RECONCILING COMPETING POLICIES FOR COMBATTING WILDLIFE TRAFFICKING AND PREVENTING ZOOONOTIC PANDEMICS

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Introduction

The planet is currently experiencing alarming levels of species loss caused in large part by intensified poaching, stimulated by a greatly expanding demand for animals, plants, and wildlife products. The rate of species extinction, now as much as 1000 times the historical average and the worst since the dinosaurs died out 65 million years ago, deserves to be seen, gravely exacerbated by climate change, as a global ecological catastrophe meriting high-level policy initiatives to address its human causes. In addition to irretrievable biodiversity loss, wildlife trafficking can also undermine human security of forest-dependent communities, cause local, national, and global economic losses, and even pose threats to national security (Felbab-Brown, 2017).

As the coronavirus pandemic dramatically highlighted, poaching and wildlife trafficking – as well as unmonitored legal trade in wildlife – also pose enormous threats to public health and global economies. As of February 1, 2021, COVID-19 has claimed over 2.2 million lives globally and infected 103 million people (Felbab-Brown, 2021), a number that kept increasing catastrophically throughout the spring of 2021. Twenty years of poverty reduction efforts have been wiped out, with as many as 150 million people pushed into extreme poverty in 2021; both the disease and the economic effects persisted well into 2021 (“COVID-19 to Add as Many as,” 2020). Since many have been forced to liquidate their human development assets, they and their children may not be able to recover economically for years or decades. Many have been pushed into participation in illegal economies and thrust into the hands of criminal actors and militants (Felbab-Brown, 2021). Thus, counterproductively, poaching and wildlife trafficking have been also exacerbated, as has deforestation. The cumulative devastation surpasses the scale of destruction many a regional war could inflict.

Even prior to the COVID-19 outbreak, zoonotic diseases (including HIV/AIDS, Ebola, SARS, flu, yellow fever, and others) caused millions of human deaths and a billion cases of human illness per year (Karesh et al., 2012). Seventy-five percent of emerging diseases are zoonotic, the majority originating in wildlife (Taylor et al., 2001).

The loss of human life and economic destruction of pandemic zoonotic diseases, including those linked to poaching and wildlife trafficking, vastly surpass the harms the illegal drug trade (as well as policies to counter it) have generated. The level of resources and policy focus on countering illegal drug production and smuggling, however, dwarfs policy focus on countering poaching and wildlife trafficking. This is all the more inappropriate given that a potentially catastrophic impact of poaching and wildlife trafficking – irretrievable loss of species and biodiversity within a few years and zoonotic pandemics spread through wildlife trafficking in a few months – can be rapid. And unlike illegal drugs, which are non-depletable, wildlife is a quickly depletable commodity.

The global public health and economic devastation caused by the coronavirus (COVID-19) outbreak dramatically reinforces the urgent imperative to minimize the chances of another zoonotic pandemic. Reducing the likelihood of another viral spillover sweeping the world requires a fundamental change in how we interact with nature and how we produce food. COVID-19 is not an isolated, once in a century event. Between 2003 and 2020, a new zoonotic disease threatening at least an epidemic has been identified about once every three years. Reducing the extent of zoonotic disease emergence and spread requires minimizing human interface with wild animals and wild spaces and eliminating transmission points where the likelihood of viral spillover to humans is high, such as unhygienic commercial markets in wild animal meat and live animals. Also needed is better monitoring of the legal trade in wildlife, conservation of natural habitats, and diligent suppression of unsustainable trade in wildlife and *the poaching and wildlife trafficking* – the subject of this chapter. Moving toward such radical changes is difficult in both highly economically developed countries with voracious demands for wildlife, timber, agricultural products and minerals, and poorer countries where wildlife habitats face intense human pressures for land, requiring a radical rethinking of development and global equity issues (Leach et al., 2021) as environmentally destructive policies of one country or even one actor can inflict a devastating pandemic on the entire world.

Conservation policies to preserve species equally can undermine human security when they constrain the access of poor populations to the natural resources on which they depend for basic livelihoods. Thus, there is little consensus on what the best ways are to suppress wildlife trafficking and what steps are necessary to maximize the prevention of zoonosis; i.e., the viral spiral from animals to humans. At least three schools of thought as to how deal with poaching and wildlife trafficking exist and their preferred policy recommendations are at times directly contradictory.

- One school of thought, often embraced by many environmental NGOs but also some conservation biologists, argues for intensified, even militarized law enforcement, increased penalties for poachers, and bans on legal trade in wildlife.
- Another school, comprising many economists of wildlife trade as well as some conservation biologists, maintains that bans will result in greater poaching and emphasizes allowing legal trade.
- A third school of thought, those who promote so-called community based natural-resource management, maintains that local communities should be the authority to decide how local natural resources are treated, including whether animals are hunted and traded or protected.

Their disagreements and contradictory approaches are all the more amplified by the COVID-19 pandemic and the inescapable imperative to respond to it and minimize the chances of another rapidly emerging zoonotic pandemic.

Apart from ideology and emotions, one of the reasons that these debates persist with great vehemence and without prospect for a quick resolution or consensus some 15 years into yet another intense poaching and wildlife trafficking wave is that the outcomes of each approach have been enormously varied, often with more failures than successes registered for each. What that crucially means is that, as uncomfortable as it is for each school of thought, policy experimentation, flexibility, and adjustments are fundamental. One policy approach does not fit all.

