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DownToEarth

SCIENCE AND ENVIRONMENT FORTNIGHTLY

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BLACK TO WHITE

Should ivory trade be legalised to
combat elephant poaching?

Seized ivory stock in
a government godown
in the Philippines

SHOULD IVORY TRADE BE LEGALISED?

International ban on ivory trade has neither reduced elephant poaching nor the volume of the illegal trade. Is it time the trade is legalised?

RAJESHWARI GANESAN in India, **ALOK GUPTA** in Hong Kong, **SIFELANI TSIKO** in Zimbabwe and **MANDI SMALLHORNE** in South Africa, analyse how such a decision will prevent elephant killings and financially empower communities in Africa

Zimbabwe has an ivory stockpile of more than 90 tonnes, worth US \$13 million, which it wants to sell

REUTERS





ALL OBJECTS are made of one hundred per cent genuine ivory,” says the shopkeeper at Ming Hing Arts showroom in Hong Kong’s Kowloon locality. Hong Kong is the world’s largest market for ivory and the showroom is one of Hong Kong’s oldest shops selling ivory artefacts. The shop proudly displays a board that reads, “In business since 1952”, and has artefacts ranging from 10,000 Hong Kong dollars (HKD) to 1,000,000 HKD. We show him a picture of Ganesha and ask how much would it cost to get the image carved into a 15 x 10 cm ivory idol. “It will be 98,000 HKD. Delivery in a month,” he says, adding, “50,000 HKD for ivory and 48,000 HKD for carving.” When we ask him when and where the ivory was procured, he curtly asks us to leave.

The shop is symbolic of the global ivory trade, which is illegal, but continues to thrive in countries such as China. Unofficial estimates put the annual volume of illegal ivory trade at US \$18 billion.

Ivory trade was banned in 1989 by the Convention for International Trade in Endangered Species (CITES), an international agreement between 181 governments to ensure that trade in specimens of wild animals and plants does not threaten their survival. The countries voted to place African elephants on CITES’ Appendix 1, which prohibits trade in ivory and other elephant parts.

However, the ban caused a vertical split in CITES, with one side demanding that the trade be declared legal and the other saying that legalising would be fatal for African elephants, which are the source of most of the illegally traded ivory in the world. The issue is likely to come to a head at the 17th Conference of Parties of CITES to be held at Johannesburg, South Africa, from September 24 to October 24. CITES is under pressure to devise innovative methods to allow ivory trade while ensuring elephant conservation.

Ivory trade has caused a rapid decline in elephant population in the continent (see ‘Ivory trail’ on p26). “The Hard Truth”, a report released by the World Wide Fund for Nature (WWF) in 2015, states that there were three million to five million African elephants at the beginning of the last century but the figure came down to 0.47 million in 2015. The situation deteriorated particularly during 2000–2015, when the number of elephants in central Africa declined by 62 per cent.

“Though habitat loss and conflicts with humans contributed to this decline, poaching for ivory has been identified as the biggest threat to elephants. Illegal international ivory trade has actually tripled since 1998,” Gavin Edward, director

of conservation at WWF, Hong Kong, told *Down To Earth*. Between 2010 and 2012, more than 100,000 elephants were poached in Africa, with forest elephants bearing the greatest impact, he said. A CITES meeting held in 2013 grouped China, Kenya, Malaysia, Thailand, Uganda, Tanzania, Vietnam and the Philippines as “parties of primary concern” where “poaching and/or illegal trade in ivory is at its peak”.

Penalised for saving elephants

While the CITES ban has failed to protect the elephant, it has led to a disquiet among African countries like Zimbabwe, South Africa, Botswana, Namibia, Zambia, Tanzania and Swaziland. These countries have managed to protect the animal and its population has increased beyond the carrying capacity of the land. They say that ivory trade should not be banned because they need revenue from ivory sales to fund conservation efforts. Many of these countries have stockpiles of ivory and they want to earn from its sale. Zimbabwe, for

To curb trade, many countries destroy all ivory confiscated from poachers or obtained from animals who have died natural deaths



Most of the illegally traded ivory in the world comes from Africa. This has caused a 90 per cent decline in elephant population in the continent over the past 100 years



COURTESY: IFAW

example, has a stockpile of more than 90 tonnes, worth nearly US\$13 million, obtained mostly from elephants that died a natural death. Rather than being able to earn from it, Zimbabwe spends almost the same amount (\$13 million) every year on retrieving, preserving, transporting and storing ivory, say wildlife officials. With the country's economy in a precarious situation, the government cannot afford such expenditure. Moreover, against a holding capacity (the maximum number of elephants that a country's ecosystem can support in natural conditions without affecting its equilibrium) of 45,000, Zimbabwe has an elephant population of around 100,000. Till about a decade ago, legal trophy hunting could provide the communities that manage forests under Zimbabwe's CAMPFIRE programme (see 'The trophy would not hold' on p28) enough money to survive in the harsh land where agriculture is not possible. But that is no longer the case (see 'Hunter hunted' on p36). The US has been campaigning against sport hunting and this has reduced our earnings

