



Economic drivers and effects of the illegal wildlife trade in Sub Saharan Africa

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Question

What are the economic drivers, and economic effects, of the illegal wildlife trade (excluding fish and forestry products) in Sub Saharan Africa?

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1. Overview

The drivers behind the illegal wildlife trade (IWT) in Sub Saharan Africa are varied and complex; varying over time and from one location or sector to another, and depending on the type of commodities and crime involved. Therefore caution should be taken when discussing these drivers. Broadly, the main economic drivers behind the IWT in Sub Saharan Africa include: increasing demand in consumer countries in East Asia; poverty in source countries; lack of alternative livelihoods and subsistence in source countries; and cultural and colonial legacies in Sub Saharan Africa. Furthermore, there are a number of enabling factors that encourage the IWT in Sub Saharan Africa which include: weak governance; corruption; failures in regulation; and failures in enforcement. Impacts on poor countries and people in Sub Saharan Africa from the IWT are not well studied or fully quantified. The effects vary widely, can be both positive and negative, and are not evenly distributed among people in a community or country. Generally, IWT has a net positive short-term impact on individuals, and a net negative long-term impact on communities and countries as a whole.

Evidence from case studies have been used to highlight these different motivations and effects where possible, however, evidence is patchy across Sub Saharan Africa. There are a large number of knowledge gaps around IWT, including the socio-economic profiles of different actors involved, and IWT is often a symptom of deeper underlying forces involving political, social and economic dynamics and broader patterns of land use change. The literature reviewed was generally gender blind, although some case studies found that it was often young men who took part in illegal hunting and the IWT.

Key findings include:

- Motivations for the IWT vary greatly from location to location, depending on the actors involved and the goods being traded; it is particularly challenging as it involves multiple dimensions, including poverty, governance and is often hidden in legal trade.
- Generally, wealth rather than poverty was found to be the ultimate driver in IWT, in that individuals from poor communities would not engage in the poaching of commercially valuable species unless there was demand from wealthier communities/countries.
- The role of the colonial history of separation of people and wildlife in driving wildlife crime is an important yet often overlooked factor.
- By its nature IWT is clandestine, hence empirical evidence and the evidentiary base for policy discussion is often weak and so the ability to fully answer the question is limited.
- Strength of evidence from different Sub Saharan African countries varied greatly and there are few in depth studies into drivers of IWT in these countries as a whole (Kenya and Uganda were the exceptions). Case studies are often specific to the particular location studied within the country (often around protected areas or National Parks).
- Impacts on poor countries and people in Sub Saharan Africa from the IWT are not well studied or fully quantified. The effects vary widely, can be both positive and negative, and are not evenly distributed among people in a community or country. Generally, IWT has a net positive short-term impact on individuals, and a net negative long-term impact on communities and countries as a whole.

The information in this report has been split into economic drivers and enabling conditions of the IWT, although the distinction between these is necessarily fuzzy. Harrison et al (2015) explain that “an enabling condition is a factor that does not drive or motivate crime directly, but without which the crime would be impossible, not profitable or too risky.”

2. Economic Drivers of the IWT in Sub Saharan Africa

Identifying Drivers

‘t Sas-Rolfe (2015) highlights a number of challenges in identifying the drivers of the IWT. Firstly, the high level of complexity in most wildlife markets; in the real world it is extremely rare to encounter a straightforward case involving a single species, single conservation agent, single product and homogenous market. A second challenge is that usable data sets on wildlife trade and its impacts are extremely difficult to obtain. The trade is highly complex and its legal and illegal forms are often interconnected (IUCN et al, 2015). It involves poachers, armed non-state actors from source nations, international crime groups and institutional corruption across global network chains and a range of players involved in demand countries (Lawson and Vines, 2014). There are a wide range of reasons why wildlife is traded illegally in the first place, studies in specific contexts have highlighted diverse motivations for poaching within communities. Key motivations include: poverty in source countries; subsistence needs; and demand increase in consumer countries. In addition, other potential motivations and drivers include: the desire to improve financial well-being (commercial use/income generation); corruption; poor law enforcement and low penalties; lack of legislation in source countries; cultural practices and traditions; the desire to retaliate for direct losses due to wildlife or for current or historical perceived injustices; and broad social upheavals such as war (Cooney et al, 2016; Duffy & St John, 2013; Harrison et al, 2015; Lindsey et al, 2015; Nellemann et al, 2014).