The global poaching and wildlife trafficking crisis

Elephants, rhinoceros, tigers, giraffes, parrots, jaguars, giant otters, snakes, reptiles, and many other animals are captured, slaughtered, and trafficked for trinkets, or for Traditional Chinese Medicine. Others are smuggled live for the global pet trade. In combination with habitat destruction and global warming, hunting and poaching might eliminate entire genera of species, further undermining remaining ecosystems. Although East Asian countries, particularly China, Vietnam, and Thailand, are some of the key consumption and demand markets, the United States is widely believed to be the country with the second largest consumer market for trafficked wildlife (United Nations Office on Drugs and Crime, 2020). Demand and supply markets also exist in Latin America; some are new, while others have existed for a long time. They include, for example, the illegal trade in parrots in Brazil and the illegal trade in reptile skins that supplies the affluent in Mexico who love boots made of exotic skins. Wildlife demand markets, both sustainable and environmentally-problematic, also exist in other places often ignored in the story of global poaching, including various East and West African countries, which are often characterized as merely source countries (Barnett, 2000).

Poaching numbers are staggering and devastating. Between 2010 and 2012, almost 100,000 elephants were killed for their tusks in Africa, out of an elephant population that is about 435,000 today, but was 1.2 million in 1980 (“The Elephants Fight,” 2015; “Wildlife Slaughter,” 2015; Wasser et al., 2015; “World Wildlife Crime,” 2016).¹

Rhinos are faring even worse, with poaching dramatically increasing since 2007. In 2013, about 98% of Africa’s rhinos roamed free in four countries, South Africa, Namibia, Kenya, and Zimbabwe, with over two thirds concentrated in South Africa. In South Africa alone, 1,215 rhinos were killed for their horns in 2014, up from 13 in 2007. In 2014, a critical tipping point was reached in South Africa where the number of deaths was believed to surpass the number of births per year (a poaching rate that could wipe out all of Africa’s rhinos by 2022) (Halter, 2013). Alarming consistent with this trend, the total number of poached rhinos in South Africa, where their numbers are largest, and those dying as a result of poaching (such as orphaned babies) was estimated between 1,160 and 1,500 in 2015 (Amin et al., 2006; “South African Group,” 2016).

The northern white rhino subspecies has already gone almost extinct in the wild (Jones, 2015), with only two females remaining. Other species of rhinos – the Indian, Sumatran, and Javan – exist in Asia, all critically endangered and poached. In India, 141 rhinoceros were killed by poachers between 2009 and 2014 (“Rhino Poaching,” 2018). The Indonesian subspecies of the Javan rhino was extirpated in 2010 when the presumed last specimen was shot for its horn in Vietnam in 2010 (Nuwar, 2013). Both rhino horn and ivory are highly valuable products. A kilo of rhino horn currently fetches some US\$65,000 in China (Milliken & Shaw, 2012), and a kilo of ivory between US\$3,000 and 6,000 (Nixon, 2015; “South African Group,” 2016). Ivory prices have doubled in recent years, both in demand and source counties (Orenstein, 2013; Wittemyer et al., 2011). One hundred and seventy-one tigers were poached in India between

2010 and 2015, while 19 very rare Siberian tigers were known to be killed in Russia between 2012 and 2013 (Nowell, 2007; “WPSI’s Tiger,” 2021). This disastrous poaching has been taking place despite the commitment of more than US\$100 million in five years by tiger range countries to reduce poaching and double tiger populations by 2020 (“Global Tiger,” 2012). These numbers may seem comparatively low, but given that the entire population number is in the low thousands, with perhaps hundreds for particular subspecies, such poaching rates are devastating and can drive the species to extinction.

This global poaching crisis and illegal trade in wildlife coexist with a large and equally expanding legal trade in wildlife. Although sometimes the legal wildlife trade enables conservation of habitats and contributes to species recovery, at other times it facilitates illegal trade by enabling “laundering” of illegally-sourced wildlife and boosting demand for wildlife products, including illegal ones, as detailed below.

The trafficking structures and patterns

Understanding the structure of poaching and wildlife trafficking networks is critical for devising effective policy responses. Dominant narratives today often overemphasize organized crime as an aspect of wildlife trafficking and underemphasize the corruption of government institutions and the wildlife industry in many wildlife-supply countries. Equally, inadequate attention is given to the involvement of local communities in poaching, and the intersections among these communities and global organized wildlife trafficking.

The most important characteristic of poaching and smuggling networks is their diversity. Some have become highly organized and vertically integrated. Other wildlife trafficking supplying global demand is organized but dispersed, with no kingpins or top-level traffickers. Other illegal wildlife trade involves the extensive participation of local communities. Sometimes, communities poach merely for their own subsistence, while they also may sell illegally obtained wildlife products to local, regional, and, via middlemen, global markets. Local communities who interact with organized global poaching networks may join them to generate greater revenue, or because they are physically unable to resist them. At other times, they may try to oppose them.

While recognizing these many variations, three basic types of interdependent actors can nonetheless be identified: consumers; suppliers; and middlemen. Each of them crucially structures the way that wildlife trade networks function. The dispersion or concentration of participants along these nodes; i.e., demand, supply, and transshipment, privileges different types of interdiction, alternative livelihoods, or community-based resource management approaches, as well as demand-reduction strategies (Felbab-Brown, 2017).

Consumers

Although China’s consumers dominate the global wildlife market, demand for wild plants and animals is increasing throughout Southeast and East Asia, exacerbated by the region’s growing population and its increasing affluence. What were previously mainly source and transshipment locales, such as Thailand and Vietnam, have rapidly become important consumer markets. East Asian diaspora communities, including in the United States, are also important consumers of wildlife products.