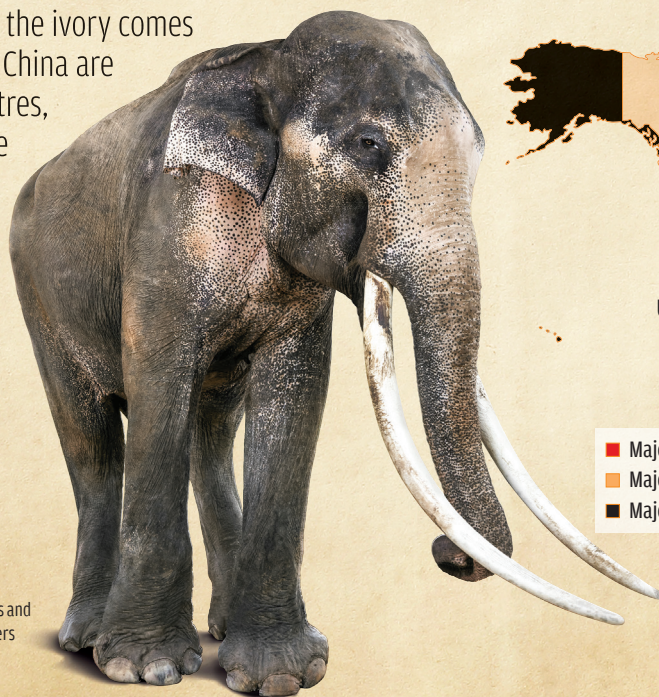
which we could have used for conservation efforts, says Zimbabwe's Environment, Water and Climate Minister, Oppah Muchinguri-Kashiri. Licensed hunters pay \$120,000 for an elephant and \$60,000 for a lion, while tourists pay \$3 to view animals, she says.

Prior to a ban on trophy hunting and carrying of ivory products on major US airlines, the elephant-hunting industry in southern African countries used to generate \$14 million annually. Now, instead of earning, they spend huge amounts on protecting the ivory stockpile. And it is not that the elephants are now safe. They continue to be killed because domestic trade is still allowed in countries like Zimbabwe. In the absence of options, communities resort to poaching even though the local market lacks the financial clout to consume large amounts of ivory. Muchinguri-Kashiri says the ban has actually increased poaching across the country. In 2015 alone, 11 suspected poachers were shot dead, 2,139 incursions were detected, and 1,354 local poachers and 129 foreign poachers



IVORY TRAIL

Unofficial estimates put the annual volume of illegal ivory trade at US \$18 billion. Most of the ivory comes from Africa. India and China are the major carving centres, and the US and Europe the main markets of finished goods

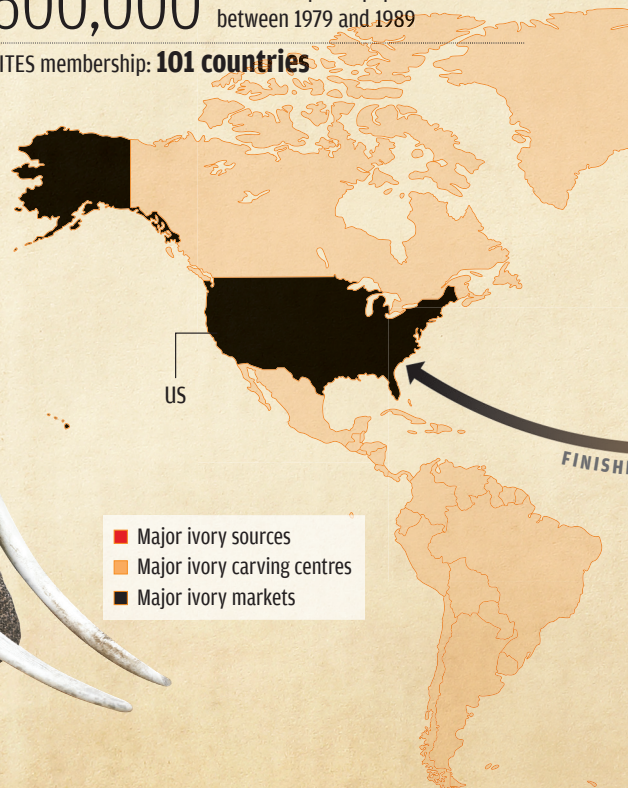


Infographics: Raj Kumar Singh
Compiled by: Rajeshwari Ganesan
Source: Reports by government institutes and non-profits, and published research papers

1989 The Convention for International Trade in Endangered Species (CITES) bans international commercial trade in elephant ivory. Zimbabwe, Botswana, Mozambique, Malawi and Burundi announce they would leave the convention so they could continue trading in ivory

600,000 African elephant population between 1979 and 1989

CITES membership: **101 countries**



were arrested. The country also lost 35 elephants to poaching the same year. The government has roped in the army to improve security in protected areas. But with inadequate revenue to support these operations, poaching is likely to continue. Muchinguri-Kashiri says she will present a report on poaching to the Cabinet soon. "We are holding more than 90 tonnes of ivory and we are losing some of the tusks," she says. "Poaching will continue because there is a market out there. If we are permitted to do sport hunting and trade in a legal way, it will help us a lot."

