosystem services: durable habits, dubious nudges, and doubtful efficacy', *Journal of Institutional Economics*, 10, 2, 2014, pp. 175–195.

67   Reducing Emissions from Deforestation and Forest Degradation (REDD) is a UN-led initiative to monetise the value of the carbon stored in forests, thus incentivising their protection.

68   Fletcher R *et al.*, 'Questioning REDD+ and the future of market-based conservation', *Conservation Biology*, 30, 2016, pp. 673–675.

69   Leader-Williams N, *op. cit.*, p. 1.

70   See Chevallier R & R Harvey, *op. cit.*.

to the global economy and local political and security dynamics. Few protected areas (and very few communal areas) tick all the boxes of external factors[71] required to enable tourism companies to sustainably deliver sufficient benefits to beneficiaries. The result is concentrated investment in particular protected areas (eg, Okavango Delta, Serengeti-Mara ecosystem, and Kruger National Park) and disappointed beneficiaries in most other areas.[72] Good governance can enhance tourism's conservation benefits by cross-subsidising revenues from a protected area that generates a tourism surplus to a less successful protected area.[73] Botswana's successful conversion from trophy hunting to tourism is unfortunately not easily scalable to other range states with less governance and tourism attractiveness. Without substantial external support, tourism will not be a viable form of land use in much of Africa's elephant range states, and even with substantial support some ecologically critical biomes will never be suitable for tourism development, for example in much of Central and West Africa. Usually lacking the legal mandate and capacity to actively manage poaching and land-use threats, tourism companies are forced to rely on often imperfect national wildlife management agencies or community associations. PPPAMOs can help to initially stabilise an ecosystem and address acute threats, thereby creating an enabling environment for tourism investment later.[74] If tourism companies do not play a more proactive role in supporting some form of protected area management, they face the reality of a shrinking supply of wildlife and wilderness experiences to offer their guests in the future, or much higher ecosystem rehabilitation costs.

Despite its potential benefits, tourism needs to compete effectively with trophy hunting to deliver the incentives required for effective SU policy implementation. In the Namibian CBNRM programme, hunting delivered more cash and meat but tourism generated more jobs.[75] Trophy hunters pay higher fees per client than photographic tourists, usually require lower infrastructure investment and stay fewer nights, thereby generating less waste. Hunters are also more willing to visit destinations and countries where lower wildlife densities, unattractive scenery, extreme heat, tsetse fly and difficulty or cost of access hamper tourism development. Thus hunting can generate a higher surplus than

71   These are: (1) a wildlife product that guests want to pay to see; (2) a savannah safari (which is often more popular than a forest safari, with the exception of habituated great ape viewing); (3) a competitive destination brand (country or park, ideally both); (4) real and perceived security of guests; (5) a long open season that ideally overlaps with high demand periods of the target market; (6) ease of access to the lodging along the whole route from home on to international flights and down bumpy roads or bush airstrips; and (7) an enabling investment and political environment in the host country.

72   Newsome D *et al.*, *Natural Area Tourism: Ecology, Impacts, and Management*. Bristol: Channel View Publications, 2012.

73   For example, gorilla-viewing revenues from Rwanda's Volcanoes National Park are used to support management and community development activities in and around Rwanda's Nyungwe and Akagera national parks.

74   Looking to re-develop a new tourism destination, African Parks Network and the Rwanda Development Board jointly rehabilitated Akagera National Park, subsequently attracting tourism development, which is now funding the majority of the park's operating budget. (See African Parks Network, 2014, *op. cit.*)

75   Naidoo R *et al.*, *op. cit.*, p. 632.

tourism in areas of marginal tourism attractiveness.[76] Hunting is generally more resilient to global economic factors and local political and security shocks than tourism. Indeed, the unintended consequences of a hunting ban in the name of enhanced tourism development could be fatal for some ecosystems and elephant populations if improved benefits and management interventions do not materialise.[77]

NEW REALITIES IN A CHANGED WORLD

The escalation of a number of ongoing trends and recent events are shifting the momentum away from CU. Primarily, the changing external environment in consumer markets is forcing policymakers to adapt their approach, regardless of internal conditions in individual countries.