Demand for wildlife products is present and increasing in other parts of the world as well, including Latin America and Africa. Some of these types of demand, such as for bushmeat in Africa, are traditional and go back centuries or millennia. Even the long presence of these

markets does not necessarily mean that they are sustainable. High population growth in some regions, such as West Africa, can lead to such an expansion of demand that it produces unsustainable rates of hunting. Other types of demand for wildlife, including in Africa and Latin America, are newer, emerging, and expanding as a result of the greater affluence and disposable income in those regions.

Suppliers

The primary motivating factor for poachers and traders is economic, ranging from small-scale subsistence needs for some, to major high-profit business for others. At the start of the smuggling chain, are the hunters of animals and collectors of plants and minerals. This group consists of both poor (often subsistence-level) hunters and professional hunters. Beyond need and greed, other motivations include the rejection of colonial or imposed international values, and a form of political rebellion against the imposition of norms that are seen as alien, discriminatory, and against the basic interests of the community (Bell et al., 2007; von Essen and Allen, 2015).

There is a more basic cause: hundreds of millions of people around the world are dependent on forest products for basic livelihoods. In India, for example, at least 50 million people living in and around forests depend on non-timber forest products (NTFPs) directly or indirectly for subsistence (Tejaswi, 2008). For some marginalized communities in Laos, Cambodia, and Myanmar (Burma), the dependence sometimes tops 70% of people's income.

Illegal wildlife trade can reshape traditional hunting and other forms of forest exploitation. Not all indigenous communities nowadays hunt purely for food, but increasingly for global poaching networks. Indeed, the increasingly commercialized trade in bushmeat is believed to be one of the main causes of unsustainable hunting (Bennett and Robinson, 2000).

Sometimes marginalized communities can be pushed into hunting as a negative side effect of other policies, without their necessarily having previously hunted on such a problematic scale. For example, the suppression of poppy cultivation and heroin production in Myanmar borderlands, along with expanding demand for wildlife products in China – drove some to switch to the illegal wildlife trade (Felbab-Brown, 2006).

Professional hunters and middlemen

The arrival of regional or international wildlife traders often triggers a community's participation in wildlife trafficking. With the arrival of middlemen who facilitate marketing, prices for wildlife increase. Middlemen also stimulate the diversification of poaching. Thus, illegal collection expands from orchids to insects, hunting from civets and bears to pangolins, and from langurs to salamanders, with an emptied forest left behind.

As hunting empties forests, wildlife scarcity makes trapping more time consuming and requires greater skills facilitated by sophisticated equipment. Thus, many less-skilled hunters drop out, and the remaining ones become professionalized (Christy, 2010). Highly skilled professional hunters are sought after by trafficking networks, who frequently facilitate their mobility within a country and at times even between countries. This second group of high-tech hunters also includes recreational hunters who violate hunting regulations. Both types are supported by local trackers, guides, and carriers.

Middlemen are also crucial nodes in the international dimensions of the illegal wildlife trade. In addition to being able to organize local poaching, they are connected to global markets and top-level traffickers. Both middlemen and top traffickers can also exploit and exacerbate

corruption, such as among customs officials, and cultivate political patrons. Some cultivate political protection on the basis of preexisting patronage networks. Prominent political leaders exert pressure on park management and the courts to release apprehended poachers and traffickers.

At the apex of the smuggling chain are sometimes big traders who facilitate wildlife traffic across the globe. One notorious trafficker with a global reach is Wong Keng Liang, better known as Anson Wong. A Malaysian, Wong first established himself in the illegal (and legal) trade in reptiles, selling anything from legal geckos to illegal Komodo dragons, Chinese alligators, and Madagascar ploughshare tortoises, a critically endangered species with less than 100 remaining in the wild (Christy, 2010). Another wildlife kingpin, Sansar Chand, gained notoriety for allegedly organizing the large-scale poaching of India's tigers and sales of their products throughout Asia ("Sansar Chand," 2014). The Poon family from Hong Kong has traded in ivory and shark fins for generations (Hastie et al., 2002). Perhaps Asia's largest known wildlife trafficker has been the Laotian Vixay Keosavang, often dubbed the "Pablo Escobar of wildlife trafficking." Vixay's trading company, Xaysavang Trading, was implicated in the smuggling of ivory from Kenya and rhino horn from South Africa, and a myriad of other animals, including lizards, turtles, and snakes (Davies and Holmes, 2016). Many of these traffickers did not diversify into the wildlife trade from other illegal markets, such as drugs. Many started their criminal careers in wildlife.

That does not mean that contagion effects will not take place and that criminal groups do not learn from each other about business opportunities in other domains, such as wildlife trafficking. Such learning appears to have taken place already in the case of at least some Mexican criminal groups which now also seem to participate in totoaba bladder smuggling from the Gulf of California to China (Mejia Giraldo and Bargent, 2014).

Few drug or wildlife smuggling organizations are tight-knit, hierarchical networks with a big trader at the apex. In Myanmar, one of the world's poaching and smuggling hotspots, much poaching and smuggling is carried out by poor, low-level poachers and smugglers who sell poached animals in Mong La and Tachilek to both low-level traders and middlemen, and often directly to consumers. Similarly in Indonesia, many poachers in Kalimantan, Sulawesi, and Ambon are unorganized, low-level opportunists, not wildlife kingpins with a global reach. Rhino horn smuggling into Yemen, for decades one of the most important markets for the product, was also highly decentralized.

Indeed, the fact that the criminal boss or a particular criminal group rarely controls much of the illegal trade leads to erroneous policy assumptions: namely, that supposedly knock-out blows against key players are possible. Such recommendations vastly overestimate the extent to which such effects can be delivered and whether or not they have ever been effective in the drug trade, wildlife trade, or other illegal economies.