Overpopulation and poaching

South Africa faces the same dilemma. The country's elephants have grown in numbers to a point of overpopulation. Poaching cases are also on the rise. "The Kruger National Park has had the highest poaching incidence within the last 15 years during just the past six months," says Michelle Henley,

co-founder, programme manager and principal researcher at Elephants Alive, a research organisation based in Hoedspruit, South Africa. Twenty-two elephants have been poached from the park since September last year.

"Southern Africa—South Africa, Botswana, Zimbabwe, Namibia and Mozambique, effectively—is the last stronghold of the African elephant," says Henley. "Thirty years ago, this region had only 21 per cent of the elephants in Africa; today it has over 50 per cent. A wave of poaching has swept across Africa, starting in West Africa (which has less than two per cent of its elephants remaining) and taking 65 per cent of the elephants in Central Africa."

About 0.8 million elephants have been killed in the last three decades, according to the Wildlife Conservation Society, a New York-based non-profit. The non-profit launched a 96 Elephants Campaign in 2013, to highlight that 96 elephants

1997 Botswana, Namibia and Zimbabwe agree to an international ban on ivory trade, but want to sell their ivory stockpiles. CITES approves the sales based on the positive status of these countries' national herds. The "one-off sale" occurs in 1999 to a single CITES-approved buyer—Japan

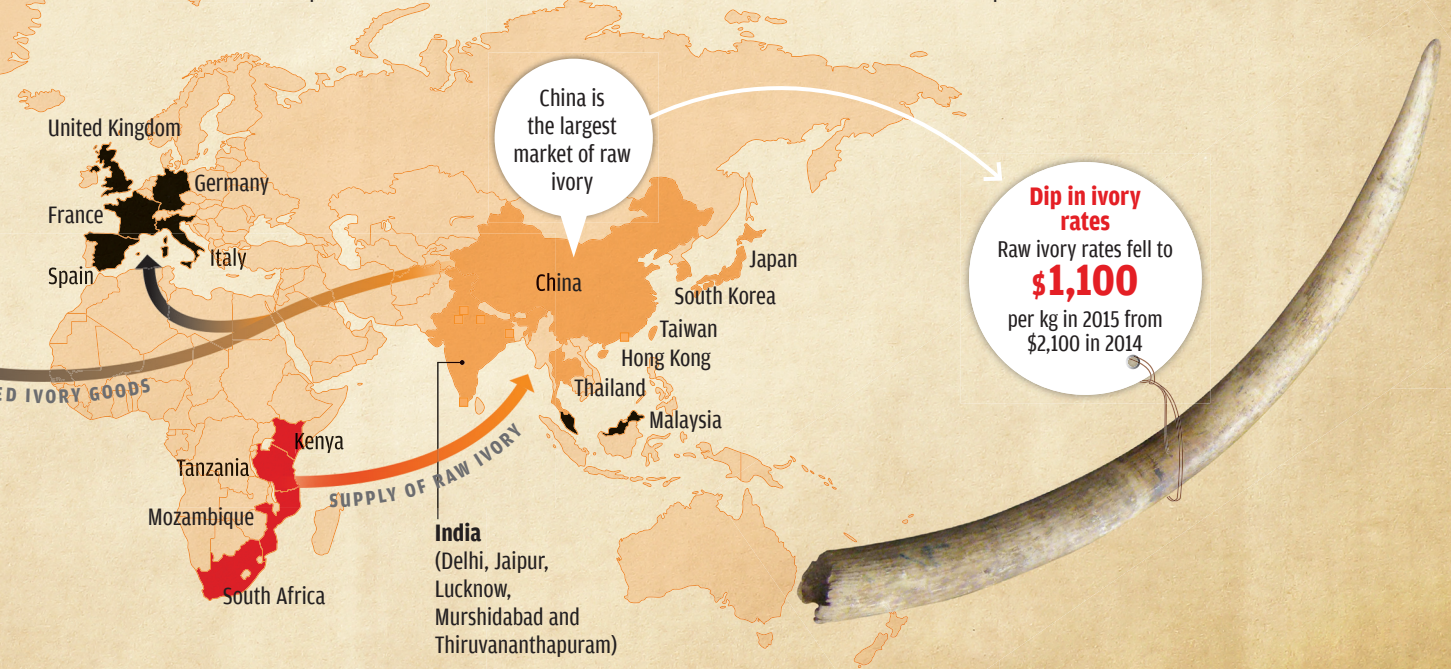
850,000 African elephant population in 1999

CITES membership: **136 countries**

2016 17th meeting of the Conference of the Parties of CITES to be held from September 24 to October 5, 2016, in Johannesburg, South Africa. The discussions are likely to centre on the possibility of legalising ivory trade

470,000 African elephant population in 2013

CITES membership: **181 countries**



were then being killed every day. The majority of these deaths were because of poaching. Trophy hunting contributes a very tiny percentage of elephant deaths, says Henley.

The rising elephant population is a problem because elephant herds can cause substantial losses if they enter farms. As far back as in 2008, the South African government had lifted the moratorium on the culling of elephants. At that time, the country's environment minister, Martinus van Schalkwyk, said that culling would be considered only as a management option of last resort. But culling has not been practised for years, and experts at the Kruger park say they are using natural methods—such as closing boreholes and allowing more natural patterns of movement to prevail by opening up the borders with Mozambique, for example—to keep the numbers down. They reckon the numbers have risen, but not by as much as they could have without these methods.