It is also important to note that human decisions concerning conservation and exploitation of natural resources are shaped fundamentally by the incentives (financial and nonfinancial costs and benefits) accrued, as well as culture, norms, beliefs, values, lifestyles, and cognitive factors (Cooney et al, 2016). How these factors combine to affect individual decision-making varies according to both context and individual preferences, and a mix of enabling conditions. For example, the MIKE report to CITES (Convention on the Trade of Endangered Species) CoP16 lists poverty, poor law enforcement, weak governance and the demand for illegal ivory as the key factors associated with elephant poaching (CITES Secretariat et al, 2013). The report suggests that the first three of these probably reflect ‘background levels’ of poaching, while increasing demand accounts for much of the recent escalation. A similar picture of differing drivers and motivations can be seen for poaching of elephants and other species in Gonarhezou National Park in Zimbabwe (Edson Gandiwa, Chinhoyi University of Technology in IUCN et al, 2015, p.5). Local people may poach themselves, but may also harbour illegal hunters and share information with them; the main drivers include high poverty levels, limited benefits from community based natural resource management (CBNRM), encroachment in wildlife areas, inadequate law enforcement, weak legal frameworks, and readily available markets for wildlife products. Motivations for rhino poaching in Kruger National Park were identified with a diversity of factors driving poaching by local people including poverty, unemployment, absence of alternatives, lack of social cohesion, poor ‘people and parks’ relations (a deep history of mistrust; inequality and benefit sharing) and corruption (Mlandelwa Nqobizitha Ndlovu, Resource Africa in IUCN et al, 2015, p.5). Harrison et al (2015) undertook a literature review of the IWT in Uganda, they found that the main conditions enabling wildlife crime included weak law enforcement, the existence of accessible markets (particularly for bushmeat and ivory), and, to a certain extent, lack of awareness of the laws and consequences of wildlife crime. Weru (2016), who undertook a review of rhino and elephant poaching in Kenya, found that generally the key drivers and enablers were: corruption among government officials and the private sector; rising illegal market prices for rhino horn and elephant ivory driven by demand in Southeast Asia and East Asia; the proliferation of

weapons across borders and in insecure areas of northern Kenya; the ease of movement of poachers and wildlife products across Kenya's porous borders; expanding human settlements around key rhino and elephant habitats; and inadequate prosecution capacity of wildlife crimes to serve as a deterrent.

Poverty

Poverty is often touted as being a main driver of the IWT (Duffy and St John, 2013; Duffy et al, 2016). Duffy and St John (2013) undertook a rapid review of academic and grey literature on the linkages between poaching and poverty, which revealed that the links between poverty, poaching and trafficking are under-researched and poorly understood. However, the assumption that poaching occurs because of poverty is omnipresent, with little 'hard evidence' to support the claim. Despite this, the authors are confident that the links are there, based on the evidence gathered (see Duffy and St John, 2013). For example, the MIKE report to CITES (CITES Secretariat et al, 2013) reveals that sites suffering from higher levels of poverty experience higher levels of elephant poaching and, further, that poaching decreases as food security increases. Duffy and St John's (2013) review found that while poverty may encourage people to poach, poverty *per se* is not necessarily the driver or initiator of poaching. Individuals from poor communities would not engage in the poaching of commercially valuable species unless there was demand from wealthier communities.

Role of demand and price

Often the IWT is driven by changes in consumption, the role of the poor has been found to be relatively unimportant in many cases. Rather the main driver is the rising wealth in consumer countries that has created a strong demand for wildlife goods (Duffy and St John, 2013; OECD, 2012; Nellemann et al, 2014). Wealthy industrial economies remain major legal and illegal importers of wildlife. In 2008 a report by TRAFFIC-ASIA examined the drivers of the illegal wildlife trade, and concluded that the increase in illegal trading of wildlife was directly related to the rise in incomes in the region (TRAFFIC, 2008 in Duffy & St John, 2013).

The increase in disposable income in East Asia, coupled with increasing economic and infrastructure links between Africa and Asia, have been implicated in rapid recent increases in elephant poaching and illicit international trade in ivory; this has become especially pronounced from 2006 onwards (Bennett, 2014). Since 2009, approximately 67% of all large-scale seizures of ivory occurred in East and Southeast Asia, either in transit or during importation, whereas Africa accounted for approximately 33%. East Africa accounted for 80% of the seizures that occurred in Africa (Weru, 2016). According to Bennet (2014), in 2012, if 10% of households in the wealthy middle class in China that earned US\$16,000/year or more each bought a 50g piece of ivory, 32,000 elephants would have to have been harvested. This is approximately the number of elephants poached across Africa in 2012, part of a pattern leading to population declines across much of the continent, especially in Central Africa. At the current rate of households joining the wealthy middle class in China, by 2022, 163,000 elephants would be needed to supply ivory to 10% of households (Maisels et al. 2013b in Bennet, 2014).