As with other illegal economies, profit mark-ups grow significantly the further downstream the smuggling chain the product has moved and the more law enforcement it has had to overcome. Such mark-ups are not small even within a country. While a poor hunter in Tam Dao National Park, Vietnam, can earn perhaps a few hundred dollars a year, an owner of a restaurant in Tam Dao will be able to make US\$1,000 to US\$1,500 selling wildlife meat to tourists, while a medium-sized trader in Vinh Yen will earn more than US\$15,000 a year (World Bank, 2005). In Hanoi, the trader's income will be greater yet. In Kenya, a kilogram of rhino horn may fetch US\$9,000, while in China it will bring upward of US\$70,000 ("South African Group," 2016).

Other actors and stakeholders

As with drugs, timber, and gems, “laundering” within the wildlife trade is not only of profits, but also of actual animals and plants. Since captive-bred animals are exempted from CITES prohibitions on trade, breeding farms are used to launder poached animals. Public and private zoos also provide good cover for smugglers since a zoo can claim to have a breeding program for endangered animals, and thus explain the arrival of new animals. The laundering of animals and falsification of certificates have plagued controls on the ivory trade in China, Hong Kong, Japan, and Thailand, where supply, trade, and retail sales are legally permitted to a degree (Stiles, 2009). Such laundering problems also occur with tiger products in China, where sellers claim that their tiger products come from animals raised on tiger farms, not from poached animals in India and Indonesia (Yang, 2010).

Beyond zoos, corrupt wildlife industry officials tasked with issuing licenses and setting hunting quotas, corrupt veterinarians, or taxidermists who can fake a rhino horn trophy to mask illegal hunting for Asian markets are important players in the illegal trade.

Ecolodges, private reserves and parks, and trophy-hunting outfits play critical roles not just in influencing whether the legal wildlife economy can generate enough income to suppress the temptation to poach, but also in disrupting or enabling actual poaching.

Other stakeholders in the regulation of wildlife trade and conservation – who are thereby at least indirectly stakeholders in the development and implementation of responses to poaching and wildlife trafficking – include logging companies, agribusinesses, the fishing industry, local police and enforcement forces, private security forces, and governments.

Local rangers, police, and wildlife law-enforcement officers frequently obtain only small salaries, little prestige, and limited chance of promotion by enforcing regulations against those involved in the wildlife trade. The pressures of corruption that they, as well as top government officials, face are high.

Other private actors are increasingly hired to supplement wildlife law-enforcement authorities, such as private security companies, former soldiers, foreign trainers, intelligence units, technical operators, and anti-poaching militias. Standing militaries, both domestic and foreign, can also be mobilized to supplement wildlife law-enforcement forces, such as in Nepal or in various parts of Africa. They can provide vital anti-poaching or trafficking resistance. However, they have also been implicated in severe human rights abuses (Cavanagh et al., 2015; Devine, 2014; Massé and Lunstrum, 2016).

The policy debates

The struggles over elephant poaching and ivory policy and over trophy hunting are emblematic of a larger policy search for how to mitigate unsustainable hunting, design anti-poaching policies, and suppress wildlife trafficking.

Given the precipitous and irretrievable collapse of species, there is desperation in the conservation community to find policy silver bullets. As detailed in *The Extinction Market* (Felbab-Brown, 2017), the conservation community is increasingly looking at the successes and failures of decades of global drug policies, whether by demanding stronger and more resourced interdiction and law enforcement approaches or arguing that banning wildlife trade is bound to fail, such as drug prohibition has failed. The debates remain highly polarized in wildlife field – as well as the drug field.

Many environmental NGOs advocate strict bans and call for tougher law enforcement – indeed, this is the policy flavor *du jour* (“Bloody Ivory,” 2012; Duffy, 2013; “Inconvenient but

True,” 2007; Seguya et al., 2016; “Stop Stimulating,” 2013; Stiles, 2004; Thorson & Wold, 2010). For some of them, no legal trade in wildlife, particularly if it involves killing wild animals, should be allowed. Others only oppose legal trade under specific circumstances and for specific wildlife commodities, such as rhino horn and ivory sales. Some conservation biologists support the calls for far tougher law enforcement. Law enforcement authorities often also support bans, not merely because that serves their budgets (as is sometimes alleged by opponents of bans), but because the existence of a legal trade alongside an illegal one significantly complicates the law enforcement task of having to sort through what is legal and what is not, and because the legal trade provides loopholes for the illegal one to exploit.

Total bans on legal wildlife trade and hunting are often pervaded by unrealistic expectations of how effective interdiction and law enforcement policies can be. Such approaches often also underestimate how easy it is to coerce willing participants in wildlife poaching, including poor marginalized local communities dependent on natural resource extraction, to abstain from hunting and embrace conservation.

Characterizations of today’s poaching and wildlife trafficking often de-emphasize the role of poor communities and focus predominantly on organized criminal and militant groups. These views are usually accompanied by demands for much tougher legislation and penalties. These characterizations, however, are deeply flawed and easily can lead to counterproductive policies. Take, for example, the community-based nature conservancies in Kenya’s Laikipia region (Gettleman, 2017) that have long been heralded as some of Africa’s greatest conservation successes. The recent land invasions of these nature reserves by pastoralists unable to obtain fodder for their cattle elsewhere are demonstrating once again that poverty, scarcity, drought, and global warming are pitting some communities’ preferences against conservation. Notions long held throughout Africa that wildlife conservation is a white-man’s imposition on black Africans are being revived again (Carruthers, 1995; MacKenzie, 1988; Neumann, 2004; Ranger, 1999). Such sentiments are echoed throughout Asia and the Americas, where local populations often feel brutalized by conservation policies (Adams, 2004; Burnham, 2000).