Like Zimbabwe, South Africa is in the possession of a fairly significant stockpile of ivory confiscated from poachers or collected following natural deaths. Currently, the country's stand on legal ivory trade is "officially undecided, with huge internal debate" in the Department of Environmental Affairs, says Ross Harvey, senior researcher at South African Institute of International Affairs, a Johannesburg-based non-governmental research institute.

There's a strong chance that South Africa will come out in support of legalising trade in ivory, says Chris Galliers, a unit leader in biodiversity at the Wildlife and Environment Society of South Africa, a Howick-based non-profit. There is "quite a prominent ideological stance that 'this is our ivory and we should be able to capitalise on it,'" says Harvey. Moreover, in certain pockets, poaching is the only option available to communities to survive. Though poachers get only about a tenth of

The trophy would not hold

Zimbabwe's CAMPFIRE programme to manage wild areas was a success. But now things have changed for the worse

AFTER INDEPENDENCE

in 1980, the Zimbabwe government established the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE). The aim was twofold: to increase income opportunities in dry and arid areas close to animal sanctuaries and to maintain the ecological balance. Income was to be generated through various forms of natural resource exploitation—tourism and sale of wild animals or

animal products. The land still belonged to the state, but benefit-sharing became more acceptable unlike in the colonial era.

Proceeds from the project were used for the benefit of communities. Under the programme, rural district councils were authorised to market wildlife resources in their districts to safari operators on behalf of communities. The operators would sell hunting safaris to mostly foreign sport hunters and eco-tourists, before

paying the communities a dividend.

But over the years, due to a combination of factors, both internal and external, the CAMPFIRE programme weakened, and stopped remitting the 60 per cent it was supposed to give village wards. Donor support withdrawal (USAID was a major funder but withdrew in 1999), poor leadership, conflicts between local authorities and communities, political interference and poor funding contributed to the

diminished role of CAMPFIRE.

At present, 58 out of 60 rural districts in the country are members of the programme, although just 16 of these are regarded as "major" CAMPFIRE areas in which income generation is primarily through big-game trophy hunting. CAMPFIRE director Charles Jonga says, "Currently, CAMPFIRE generates, on an average \$2 million in net income every year, which is much lower than estimated potential earnings for the programme."



The ban on ivory trade has caused a vertical split in CITES, with one side demanding that the trade be declared legal, and the other saying that legalising it would be fatal for elephants

the price, it still is a huge amount. For instance, one tusk, weighing 35–40 kg, gets a poacher over \$8,000 in Malawi, an east African country whose per capita income in 2015 was \$275. So it came as no surprise when assistant director of National Parks and Wildlife of Malawi, William Mgoora, announced in September 2014 that the population of elephants in the country had fallen to less than 2,000 due to poaching and illegal wildlife trade. "Illegal wildlife trade has been escalating, with recent evidence [suggesting] that organised international crime syndicate are targeting and exploiting Malawi as a source and transit route for their illegal wildlife trade," he had said. Low per capita income and rampant elephant poaching make Malawi an ideal country to source ivory.

Legal market will curb poaching

If the trade is legalised, there would be regular markets for ivory and this would help curb poaching. "Regulated sale of ivory can benefit conservation, as claimed by the countries with regulated markets [for instance, Zimbabwe, South Africa and Namibia]; perhaps more important, the results [of the study] also suggest that action to close unregulated ivory markets in Africa is needed to protect the elephant," Ronald Clarke, author of "The International Ban on Ivory Sales and its Effects on Elephant Poaching in Africa", a paper published in *The British Journal of Criminology* in 2009, told *Down To Earth*.

In an article published in *Conservation Biology* in 2014, Elizabeth L Bennett, vice-presi-

dent, Species Conservation, Wildlife Conservation Society, says, "The legal market would be supplied from animals in the wild now or recent past (e.g., sales from stockpiles of ivory and saiga horn), from captive or semi-captive animals (e.g., rhinoceros horn removed from live animals), or from farmed animals (e.g., bear bile, tiger bones). Numerous plant and animal species are already subject to a managed trade which, in many cases, is sustainable; legal trade dominates the market and illegal trade is minimal (e.g., ornamental plants, crocodilian skins)."

"In Africa, budgets are tight, and governments have bigger priorities such as funding health and education. At an international level, public sympathy for elephants rarely translates into cash, so donor funding is normally short-term and unpredictable," says Bob Smith, senior research fellow in conservation science, University of Kent, the UK. "This is why many African governments stockpiled ivory that was confiscated from poachers or came from elephants that died of natural causes before selling their ivory legally and using the money to fund conservation work," he explains.

"The passionate opposition to the trade partly comes from lack of awareness—many people think all ivory comes from poaching, whereas some comes from elephant deaths and herd conservation and management. Many people are also uneasy about the idea of making money from wildlife and are particularly uncomfortable when it involves animals as majestic as elephants," explains Smith.

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2015 study sponsored by the Wildlife Conservation Society, author Daniel Stiles of the International Union for Conservation of Nature, argues that “Closing the legal market will not make the black market disappear; if anything, it will grow larger... There are more than enough elephants to supply a legal market from natural mortality without illegally killing a single elephant—if the ivory items are kept expensive,” which, he says, can only be assured if there’s a legal market.