Corruption and poor governance

While this is not a new trend in Africa or globally, there is a growing recognition that corruption and poor governance undermine the applicability of a controlled legal trade, and that reducing corruption sufficiently is not possible in the timeframe required to save elephants.[78] The impact of poor governance is amplified by the demands of ballooning human populations on shrinking ecosystems, resulting in illegal harvesting rates far beyond sustainable thresholds in many populations, often leaving no scope for any form of legal CU.

Risk of not meeting demand under a legal trade scenario

There is inconclusive evidence that speculative demand caused by the scarcity value of ivory (due to the prospect of a permanent global trade ban) has been a major driver of price spikes and poaching recently, while underlying consumer product demand has been falling. Some argue that providing a reliable legal supply will remove such speculative activity.[79] Furthermore, if this is supplied at an artificially high price, then underlying consumer demand can be managed to meet the supply from current stockpiled ivory and ongoing supply from natural mortality. Finally, some of the revenues from this artificially high price can fund demand-reduction efforts. Although this economically sound theory has not yet been tested in practise, the downside risk if these assumptions do not materialise – higher ongoing consumer demand outstripping biological supply constraints – is arguably worse than the downside risks under an imperfectly implemented trade ban system. Requiring huge land areas, elephants cannot be farmed intensively on

The impact of poor governance is amplified by the demands of ballooning human populations on shrinking ecosystems, resulting in illegal harvesting rates far beyond sustainable thresholds in many populations, often leaving no scope for any form of legal CU

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76   Baldus R & A Cauldwell, 'Tourist hunting and its role in development of wildlife management areas in Tanzania', Proceedings of the 6th International Game Ranching Symposium, Paris, 6–9 July 2004.

77   Naidoo R *et al.*, *op. cit.*, p. 632.

78   Bennett EL, *op. cit.*, p. 1.

79   Stiles D, *op. cit.*, p. 1

the same scale as other large mammals (eg, rhinos), placing hard biological constraints on the supply of ivory and hunting trophies. Although the risk of speculative demand being supplied illegally from poaching remains a risk under both the legal trade and trade ban scenarios, it is arguably easier to identify and control under a permanent global trade ban.

IMPROVED PROSPECTS FOR DEMAND REDUCTION UNDER A TOTAL BAN SCENARIO

Successful demand-reduction campaigns (eg, for shark fin) and more focused approaches by dedicated demand-reduction organisations mean reducing consumer demand for ivory might be more achievable in the next decade than was previously assumed.[80] Although speculative demand for raw ivory is possibly playing a complex role, there are suggestions that a meaningful reduction in consumer demand for ivory products is already taking place in China and Japan, characterised by recent price falls for finished ivory products, apparently aided by the ongoing rhetoric from the Chinese government.[81]

CHANGING INFLUENCE OF EXTERNAL SPECIAL INTEREST GROUPS IN AFRICA

Anti-trade, anti-culling and anti-hunting lobby groups are exerting increasing influence over African policymakers, at the expense of the previously powerful trade and hunting lobbies in some consumer countries. More broadly, leading conservation and human development NGOs are taking a less favourable view of the potential conservation and human benefits of hunting. Incentivised by both direct financial support for conservation and the threat of tourism boycotts, some African countries have either removed CU from their formal policies (Botswana banned hunting in late 2013, for example) or effectively changed the application of management tools (elephant hunting is legal in Gabon but no permits are allocated).

RESTRICTIONS ON TROPHY HUNTING IN CONSUMER MARKETS

The US banned imports from Tanzania and Zimbabwe on the basis that it 'is not sustainable and is not currently supporting conservation efforts that contribute towards the recovery of the species'.[82] The EU has also restricted elephant trophies from additional countries[83] (eg, Tanzania and Mozambique) but continues to support hunting in countries with well-managed populations. Within the EU a wider debate is developing, with the momentum shifting against hunting (the Netherlands recently banned the import of

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80 WildAid, 'Evidence of Declines of Shark Fin Demand in China', Report, 2014, http://wildaid.org/sites/default/files/SharkReport_spread_final_08.07.14.pdf, accessed 15 June 2016.