Many conservation biologists and conservation economists thus oppose bans and support market-based mechanisms to promote conservation. They point out that bans have often failed and that governments, businesses, and local communities need to be given material stakes in conservation or it will fail and species will be lost. Their adage is: wildlife stays if wildlife pays (Bulte & Damania, 2005; Moyle, 2003; Rabinovich, 2005; Seguya et al., 2016; Wright et al., 2001).

Indeed, under some circumstances, permitting legal trade proved a highly effective conservation tool for a while. Even the recovery of the white rhino throughout the 1990s in southern Africa was crucially underpinned by such market mechanisms (Hutton & Webb, 2003; Jenkins et al., 2006; Leader-Williams, 2003; ‘t Sas-Rolfes, 2000; ‘t Sas-Rolfes, 2012).

Allowing legal trade has not always produced such desirable conservation outcomes. A legal trade can, and often does, allow for the laundering of poached animals, such as in the case of ivory in Thailand where ivory trade from domestic elephants is allowed, or through reptile breeding facilities in Indonesia. Moreover, permitting legal trade may also boost overall demand, including demand for poached animals and their products.

Many so-called critical conservationists may also oppose global bans, rejecting that outsiders, such as international institutions or influential global NGOs, should make policies without adequate input from local communities. In particular, however, the critical conservationists are opposed to conservation policies that hurt poor marginalized populations (Adams & Hulme, 2001; Brockington et al, 2005; Moseley, 2001; Koziell, 2001; Roe, 2011; Roe et al., 2009; Swiderska, 2003; Western & Wright, 1994). Thus, they reject law-enforcement-heavy policies

and emphasize the historic injustice of colonial conservation policies that forcefully evicted native populations around the world. They lament what they see as the disproportionate and unfair power of international environmental NGOs who argue for bans and the establishment of protected areas which local communities are prohibited to access for resources while many local communities want to hunt, including for commercial reasons. They allege that environmental conservationism is swinging back to the inappropriate discriminatory exclusion, marginalization, and force-based approaches from which it sought to depart in the 1990s (Dressler et al., 2010). Not all critical conservationists endorse market-based mechanisms; i.e., legal trade, as an effective policy tools. Those of neo-Marxist or post-modernist persuasion see the market – as well as law enforcement – as another means of dispossession of local communities (Duffy, 2014; Kelly & Ybarra, 2016; Loperena, 2016; Lunstrum, 2014; Peluso & Vandergeest, 2011; Peluso & Lund, 2011). Most critical conservationists, however – as well as some conservation biologists – call for “community based natural resource management” (CBNRM) approaches that give local communities the rights to local land and its wildlife and empower them to make their own decisions over local resources.

These policy disputes are not only debates among different philosophies and ideologies or along North-South divisions. Different constituencies within a country – whether it is a supply, transshipment, or demand country – support and advocate different policies. Moreover, within the countries in the same part of the production and trade chain, there are differences. Kenya and South Africa are both supply countries for wildlife trafficking and both are experiencing massive poaching rates. They share colonial legacies of environmental conservation often rejected by local populations. Kenya, however, opposes legal trade in ivory and in 1977 banned all hunting in the country, making close to no exceptions, even for subsistence hunting and hunting as a mechanism of community-based natural resource management. South Africa, on the other hand, has repeatedly lobbied for allowing the sales of its ivory and rhino stocks and has made economic incentives for conservation, including trophy hunting and trade in wildlife, a key hallmark of its conservation policies.

In the wildlife trade and conservation domain, the debates are over means. Are bans and enforcement, or the market and legal trade, the best mechanism to assure species survival and biodiversity? Is the state or are local communities the most effective locus of decision-making over environmental policy?

These debates are also about values. For some environmental NGOs, killing animals is unacceptable. Many advocates of local communities hurt by conservation policies, however, point out that this sentiment puts animals ahead of people. Proponents of CBNRM efforts often argue that environmental conservation should not stand in contradiction to efforts to empower local communities and promote their economic development, and in fact that empowering local communities is the best mechanism of advancing environmental conservation.

Sometimes that is the case, but at other times, a local community, just like the state and industries, may not have an interest in conservation. Local people and indigenous communities may want to make money as quickly as possible by participating in logging, conversion of forests into agriculture, or poaching and wildlife trafficking. Maximalist versions of CBNRM hold that even in these circumstances, an affected local community should not be merely one of the environmental policy stakeholders, but in fact *the* authority to decide how local natural resources are managed. Only in this way can it be assured that community security, well-being, and rights are not ignored by the preferences of globalist conservationists.

It is thus not just that different participants in poaching and trafficking and different stakeholders in the conservation communities have different values and interests. Values and

interests among the same type of actor vary tremendously and can change over time. These different interests and values thus shape policy objectives and assessments of successes or failures.

Policy outcomes

The systematic policy outcomes of the various policy tools are discouraging. All strategies face structural and resource constraints, whether they be bans and interdiction, legalization and licensing, community-based natural resource management, demand reduction, or anti-money-laundering efforts. In addition to these limitations, the strategies also come with direct downsides. All have produced highly varied and inconsistent outcomes, confounding the search for the “right” policy.