How to legalise?

The task is to chalk out the road map to legalise the trade. There are a few examples to learn from. Take, for instance, crocodile farming. With declining wild populations in the 1960s and 1970s, crocodile farming began to gather momentum in as many as six countries—Zimbabwe, Australia, Papua New Guinea, Indonesia, Venezuela and the US. During this time many countries enacted legislations to protect crocodilian population, and CITES was enacted in 1975 to regulate trade in wild species. Crocodile farming was seen not only as a way to reduce the pressure on the wild populations, but also as a means through which commercial incentives for the conservation of crocodilians could be generated.

By late 1970s and 1980s many programmes were being developed, based on the sustainable use of crocodilians to generate conservation benefits for several subspecies, including the Nile crocodile, Saltwater crocodile, American alligator, Spectacled Caiman and New Guinea crocodile. As all species of crocodilian are listed on the CITES Appendices, international trade is regulated. Countries that are signatories to CITES, and which utilise wild crocodilian resources, must demonstrate that the use does not threaten the survival of the species. This typically involves some sort of monitoring of the wild population to assess the impacts of use, and regulation of products in trade. For example, all crocodilian skins in international trade must have a uniquely numbered, non-reusable tag attached to them—this allows “legal” skins to be easily identified. With only farmed crocodiles being used to meet the demand for meat and leather, the population in wild has increased considerably. According to a 2015 report by the UNEP World Conservation Monitoring Centre, the population of crocodiles in the world has increased from 0.3 million in the 1960s to 2.5 million in 2013.

China’s successful breeding of tigers in captivity is another example that can be followed. Trade Records Analysis of Flora and Fauna in Commerce (TRAFFIC), the wildlife trade monitoring network,

In Hong Kong, nearly 242 tonnes of ivory was sold between 1990 and 2008, an average of over 13 tonnes per year



Closing the legal market will not make the black market disappear. It will grow larger. There are enough elephants to supply a legal market from natural mortality

indicates that between 2000 and April 2014, at least 1,590 tigers were poached around the world. In the same period, the number of captive tigers in about 200 farms in China soared from less than 1,000 to 6,000.

Though there are claims that the animal is ill-treated in captivity, China’s tiger farm industry vouches that the trade in captive animals helps to relieve the pressure on wild felines. Terry Anderson, executive director of Property and Environment Research Center, a US-based non-governmental organisation that looks at market-based approaches to conservation, feels that “Regulated tiger farms could provide enough tiger products to reduce the pressure on wild tigers from poaching. It would be wrong to say that by eliminating the market we eliminate the demand for tigers.” Anderson adds that the focus on the issue of killing the animals means many animal rights activists may lose sight of the potential of what he calls a “conservation-commodity solution”.

These examples show that the demand for ivory too could be met by farming. It is also said that the tusks of captive elephants are more in demand because of their off-white buttery colour. The tusks of wild elephants have black striations and the artefacts made of wild tusks are considered inferior. Countries with sizeable elephant populations can consider the option. In Zimbabwe, South Africa,





REUTERS

and Botswana, for example, people already farm elephants on ranches for trophy hunters.

The naysayers

Though there have been a lot of arguments in favour of legalising ivory trade, not everyone is convinced that it would help matters. The proponents of legal ivory trade say that allowing sales of stockpiles would flood the market with ivory and bring the price down. But this did not happen in 2008 when CITES allowed African countries to auction their stockpiles and China and Japan bought it in significant amounts. Even pre-1990 ivory was allowed to be sold in this one-time sale. In fact, this sale of ivory is said to be the reason for the continued decline in elephant numbers. George Wittemyer and five other researchers in their study “Illegal killing for ivory drives global decline in African elephants” highlight that illegal killing of elephants in Africa increased significantly after 2008 and correlated strongly with the local black market ivory price and increased seizures of ivory destined for China. The study, which was published in *Proceedings of the National Academy of Sciences* in 2014, says that in Africa 29,124 tuskers were killed in 2010 and the figure increased to 41,044 in 2011. Li Zhang, professor of ecology at Beijing Normal University, China, says that CITES’ move to auction ivory stockpile proved fatal for

India and ivory trade

AS PER the last countrywide elephant census held in 2007-08, India has over 27,000 elephants and the country is one of the main ivory carving centres of the world. India has also had its share of poaching cases. According to Wildlife Crime Control Bureau of India, about 30 elephants were poached in August 2015 from Kerala and Tamil Nadu alone. According to Raman Sukumar, senior elephant biologist at the Indian Institute of Science, Bengaluru, around 1,000 elephants were poached from the country during 1990-2015. India is a part of CITES and is against removing the ban on international ivory trade despite having an ivory stockpile of around 25,000 kg, worth over \$275 million, stored with the forest departments of various states.

African elephants. “The auction opened up the diminishing ivory market and its effect is still continuing with rampant poaching of elephants,” Li says. Even the decision to ban only the post-1990 ivory is now considered short-sighted. “It’s extremely difficult to differentiate between post- and pre-1990 ivory,” says Gavin Edward. He says that CITES may not have thought of this problem while imposing the ban.