81 In December 2015, Save the Elephants said its survey showed that the price of ivory on the illegal market fell from $2,100 to $1,100 per kg in a time span of 18 months, as reported in Save The Elephants, 'Sharp fall in the prices of elephant tusks in China', Press Release, 7 December 2015, http://savetheelephants.org/about-ste/press-media/?detail=sharp-fall-in-the-prices-of-elephant-tusks-in-china, accessed 10 July 2016.

82 USFWS, 2014, *op. cit.*

83 European Commission, 2015, *op. cit.*

all elephant trophies).[84] A total of 42 airlines have also stopped transporting elephant trophies.[85] In addition, there is extensive evidence of the trophy export and import permitting system being abused to launder illegal wildlife products.[86] The US has limited the import of elephant trophies to two per person per year[87] to prevent laundering. China banned elephant trophy imports until 2019, putting pressure on the US to do the same:[88] 'China also hopes the US will further reduce or ban the trophy hunting of elephants … [which] push prices up and trigger more elephant poaching.'

CLOSURE OF DOMESTIC IVORY MARKETS

The major ivory consumer countries are rapidly taking steps to close their domestic markets. In 2015, the US and Chinese presidents jointly pledged to enact 'near-total bans' on ivory sales, imports and exports. As part of the tit-for-tat dynamics that followed, the US placed an 'almost complete ban' on domestic trade in ivory, starting in July 2016.[89] China will apparently publish a timetable by the end of 2016 for halting its domestic commercial trade in ivory, and will possibly begin the implementation thereof in early 2017.[90] A major legal and illegal ivory trading hub, Hong Kong, has agreed to phase out its domestic market over five years by 2021. However, a number of Hong Kong officials, supported by a World Wide Fund for Nature study, are pushing to have the ban implemented within two years instead.[91] Vietnam is also under pressure from conservation organisations to close its domestic ivory market.[92]

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84   Humane Society International, 'Netherlands applauded for introducing EU's strictest ban on trophy hunting imports', Press Release, 29 April 2016, http://www.hsi.org/world/europe/news/releases/2016/04/netherlands-trophy-hunting-import-ban-042916.html, accessed 15 June 2016.

85   Humane Society International, 'More than 42 airlines adopt wildlife trophy bans after Cecil the lion's death', Press Release, 27 August 2015, http://www.hsi.org/news/press_releases/2015/08/42-airlines-adopt-wildlife-trophy-bans-082715.html, accessed 15 June 2016.

86   Grijalva R, *op. cit*.

87   USFWS, 'Revisions to the Endangered Species Act (ESA) Special Rule for the African Elephant', 6 June 2016, https://www.fws.gov/international/pdf/questions-and-answers-african-elephant-4d-final-rule.pdf, accessed 15 June 2016.

88   Zhou S, 'China to have timetable by year's end to cease all domestic trade in ivory', *China Daily*, 7 June 2015, http://usa.chinadaily.com.cn/epaper/2016-06/07/content_25641286.htm, accessed 15 June 2016.

89   USFWS, 2016, *op. cit*.

90   Zhou S, *op. cit*.

91   WWF (World Wide Fund for Nature), 'WWF study shows ivory trade in Hong Kong could be banned within two years, while government proposes a closure by 2021', Press Release, 24 June 2016, http://www.wwf.org.hk/en/?15860/Press-Release-WWF-study-shows-ivory-trade-in-Hong-Kong-could-be-banned-within-two-years-while-government-proposes-a-closure-by-2021, accessed 15 July 2016.

92   Save the Elephants, 'Vietnam's illegal ivory trade threatens Africa's elephants', Press Release, 19 July 2016, http://savetheelephants.org/about-ste/press-media/?detail=vietnam-s-illegal-ivory-trade-threatens-africa-s-elephants, accessed 22 July 2016.