Bans and law enforcement

Bans and intensified law enforcement can help in particular circumstances, depending on local cultural and institutional settings and the ecological requirements of the particular species. Wildlife policy enforcement efforts, whether enforcing bans or making sure that poached animals are not laundered through legal wildlife farms and the legal wildlife trade, are often inadequate. They are severely under-resourced and given low priority. A significant increase in the diligence and resources dedicated to the enforcement of wildlife regulations is certainly warranted. There are, however, limitations on how much even greatly intensified law enforcement can halt poaching and wildlife trafficking, create deterrence effects, and suppress supply in the absence of a dramatic reduction in demand.

The objectives of prohibition and interdiction are to prevent or at least restrict illegal supply and discourage use by creating barriers to entry for both sellers and buyers, boosting prices, limiting commercialization, and creating a normative set of values against threats to vulnerable wildlife ecologies. Just because not every user and supplier is deterred by illegality does not mean that removing illegality will avoid increasing supply and consumption. Nonetheless, if consumption is driven by a desire to display status, power, and wealth, such as by wearing ivory bangles or coats made from endangered species, a ban that discourages such ostentatious display may well shrink demand and be highly valuable. Demand-suppression dynamics would be very different if illegal bushmeat were consumed not as an exotic luxury indulgence, but for subsistence. In the latter case, without alternative protein sources being made available, demand may not go down at all. Thus, demand-suppression approaches need to be tailored in a granular way to particular wildlife products and demand markets and sometimes adapted over time.

Implementing interdiction effectively is hard and very resource intensive. Effective interdiction designed not just to incapacitate poachers and traffickers but also to deter them requires knowing specific structures of particular wildlife smuggling networks. Analyses, though, at times exaggerate the extent to which poaching is undertaken by organized criminals and militant groups. While the latter may be involved, such cases often represent only a sliver of poaching activity. In fact, there is a large degree of variation in the structures of poaching and trafficking networks, and there are many atomized small-level traders and poor poachers also in the business. Exaggerated and simplistic characterizations also divert policy attention away from corrupt practices among legal actors, including licensing entities, ecolodges, and top environmental officials.

Poaching and trafficking networks are often far less vertically integrated than many interdiction advocates imagine. Moreover, even top traffickers and entire wildlife trafficking networks are easily replaceable as long as demand stays robust. Nonetheless, knowing what the

poaching and smuggling structures actually look like in a particular place, rather than imagining what they might be, is crucial for making law enforcement and other policy interventions effective in that locality.

As laid out in extensive detail in *The Extinction Market*, there are many relevant lessons from the illegal drug trade and efforts to counter it (Felbab-Brown, 2017). Two decades of the author's interviews and policy exchanges with law enforcement officials show, that even with a very large dedication of resources, rarely does drug interdiction surpass a 50% effectiveness rate, often remaining much lower. Such interdiction levels may be insufficient to prevent the collapse of particular species. What crucially facilitates the effectiveness of interdiction, law enforcement, and bans is a reduction in the demand for a commodity – whether as the result of a ban, purposeful demand reduction strategies, or exogenous factors. Paradoxically, the more effective law enforcement becomes, the more the value of a smuggled animal or wildlife product goes up. Perceived scarcity – whether as a result of species depletion or more effective law enforcement – increases the financial benefits of smuggling.

Drug traffickers expect large losses due to eradication of illegal crops and interdiction of smuggled drugs and often welcome them, for law enforcement boosts prices and makes stockpiles more profitable. At least some wildlife traffickers make similar calculations; traffickers of rare parrots from Indonesia, for example, fully expected a 90–95% mortality of the parrots they illegally collected as a result of their smuggling method. They stuffed the parrots into plastic bottles, threw them into the sea to retrieve them on open water later in order to avoid law enforcement (Felbab-Brown, 2013). The fact that less than 10% of the parrots survived was not a deterrent, as profits on the remaining specimens were more than sufficient. In fact, prices can be boosted by scarcity so much that absorbing huge losses and driving a species to extinction is highly profitable and attractive for traffickers. The rarer the species, the greater its value. As discussed earlier in the chapter, paradoxically, such “effective” interdiction that drives greater poaching in order to supply a stable market, or an even more pernicious rarity market where demand increases with rarity and price, can have devastating effects on species. Such seemingly effective interdiction is, in fact, not at all effective and outright counterproductive.

Legal trade and licensing

Allowing a legal supply of animals, plants, and wildlife products is equally fraught with dilemmas and imperfect outcomes. The arguments for legalizing drugs are substantially different from arguments for permitting legal trade in wildlife products. Critics of the war on drugs argue that since drugs cannot be eliminated from the world, criminalizing drugs overburdens law-enforcement and justice systems, empowers criminal groups, severely undermines human rights, compromises public health, and undermines anti-militancy efforts. Legalization advocates promise that legalization will bring resources to the state in the form of taxes and license fees, and that it will undo the above stated negative effects. Yet many critics of drug prohibition dispute whether drug legalization will in fact undo all of the negative effects, and they do not necessarily support outright legalization, preferring decriminalization and differently designed enforcement measures instead. The extent to which legalization will increase problematic use and addiction is also disputed.

The regulatory arguments for permitting legal wildlife trade are fundamentally different. First, farming or ranching of protected species can take pressure off wild resources. Second, allowing some level of trade can give hunters, ranchers, and others close to traded wildlife resources a stake in preserving species and entire ecosystems, and managing them sustainably. Third, regulated trade can also raise money for conservation.

Just as with bans, the effectiveness of licensing, eco-labeling, and creating a legal supply of wildlife depends crucially on the capacity of law-enforcement bodies effectively to monitor and enforce the regulations and restrictions concerning legal trade in all the countries involved in it; additionally, it depends on consumers preferring legally and sustainably produced items, and on their having the capacity to distinguish genuine from fake labels.