"Legalising ivory trade will not end the problem," says Henley. "As long as there is ivory available, the killing will continue." Most of the illegal trade is, in fact, apparently happening at the less expensive end of the market, with seizure data showing enormous amounts entering China, explains Harvey. Henley says, "If you open up the market, you risk unintended consequences which could be disastrous for the elephant." She adds, "It is poverty and unemployment that make poaching so uncontrollable. With the best of intentions, people around the world pour money into increasing the guns and protection in vulnerable areas—but to me, that's addressing a symptom and not the cause. More money should be going into community development and education, raising awareness of the value of this wildlife to the community."

There is also a need to bring the demand of ivory down. "Ivory is a status product—it has no medicinal use," says Henley. "When you know it is a social status artefact, what you need to do is shame it."

Ivory trade is unlike any other industry, says Harvey. There isn't enough data to understand the possible consequences of a legal trade. "We have to ban the stuff, we have to enact strong international law and enforcement efforts."

Globally, a lot of effort is being made towards continuing the ban on the trade. Even Hong Kong has succumbed to the pressure. This January, Leung Chun-ying, head of Hong Kong's administration, announced plans to ban ivory trade. At a press briefing held after the announcement, Leung said, "We will take steps to totally ban the sale of ivory in Hong Kong... As to the matter of timing, we will do it expeditiously, as quickly as we can, but this will require legislative amendments and that will be a matter for the Legislative Council."

The prices of ivory are already going down. In December 2015, a new research to be published by Save the Elephants, a UK-registered non-profit based in Kenya, indicated that the price of illegal raw ivory in China has almost halved over the past 18 months. The value of raw ivory in Beijing had tripled in the four years up to 2014, reaching an average wholesale price of \$2,100/kg, but by November 2015 this had dropped to \$1,100, as revealed in the new study by experts on ivory markets, say Lucy Vigne and Esmond Martin, authors of the study. This is because of the growing awareness in China about the impacts of buying ivory and the slowdown of the Chinese economy, say the researchers in the study.

There is huge pressure on China too to ban ivory

trade and President Xi Jinping has already constituted a working group to prepare an effective ivory ban policy. "The government has apprised ivory carvers and traders to exhaust their stock within 12 months. After that ivory permits won't be renewed," Li said. It means that the domestic market of ivory in China will be abolished by the end of next year. Li, however, says that such country-wise ban will have a very limited or no impact on elephant poaching. He points out that China and Hong Kong might have huge stockpiles of ivory, but the US and many European countries also have hundreds of tonnes of ivory brought through trophy hunting. Though US President Barrack Obama has taken a tough stand on the trade of endangered species, only three of the 50 states in the US—New York, New Jersey and California—have banned it, Li adds. This despite a recent US-China agreement which, according to a White House press release issued during Chinese president Xi Jinping's visit in September 2015, says, "The United States and China commit to enact nearly complete bans on ivory import and export, including significant and timely restrictions on the import of ivory as hunting trophies, and to take significant and timely steps to halt the domestic commercial trade of ivory."

Li advocates for a complete global ban with governments buying the entire stock of ivory to put an end to elephant poaching. "If China is serious about the ban, it would buy the entire stock of ivory from the market and donate it to museums. No ivory in the market will end ivory trade," he says. He calculates that going by the current price of ivory at \$1,350 per kg, and adding inventory and storage expenses, China will have to invest \$84 million to buy raw ivory and another \$500 million to purchase carved ivory. "These pieces can be conserved in a museum as an educational initiative to teach children about wildlife crime and how China ended it," Li adds. He advocates similar initiatives by all the countries.

"Ivory is not used to make any life-saving drugs. The only purpose is to carve statues and make seals. There are already suitable alternatives to ivory and I think totally banning ivory trade should be the answer," says Jose Louies, Head, Enforcement & Law Division, Wildlife Trust of India. "Ivory is not something without which we cannot live and farmed ivory will only increase the poaching," Edwards says.

This does leave the question of what is to be done with the increasing elephant population in the African countries that have successfully protected elephants. ■

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Rather than being able to earn from its ivory stockpiles, Zimbabwe spends \$13 million every year on retrieving, preserving, transporting and storing it