On 14 June 2016 the EU Commission announced restrictions on all imports of African elephant ivory, with ongoing exceptions for trophies.[93] Historically the EU has allowed the export of pre-1947 legal ivory, which has been largely exported to China and Hong Kong. However, a 2014 report found that EU export certificates were used to launder illegal ivory.[94] Although France, the Czech Republic, Germany, the Netherlands, Slovakia, Sweden and the UK have stopped issuing ivory export certificates within their borders, not all members have completely banned the trade, most notably Belgium,[95] which has been criticised by some African range states as undermining trade ban efforts. With the EU under pressure to put in place a complete ban, the closure of the largest domestic ivory markets globally (China, Hong Kong, US, EU) will limit options for the Southern African countries to sell their legal ivory, even if this were to be allowed under CITES. In September 2016 the IUCN will debate the closure of domestic ivory markets as part of a broader assessment of elephant management and SU approaches.[96]

Support for pro-trade proposal unlikely at CITES CoP17

With proposals requiring a two-thirds majority vote from the 182 CITES members, and the three proponent Southern African states lacking significant geo-political lobbying power, it is highly unlikely that any pro-trade proposals will succeed[97] at CoP17 or beyond. In 2014 previous proponents of a legal ivory trade, Botswana and Tanzania, became sponsor range states of the EPI.[98] A number of countries around the world have destroyed part or all of their ivory stockpiles in symbolic support for a trade ban and the devaluation of ivory.[99] The 29 African countries making up the AEC have submitted a permanent trade ban proposal to CoP17. With conflicting statements, the EU's position has been unclear until recently, when it announced that it would oppose the AEC proposal to transfer all elephants to Appendix 1, thereby allowing the possibility of the four exempt countries' trading ivory in the future.[100]

> The closure of the largest domestic ivory markets globally (China, Hong Kong, US, EU) will limit options for the Southern African countries to sell their legal ivory, even if this were to be allowed under CITES

93   European Commission, Press Release, http://europa.eu/rapid/press-release_IP-89-630_en.htm?locale=en, accessed 20 July 2016.

94   Mundy V, 'The re-export of pre-convention/antique ivory from the European Union', TRAFFIC & European Commission, August 2014, http://ec.europa.eu/environment/cites/pdf/Ivory%20report_Nov%202014.pdf, accessed 15 June 2016.

95   Neslen A, 'African wildlife officials appalled as EU opposes a total ban on ivory trade', *The Guardian*, 6 July 2016, https://www.theguardian.com/environment/2016/jul/06/african-wildlife-officials-appalled-as-eu-opposes-a-total-ban-on-ivory-trade, accessed 16 July 2016.

96   IUCN, 'Key debates decided for IUCN World Conservation Congress 2016', 2 May 2016, http://www.iucn.org/content/key-debates-decided-iucn-world-conservation-congress-2016, accessed 15 June 2016.

97   Russo C, *op. cit.*

98   Elephant Protection Initiative, 'Tanzania', http://www.elephantprotectioninitiative.org/whos_involved/tanzania/, accessed 15 May 2016.

99   Alden C & R Harvey, 'The case for burning ivory', *Project Syndicate*, 29 April 2016, https://www.project-syndicate.org/commentary/kenya-ivory-stockpile-destruction-by-chris-alden-and-ross-harvey-2016-04, accessed 8 August 2016.

100   European Commission, 2016, *op. cit.*

> These four national populations have an increasing population trend (tbc for Zimbabwe) and do not meet the criteria for transfer to Appendix I. Recognizing the efforts made by Southern African countries to sustainably manage their elephant population and combat poaching, those countries should better be encouraged to pursue their efforts.

That said, the EU then takes a contradictory position that it will also not support Namibia's and Zimbabwe's proposals at CoP17 to resume trade 'given the continuous high levels of elephant poaching and illegal ivory trade'.[101] Despite the EU's current fence-sitting, there is a growing recognition that a split-listing is not ideal, producing uncertainty that is undermining consumer demand-reduction campaigns and collective action efforts among African stakeholders.[102]

ADAPTING SUSTAINABLE USE POLICIES TO A CHANGED WORLD

Adaptive management is a key aspect of the IUCN's Policy Statement on Sustainable Use: 'Making uses more sustainable means continually improving management as new challenges arise, which is captured by the term "adaptive management". This involves monitoring, assessment and applying the results by adjusting management regimes to achieve the desired result.'[103] How should African policymakers adapt to the new realities in a changed world?