As with bans, many of the presumed or hoped for positive outcomes of legal trade do not always materialize fully in reality. A legal supply does not guarantee sustainability, nor does it necessarily take pressure off the wild supply. If a legal supply is expensive (because of heavy taxes to discourage demand) and difficult to produce (because breeding animals in captivity is hard), then poaching will likely persist. Captive-breeding and licensing schemes often do not prevent the leakage of illegally caught wildlife into the supposedly legal supply chain. Frequently, neither customers nor law-enforcement officials have the capacity or motivation to determine whether a wildlife product was obtained from the wild, from a captive-breeding facility, or from a legal supplier. Permitting a legal supply greatly increases the burden for law-enforcement bodies to differentiate between illegally and legally sourced products. However, while total bans on wildlife trade do away with the need for law-enforcement officials to distinguish between the legal and the illegal, they do not necessarily reduce the overall resource requirements. Legal supply can also reduce moral opprobrium surrounding the trade in particular species, thus inadvertently boosting demand for illegally sourced wildlife and white-washing consumer consciousness.

Moreover, the wildlife revenues from a legal supply – such as breeding facilities or trophy hunting – do not necessarily go to local stakeholders and communities. Other actors, including local or national elites, large eco-businesses, or distant breeding facilities can capture them through corruption, problematic regulatory redesign, or natural market dynamics. Local stakeholders may not benefit from conservation as a result.

Despite current characterizations of poaching networks as highly organized criminal enterprises, many poachers are members of marginalized and desperately poor local communities. Sometimes their poaching activities are fully separate from wildlife trafficking. At other times, these local poachers supply global trafficking networks or work for them as hunters, carriers, trackers, and spotters, as corrupt park rangers also sometimes do. Focusing on finding legal livelihoods for them can be an important component of policies to reduce the illegal trade in wildlife and incentivize communities to resist wildlife trafficking. Although creating economic incentives for communities to support conservation does not address the problem of wildlife smugglers and organized criminal groups, it can simplify and focus law-enforcement efforts. It can encourage community co-operation with law-enforcement bodies, enhance the political sustainability of restrictions on wildlife trade, and reduce political conflict.

Involving local communities: alternative livelihoods and CBNRM

Generating economic incentives for the poor to support conservation policies is also important normatively because the marginalized communities dependent on hunting for basic livelihoods have often suffered greatly as a result of environmental conservation. They have been forced off their land in areas designated as protected, and their livelihoods and human security have been compromised. Laws and regulations are easiest to enforce when the vast majority of people accept them as legitimate and internalize them. The devolution of decision-making power to those who have been poor, marginalized, and without rights may be not only politically and economically beneficial, it can also be psychologically rewarding and enabling.

As shown in great detail in *The Extinction Market*, many alternative livelihood schemes have not been effective (Felbab-Brown, 2017). While frequently prescribed as the mechanism for conservation, ecotourism has unfortunately failed to be a consistent remedy against poaching and wildlife trafficking or a reliable tool of economic growth. It rarely generates sufficient income and jobs as a result of both its own internal limitations and resource capture by elites. Thus, the crucial objective that communities at least earn enough to maintain prior subsistence levels, let alone achieve economic and social advancement, from ecotourism, other alternative livelihoods, or the limited hunting of wildlife, is often elusive.

On the Indonesian island of Seram, for example, twenty poachers of rare parrots were converted (through the work of Profauna, one of Indonesia's NGOs most determined to fight against the illegal wildlife trade) into rescue-center staff and wildlife guides for tourists. As a result of this alternative livelihoods effort, poaching dramatically declined. Success depended on a steady flow of eco-tourists whom the newly converted poachers could guide. For that, an international counterpart to the conservation effort helped recruit US birdwatchers to travel to Seram. When that international supply of eco-tourists fell off, the income from wildlife-guiding for the former poachers shrank and the pressure to resume illegal hunting to generate livelihoods intensified once more (Felbab-Brown, 2013).

The Seram story is a micro-example of the conditions on which successful alternative livelihoods depend. If poor poachers have an assured income from other sources, they are often willing to abandon illegal hunting, even though poaching often brings more money. Income from other sources needs to be steady and assured. The problem with many ecotourism alternative livelihoods efforts is that the income fluctuates greatly and tends to be sporadic and seasonal.

Often, for an area to draw a sufficient number of ecotourists to generate income, it needs to contain large mammals that can be seen fairly easily by tourists. Thus, eastern Africa's savannahs tend to attract many more tourists than rainforest areas. Even there, income from ecotourism can be highly seasonal and lodges either have to build up financial reserves to pay the staff during the low season or else, as is frequently done, fire staff during a part of the year, thus incurring the wrath of the community.² In addition to having relatively easily-visible animals, for ecotourism to generate sufficient revenues, parks need to have good infrastructure, such as airports, roads, and lodges, as well as good security. Banditry or presence of militant groups scare off tourists, as do other external shocks as such political instability in the country or economic downturns in tourists' home countries.

Moreover, the number of jobs available through ecotourism may be significantly lower than the potential pool of people who may be recruited as poachers. Even if all existing poachers get legal jobs, are there other poor people who may be recruited as poachers in the area or can move into the area, particularly, if the compensation for poaching rises?

There is a large variation of outcomes concerning the effectiveness of alternative livelihoods and local community involvement in managing habitats and wildlife, some of which reveal the detrimental effects of allowing or not allowing local communities to exist in national parks. Many factors can affect these outcomes, including a community's short-term versus long-term economic horizons, income and employment levels, their attitudes toward nature, community cohesion and leadership structures, and the enforcement of property rights. Alternative livelihoods that address all of the structural drivers of illicit economies have the highest chance of being effective.