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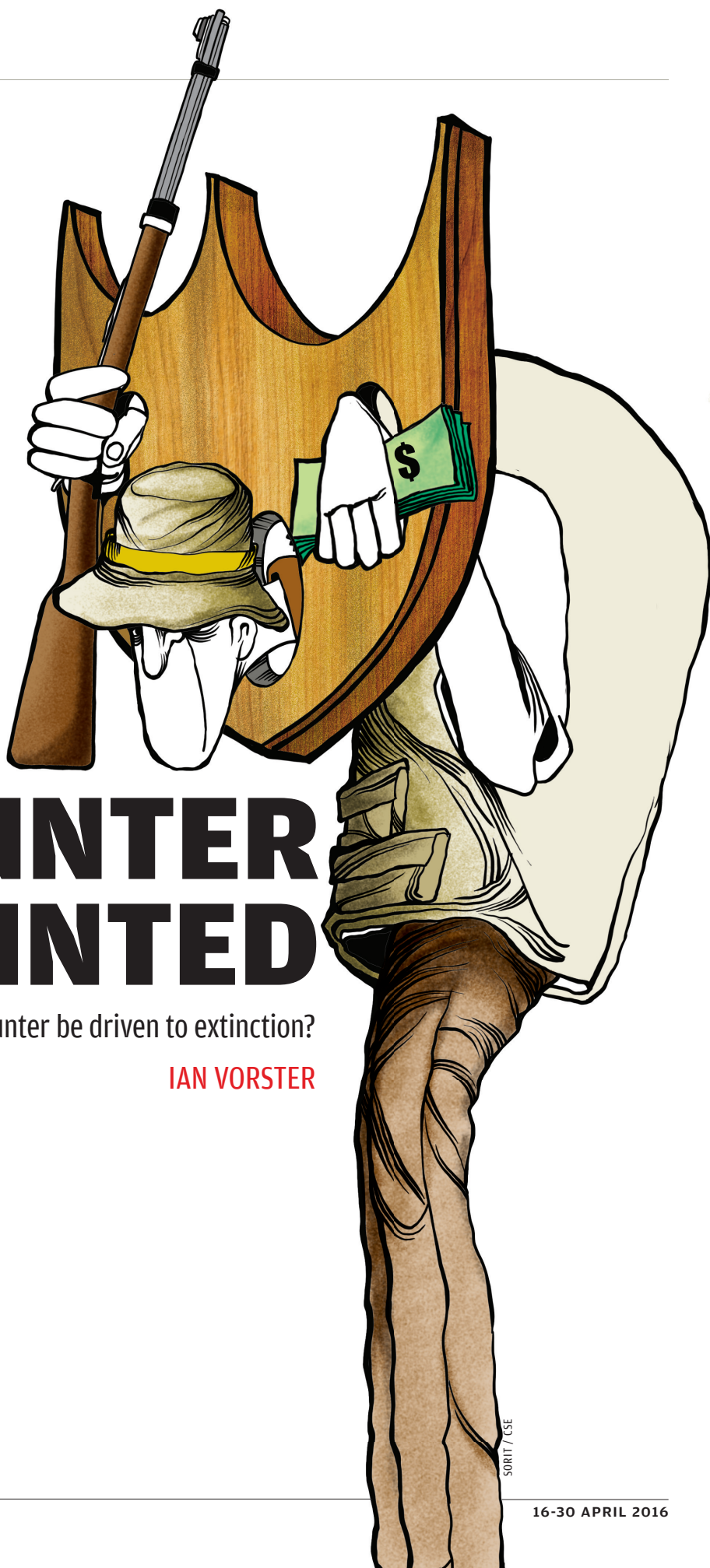
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Should the trophy hunter be driven to extinction?

IAN VORSTER

A **BLACK RHINO** in Namibia, a majestic elephant outside Gonarezhou National Park in Zimbabwe, and Cecil the lion: it seems like 2015 was the year of the trophy hunter. As western society digested this shopping list of threatened and endangered species, members of the scientific community, conservation practitioners, hunting associations and ecotourism operators continued their acrimonious and long-standing debate around one question: should the trophy hunter be driven into extinction?

Now would be the time to answer that question—in December 2015, the US Fish and Wildlife Service announced that lions are now protected under the Endangered Species Act of 1973, something that prevents the import of trophies to the US, the nation that leads the market.

Wildlife filmmaker and photographer Dereck Joubert runs camps in Botswana's Okavango Delta. When asked what he considers to be the solution to the problems faced by a nation like Zimbabwe, with its recent abysmal conservation history, Joubert, who is also the founder and chairman of the National Geographic Big Cats Initiative, said, "Follow the Botswana model—increase high-value low-volume tourism; phase out high-volume tourism by clustering it into limited areas; ban all big cat hunting, and let the species grow back; convert hunting areas into ecotourism concessions; encourage donor funding of parks and projects in parks."

The view that trophy hunting is detrimental to species is also supported by a paper written by Andrew Loveridge (the researcher who collared Cecil) in which mortality among lions between 1999 and 2004 in Hwange National Park, Zimbabwe's largest gaming reserve, was examined. The study, published in *Biological Conservation* in 2007, was designed to measure the impact of sport hunting beyond the park on the lion population within the park. While hunting is not allowed inside the park, it is permitted in the safari areas that surround it. The researchers tagged 62 animals (male and female) and found that sport hunters in the safari areas surrounding the park killed 72 per cent of tagged adult males. That is unsustainable.

There is also the view that money earned from trophy hunting can finance conservation efforts. Johnny Rodrigues, director of the Zimbabwe Conservation Task Force, which carries out much of the nature conservation responsibilities in the country, says trophy hunting of lions might contribute to

conservation efforts if certain parameters are kept in place, such as legal limits, buffers around national parks, no illegal baiting and more. "But the problem is that before issuing hunting permits, you need to know the wildlife population, and the government doesn't have that information." It seems intuitive that if you are going to shoot an animal for its cape, you want to know if that kill will hasten extinction of the species.

Paying to kill

Hunters have always said that they pay for conservation. In support of this, the Safari Club International has a link to a *New York Times* Op-Ed posted on their website. Written by Tanzania's most senior wildlife conservation official, Alexander N Songorwa, the article says, "Hunters pay \$9,800 in government fees for the opportunity [to hunt]. An average of about 200 lions are shot a year, generating about \$19.6 million in revenue. All told, trophy hunting generated roughly \$75 million for Tanzania's economy from 2008 to 2011." This income supports conservation in 26 game reserves, claims Songorwa.