Challender and MacMillan (2014) note that rising prices and increased levels of off-take for high value species indicate that demand may also be growing and an understanding of consumer demand is therefore crucial in terms of predicting the efficacy of enforcement action. Although obtaining market information is difficult due to the clandestine nature of illegal trade, where available it suggests prices for high-value species and their derivatives are rising, which, in turn,

is leading to higher poaching incentives, and that this is largely as a result of growing and potentially price-inelastic demand from the burgeoning metropolises of East Asia. Challender and MacMillan (2014) also highlight that growing relative poverty between areas of supply and centres of demand is crucially important in understanding current levels of illegal trade. High economic growth rates in China, Vietnam, and Taiwan, averaging in excess of 7% in the last 2 decades, contrasts sharply with the economies of major source countries for ivory for example, in East Africa. For instance, Chinese GDP per capita in 2012 was US\$6,188.19, approximately 10 times that of Tanzania (US\$608.85) and 5 times that of Kenya (US\$864.74) based on World Bank (2013) figures. There is increasing disparity between key end-markets for ivory (China and Thailand), where increasing numbers of people now have the financial means to acquire ivory, and major source countries (Kenya, Tanzania, and Zimbabwe).

Recent upward trends in rhino horn trade have also been correlated with the newly acquired purchasing power of consumer nations like Vietnam and China (Weru, 2016). Rhinoceros horn has historically been used in traditional medicine and for luxury goods in Asia. According to a report by the United Nations Office on Drugs and Crime (UNODC, 2016), the value of rhino horn became such that professional criminals with no history in the wildlife trade and no connection to source or destination markets began to explore the market. Biggs et al (2013) suggest that because of the CITES ban on the trade of rhino horn demand can only be met through the illegal market, which primarily relies on the killing of rhinos by poachers for their horns. Skyrocketing poaching levels are driven by tremendous growth in the retail price of rhino horn, from around \$4,700 per kilogram in 1993 to around \$65,000 per kilogram in 2012 (also reflected in Challender and MacMillan, 2014 and Muntiferung et al, 2017). 't Sas-Rolfes' (2015) article on rhino horn poaching in South Africa (which has aggressively accelerated since 2008) also noted that the acceleration is linked to increasing consumer demand in East Asia, which in turn can be linked to rising levels of affluence there.

The importance of price as a driver is clearly illustrated when prices change, whether as a result of increasing demand or falling supply. For example, a report from the OECD (2012) assigned the driver of the rapid increase in the illegal ivory trade in 2006-7 to an increase in prices in Japan and China, which rose from US\$100 per kilogramme in the late 1990s to US\$200 in 2004, reaching US\$750 in 2007 (OECD, 2012). Ivory is of high value per unit mass, the hunter potentially receives a highly disproportionate price, equivalent to annual earnings, from the sale of ivory from even a single animal, and prices increase all along the trade chain. Current levels of demand for ivory are greatly driving up the price and thereby providing major incentives to hunt elephants well above sustainable levels (Bennett, 2014).

Lack of alternative livelihoods, subsistence and income generation

Many rural areas in which wildlife occurs are characterized by lack of economic activity or employment opportunities. Illicit trade and organized crime often enriches local people, and illegal hunting and the sale of bushmeat provides an opportunity for quick cash income for people with few alternative livelihood options (Lindsey et al, 2015). In rural Zambia, for example, some hunters are able to earn nearly US\$100 from a single expedition, which approaches the local per capita annual income of US\$120, and hunters are among the wealthiest community members (Brown, 2007 in Lindsey et al, 2015). Another example in north-west Namibia, from a sworn affidavit from a poaching case, indicates that poaching syndicates offer up to three times the mean annual household income for a single set of rhinoceros horns (Muntiferung et al, 2017). Unemployment also provides individuals with ample time to spend hunting illegally and

correspondingly, rates of hunting and household bushmeat consumption decline sharply during times of peak agricultural activity (Lindsey et al, 2015).

Despite the threat of legal sanctions, the poaching and sale of wildlife remains an attractive option to local people who seek greater disposable income, may have a long cultural association with hunting, but who may also be intimidated into poaching by organized criminal gangs (Challender and MacMillan, 2014). The Sebungwe region, south of Lake Kariba, is one of the two regions in Zimbabwe that has witnessed a significant decline of elephants since 2001. The reasons behind the decline are still to be fully analysed but Pani (2015) states that during a workshop on the IWT, Traditional Leaders from the area reported that they had turned a blind eye to poaching and helped poaching gangs in return for direct benefits, as they felt their people were not directly benefiting from the official management of their natural resources.