FULLY SUPPORT A PERMANENT GLOBAL IVORY TRADE BAN

Maintaining a trade ban and closing illegal supply chains require good governance at all levels inside range states, at the multinational level and in consumer countries, but it is clearly a lower burden on governments than trying to manage a controlled trade in a 'second-best'[104] world. Given that major consumer domestic markets are closing and international markets are unlikely to re-open, to whom will the three Southern African countries sell their ivory? Their support of a ban will remove the uncertainty that is undermining consumer demand-reduction campaigns and efforts at collective action among African stakeholders. This should be enacted by closing all domestic markets; destroying national and private stockpiles in a co-ordinated fashion and on an ongoing basis; and co-ordinating demand reduction. Efforts to close down the illegal trade should be stepped up along the whole supply chain, including on online retail platforms and especially with speculators privately hoarding raw ivory.

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101 *Ibid.*

102 Harvey R, 'Risks and fallacies associated with promoting a legalised trade in ivory', *Politikon*, 27 June 2016, p. 16, http://www.tandfonline.com/doi/full/10.1080/02589346.2016.1201378, accessed 2 August 2016.

103 IUCN, 'Policy Statement on Sustainable Use of Wild Living Resources', *op. cit.*

104 Lipsey RG & K Lancaster, 'The General Theory of Second Best', *The Review of Economic Studies*, 24, 1, 1956.

APPLY SU POLICIES PROPERLY, CONSIDERING THE REGIONAL AND INTERNATIONAL CONTEXTS

Regardless of whether they have CU policies or not, all countries need to properly articulate and apply their SU policies to incentivise local stakeholders to support conservation land use and protect elephants. For example:

- improve hunting regulation;
- actively implement tools to reduce elephant over-abundance in specific populations;
- devolve rights to communities so they are incentivised to choose conservation as a form of land use;
- improve governance to ensure the promised benefit flows to communities and wildlife agencies are forthcoming;
- focus on key ecosystems and elephant populations to maximise chances of successful protected area management and reduce HEC (by removing elephants from isolated or high-conflict potential pockets); and
- improve trans-boundary co-operation and establish corridors to allow over-abundant populations to repopulate areas affected by poaching.

IMPROVE PROTECTED AREA MANAGEMENT

Without effective protected area management, including law enforcement to combat poaching and land-use infringements, biologically sustainable thresholds are likely to be exceeded regardless of the quantum of benefits generated by any economic use activity. The leading global conservation organisations should play a more active role in protected area management. African Parks Network has shown that the PPPAMO model can effectively 'hold the line' against habitat loss even in the most threatened countries and protected areas where tourism and hunting are not currently viable alternative forms of land use. Once these protected areas are stabilised through law enforcement and community development initiatives, then tourism and hunting should be attracted to reduce the burden on donor funding, allowing the PPPAMO to shift attention to other critically threatened ecosystems.

SUPPORT RESPONSIBLE PHOTOGRAPHIC TOURISM

Tourism needs substantial funding and risk mitigation support from donors and the global conservation industry to expand its impact at scale, and to genuinely meet the benefit expectations of communities and government. The tourism industry is confronted with a diminishing supply of intact wilderness areas, unless it can persuade tourists and funders to fairly compensate the legitimate beneficiaries for use of their land and elephants. Specifically, the tourism industry needs to acknowledge its dependence on effective national wildlife agencies, and should unlock partnerships with donor-funded PPPAMOs in weakly governed countries. The tourism industry should also allow for the use of culling when this is legitimately required to maintain broader ecological integrity, or should fund more expensive alternative tools. It must prove it can continuously out-compete the trophy-hunting industry for the use of each particular protected area or country based on its economic merits rather than on ideology, especially when landscapes are not aesthetically compelling.