Markus Borner, former director of the Frankfurt Zoological Garden, Germany, who oversaw conservation programmes in Tanzania, comments, "It is not trophy hunting that is threatening the survival of lions in Africa. It is mainly the loss of habitat due to fast growing populations that is reducing wildlife." Borner then drives home an essential element of the hunting argument, "Whatever one thinks about the moral of trophy hunting, the industry is essential if the large reserves are to survive, not just in Africa but also in Alaska."

Adri Kitshoff, CEO of Professional Hunters' Association of South Africa, says that the country has an estimated 20.5 million animals that can be hunted, with the off-take through trophy hunting in 2013 being just 0.002 per cent of that wildlife. Although this generalises the differentiation of species, Kitshoff emphasises, "It just goes to show how sustainable trophy hunting is in South Africa, and how well our natural resources are being managed. It creates incentives for our people to look after our animals by negating competition with wildlife for land..."

Communal benefits

Professional hunting associations are also quick to mention communal programmes that benefit from trophy fees. There are three primary examples—CAMPFIRE in Zimbabwe, ADMARE in Zambia, and



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the Communal Conservation Program in Namibia.

The director of Zimbabwe's CAMPFIRE programme, Charles Jonga, says, "Our information shows that communities are receiving 55 per cent of income directly from safari operators. We are unable to determine at this stage what the implications of this are on wildlife monitoring and protection..." Some of this obfuscation may be due to corruption, which has also been blamed on a history of violence and colonialism.

Regarding the CAMPFIRE figures, Vernon Botho, a wildlife conservation ecologist in Zimbabwe, says, "You will see that it is not that easy to arrive at an amount that each individual in a community would potentially receive. The number of people, in the case of CAMPFIRE, is often just too many to make this meaningful. So, one has to define what is meant by a 'community'. Are there several thousand people in a village, as in Tanzania and Mozambique, or just a few families, as in Namibia or Botswana?"

So for the trophy-hunter's fees to support conservation, the issue appears to be how to define what is meant by "community" and then to develop incentives at the community level to encourage the conservation of wildlife. Has this been done?

The director of southern Africa's World Wide Fund for Nature, Chris Weaver, says yes. He points to Namibia's highly respected community conservation programme. "The market-based approach to conservation has dramatically altered the mindset of communities from animosity to that of embracing wildlife as a livelihood asset." Weaver provides guidance to conservation partner organisations for whom the term "community" normally means just a "few families".

So, what's the answer?

Allow the trophy hunter to go extinct? Perhaps the best person to answer that question is an African village resident. In an article published in *The New York Times* on September 12, 2015, Jimmy Baitsholedi Ntema says, "Before, when there was hunting, we wanted to protect those animals because we knew we earned something out of them. Now we don't benefit at all from the animals. The elephants and buffaloes leave after destroying our plowing fields during the day. Then, at night, the lions come into our *kraals* [cattle enclosures]."

Shifting ownership and responsibility over wildlife resources to communities, many of the specialists say, will cultivate a sense of proprietorship, provided it offers more than the alternative forms

of land use. Michael H Knight, the chair of IUCN's African Rhino Specialist Group and the director of science for South African National Parks, offers a concrete solution to the mess of corrupted countries, corporate concerns, and complicated caveats. "There is a need for certification of hunting concessions to promote a better hunting ethic. I would also push for the best possible value through some sort of ticket system for lions, leopards, elephants, buffalo and rhino," he says.

That would be similar to the Forest Stewardship Council brand seen on many wood products in the US, where certification ensures that products come from responsibly managed landscapes. Knight adds, "By this I mean that the hunting associations will only patronise those concessions, and the professional hunters and outfitters that sign up to the certification system."

Rosie Cooney, the Chair of the IUCN's Sustainable Use and Livelihoods Specialist Group, summarises, "We need to move towards such a certification system, and we need the big, developing-world based hunting organisations to show leadership on this. Otherwise poor practices, corruption, and unsustainability that plague some parts of the hunting world, will completely tarnish the really excellent examples of good practice. Currently, in most areas where this high value tourist hunting is active, there are no other land uses that make wildlife, and wild areas as valuable to people as hunting. If the hunting goes, it will hasten the vicious cycle of persecution of wildlife, agricultural encroachment, and de-gazetting of protected areas."

But not everyone is of the same view. Regarding the role of revenue raised from trophy hunting, lion researcher Craig Packer comments, "It's a myth that sport hunting raises enough money to conserve lion habitats. A trophy lion costs about a million dollars to protect through its life. Twenty hunters should each pay \$50,000 for a lottery tag to shoot one six-year old male—if this isn't done, all the land set aside for sport hunting will lose its lions in the next 20 years, so hunting will disappear anyway." And the trophy hunter would follow.

It seems incongruous to have to roll this boulder of trophy hunting up the hill of western sentiment, when in effect the same Sisyphean task has to be accomplished for all of biodiversity using ecosystem services, or with carbon trade-off plans for climate change. As unpalatable as it might be, the strategy needs consideration. ■

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