CBNRM schemes often go beyond alternative livelihoods, ecotourism, compensation, or limited hunting. They seek to transfer rights to local communities and achieve three objectives: political empowerment; poverty alleviation; and environmental protection. They can be based

around trophy hunting, ecotourism, or other alternative livelihoods. Sometimes they have worked spectacularly well, but the outcomes have not been uniform. Beyond good implementation, successes are dependent on a steady and large flow of tourists, trophy hunters, and customers, and sufficiently low densities of people compared to wildlife. In general, they have worked better in arid areas where agriculture is not profitable but where iconic wildlife species are present, rather than fertile areas where converting land to agriculture is profitable or tropical forests where animals are difficult to see and where industrial logging brings far greater revenues than ecotourism. In some cases, communities became richer as a result of CBRNM policies, but then intensified unsustainable hunting and logging to further augment their economic resources at the expense of environmental conservation.

In short, there are no silver bullets, nor even universally appropriate ameliorants. Policy outcomes are highly context specific and contingent. All strategies face structural and resource constraints. In addition to these limitations, the strategies also come with direct downsides. Bans on hunting and local resource extraction can reduce sources of income and lower the standard of livelihood among poor local populations. The imposed relocation of communities and other coercive measures can generate deep resentment and a rejection of conservation, as has often happened in Africa, Asia, and Latin America. Licensing legal trade, however, significantly complicates law enforcement and facilitates traffickers' strategies of evasion.

Bans or licensing can help in particular circumstances, depending on local cultural and institutional settings and the ecological requirements and circumstances of particular species. There are, however, limitations on how much even greatly intensified law enforcement can halt poaching and wildlife trafficking, create deterrence effects, and suppress supply in the absence of a dramatic reduction in demand. Licensing and regulating the hunting and wildlife trade only works under some circumstances. Sometimes it gives various participants a stake in conservation that would otherwise be absent, serving to protect not just a species but also its habitat and the broader ecosystem. At other times, a legal supply of a vulnerable species boosts overall demand, including for poached animals, complicates enforcement, and enables the laundering of illegally sourced products. CBNRM can significantly motivate local communities to support conservation and resist poaching and trafficking, but just as with other tools, the outcomes have varied widely. Going after consumer demand is crucial, but demand-reduction measures are complex and take time. Anti-money-laundering (AML) efforts provide an additional tool, but they will not bankrupt the illegal wildlife trade.

Conclusions

Poaching and wildlife trafficking patterns are highly diverse. In their core characteristics – increasing demand and consumers, poor suppliers (poachers) and layers of middlemen and top traffickers, corrupt government officials, and sometimes organized crime groups – the trafficking networks share much with the illegal drug trade. Just like in the illegal drug trade, there is much diversity in organizational patterns of actual poaching and trafficking.

Also like the drug trade, appropriate policies to counter poaching and wildlife trafficking are vigorously contested. Two of the three key conservation schools of thought described in this chapter have strong analogies in the drug policy debates. The policies advocated by the various schools of thought reflect different values and norms. They also highlight the large diversity of interests among participants in poaching and wildlife trafficking and the conservation policy community. Some of those values and order of preferences closely parallel the illegal drug trade. Many poor poachers, like many poor cultivators of drug crops, will say that whatever harm their activity generates pales in comparison to their need to feed starving families, especially if

alternative livelihoods are absent or failing, which is all too often the case in both the illegal drug and wildlife trade.

There are, however, two fundamental differences between these illegal economies. Illicit drugs are a nondepletable resource – they can be produced over and over. Wildlife is rapidly depletable. Once a species is gone, it cannot be brought back; the loss of a set of species within an ecosystem can irreparably unravel the entire ecosystem. Thus, the timelines in countering poaching and wildlife trafficking are far tighter – on the order of a few years – than in the case of the illegal drug trade.

A second big difference is the scale of destruction and harm that poaching and wildlife trafficking pose globally. When they unleash zoonotic pandemics, they bring death rates and global economic contractions that even the most severe illicit drug epidemics, such as the current US opioid epidemic (Felbab-Brown, 2020), cannot match. The magnitude of death and impoverishment is higher than that in the illicit drug trade.

Devising effective policies for countering poaching and wildlife trafficking is compounded by another factor, perhaps the most important policy takeaway – namely, that we must expect huge variation in policy outcomes. The same holds true for drug policy. What works well for a species in one locale may not work well for the very same species in a neighboring locale. What works well in suppressing demand at a given time may not work ten years later. How much a legal or illegal market can be shaped or reduced through supply-and-demand measures depends on their elasticities, which can change over time, as well as a host of other factors, such as local institutional and cultural settings. Policy thus should allow for experimentation.

For a detailed set of policy recommendations of how to counter poaching and wildlife trafficking and locale specificity considerations, see chapter 11 in Vanda Felbab-Brown’s *The Extinction Market*. For a discussion of how to address those issues as well as smarten up the legal trade in wildlife to prevent zoonotic pandemics, see Vanda Felbab-Brown “Preventing Zoonotic Pandemics through Biodiversity Conservation and Smart Wildlife Trade Regulations” (Felbab-Brown, “Preventing Zoonotic,” 2021).

Notes

- 1 United Nations Office on Drugs and Crime (UNODC) puts the number of elephants poached during that period at 92,000.
- 2 Author’s interviews with lodge owners, Tsavo National Park and Masai Mara, Kenya, May 2013 and Serengeti National Park and Ngorongoro Conservation Area, Tanzania, summer 2003.

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