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PROMOTE 'CONSERVATION HUNTING' ON COMMUNAL LAND AS A STOP-GAP SOLUTION

Despite the problems associated with poorly managed trophy hunting, without viable alternative conservation land uses hunting should still be considered as a potentially effective stop-gap solution to 'hold the line' on habitat loss, allowing the option of later ecosystem rehabilitation through PPPAMOs or tourism activities. Given that many CBNRM programmes are dependent on elephant trophy hunting, limiting the import of trophies to countries with good conservation and species governance could result in vast wilderness areas in countries with poor governance being converted to non-conservation land uses such as agriculture. The industry should promote 'conservation hunting' as a premium brand product, which is likely to be supported by hunters.[105] Trophy-importing countries and conservation organisations can help improve the capacity of communities and governments to better regulate hunting in countries with poor governance by, for example, setting quotas, enforcing monitoring regimes, and highlighting abusive or corrupt practises.[106] Faced with increasing global public sentiment against elephant trophy hunting in particular, the hunting industry needs to take a pragmatic approach to its role in ivory demand reduction, accepting tighter restrictions on the international and domestic movement of trophies. For example, taxidermists could make exact tusk replicas using 3D printing, after which the ivory would be destroyed along with national stockpiles, rather than being exported. But similar to the primary argument against the ivory trade, if the downside risks – undermining the reduction of consumer demand for ivory – are too high in a 'second-best' world then hunting should be also be banned as part of a permanent global ivory trade ban, and better alternative land uses sought to encourage beneficiaries to conserve elephants.

Faced with increasing global public sentiment against elephant trophy hunting in particular, the hunting industry needs to take a pragmatic approach to its role in ivory demand reduction

REQUEST EXTERNAL SUPPORT AS COMPENSATION FOR IMPACT OF EXTERNAL RESTRICTIONS

Southern African countries will carry the highest opportunity costs of external restrictions on CU policy application, although the benefits thereof will be enjoyed more broadly in Africa (especially by those countries facing the brunt of the current poaching crisis) and by special interest groups globally. In return for supporting a permanent ivory trade ban, Southern African countries should negotiate ongoing donor support for alternative SU applications to fund law enforcement, protected area management, tourism development and alternative livelihoods for communities. With the limited donor funding available for conservation issues globally, the global conservation industry needs to drastically improve funding-allocation efficiencies and become more accountable for concrete results within critical protected areas and wildlife markets. Ultimately, some form of biodiversity tax on global consumption, perhaps a more efficient version of REDD, is required to

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105   Lindsey P *et al.*, *op. cit.*, p. 464.
106   For example, an independent conservation non-profit organisation, the Niassa Carnivore Project, plays a critical role in monitoring carnivore-hunting regulations in Niassa National Park (Mozambique). See Niassa Carnivore Project, 'Our approach', http://www.niassalion. org/the-approach.php, accessed 15 June 2016.

fund protected area management at scale in areas where there are no alternative forms of conservation land use, recognising the universal 'public good' nature of ecosystem services.

CONCLUSION

Faced with corruption and poor governance, CU policies such as ivory trading, trophy hunting and culling have produced mixed results for elephant and ecosystem conservation and human development. The partial global ivory trade ban is causing confusion among African policymakers, local and international law enforcement agencies and ivory consumers, resulting in a perfect storm of speculative demand and poaching, without the theoretical benefits of either a controlled legal trade or a permanent global ban. Within this context, contrasting scenarios have emerged. Southern African countries with better governance have been effectively employing CU policies which benefit elephants and people, while in most other countries with poor governance, regardless of their SU approaches, elephant populations are facing a crisis. With the closure of the main consumer ivory markets, the unlikeliness of international trade proposals succeeding at CITES, and the benefits of trophy hunting being increasingly questioned, African policymakers should adapt their SU policies by:

• supporting a permanent global ivory trade ban and destroying ivory stockpiles;
• properly implementing SU policies to channel the promised benefits to legitimate beneficiaries and address elephant over-abundance;
• improving the governance of trophy hunting as a stop-gap form of land use in communal areas, but banning hunting if it undermines ivory demand reduction;
• promoting tourism to expand its scale to marginal areas; and
• improving the capacity of national wildlife agencies or soliciting support from PPPAMOs.

These adaptions shift the burden of incentivising beneficiaries and funding law enforcement to African governments and communities who live with elephants. However, the support of the non-African governments and special interest groups imposing these ivory trade and trophy-hunting restrictions on Africa is vital, or they will be complicit in the permanent loss of vast areas of elephant ecosystems. Ultimately, an efficient, global biodiversity tax is required to fund these adaptions.

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