Wild sourced animals and plants continue to serve as an important food source for people around the world, even where cultivated alternatives are plentiful (UNODC, 2016). Some people depend on wild meat for their annual protein supply because they have no other source or cannot afford alternative sources. The drivers of illegal hunting for wildlife are varied, and the phenomenon tend to fall somewhere on a continuum, from that done to obtain meat for direct consumption (subsistence) and/or immediate community trade, to commercial trade in urban centres or even international markets (Lindsey et al, 2015). There are indications that illegal hunting is increasingly commercial in many areas in response to increasing human populations, and increasing demand for bushmeat both in rural communities and in growing urban areas. In rural areas, often close to wildlife source populations, bushmeat is preferred because it is normally cheaper than alternatives. In urban areas, demand for bushmeat is driven by preference for its taste, and may be seen as a way of preserving traditions, it is commonly more expensive than other types of protein (Lindsey et al, 2015; UNOCD, 2016).

Bushmeat trade has emerged as a severe threat to wildlife conservation and the viability of wildlife-based land uses in Zimbabwe during a period of political instability and severe economic decline. Lindsey et al (2011) conducted a study around Savé Valley Conservancy in the South-East Lowveld of Zimbabwe to investigate the dynamics and underlying causes of the bushmeat trade, and found that bushmeat hunting is conducted mainly by unemployed young men to generate cash income, used mostly to purchase food. Bushmeat is mainly sold to people with cash incomes in adjacent communal lands and population centres and is popular by virtue of its affordability and availability. Key drivers of the bushmeat trade in the South-East Lowveld include: poverty, unemployment, food shortages, settlement of wildlife areas by impoverished communities that provided open access to wildlife resources, failure to provide stakes for communities in wildlife-based land uses, absence of affordable alternative protein sources, inadequate investment in anti-poaching in areas remaining under wildlife management, and weak penal systems that do not provide sufficient deterrents to illegal bushmeat hunters.

Illegal hunting of resident and migratory herbivores is widespread in the Serengeti National Park in Tanzania. Loibooki et al (2002) looked at why people are involved in illegal hunting and the role of bushmeat in the local economy. Most individual and group respondents were subsistence farmers who considered bushmeat to be a source of protein and a means of generating cash income. Participation in illegal hunting decreased as wealth in terms of the number of goats and sheep owned increased. People with access to alternative means of generating income or acquiring protein were also less likely to be involved in illegal hunting. They also found that bushmeat was the most important means of generating cash income after agriculture, suggesting that bushmeat constituted an important element in the local economy (Loibooki et al., 2002). In

northern Tanzania, TRAFFIC (Jambiya et al. 2007) highlight how a considerable increase in bushmeat hunting was associated with the presence of refugee camps, as bushmeat hunting was a means to meet protein requirements and also an opportunity to generate income.

In a review of the evidence on drivers and impacts of wildlife crime in Uganda by Harrison et al (2015), the evidence reviewed revealed five main motivations of wildlife crime in Uganda, highlighting the mix and complexity of drivers. This included to meet basic needs (subsistence). Many people in Uganda lack the resources they need and the money with which to buy them, so may have little or no option but to resort to illegally harvesting resources from protected areas. These resources can either be used directly to meet household needs (bushmeat and honey), or be sold to generate income with which to pay for resources. Another driver was to generate income above and beyond basic needs (commercial). Not everyone who wishes to attain this level of wealth gets involved in wildlife crime though; some may turn to wildlife crime because they feel unable to access legitimate or high-paying employment. There is also the 'pull factor' of the profitability of illegal activities such as trading bushmeat and ivory to urban centres (such as Kampala) or beyond. With a kilo of raw ivory now selling for US\$2,100 on the black market, up from US\$150 in 2002 and continuing to rise, elephant poaching is potentially the most profitable wildlife crime in Uganda currently, but locally hired poachers will see only a very small proportion of that money despite taking most of the risk.

Colonial history and culture

Although not an economic driver, this is an important aspect to consider in the IWT. Communities are often marginalized from the benefits derived from wildlife in protected areas (or private reserves), which creates strained relations with the wildlife sector. In some cases, such relations are worsened by human wildlife conflict, heavy-handed anti-poaching and historical grievances over the loss of land. In such instances, illegal hunting may be practised as a form of protest (Lindsey et al, 2015). Duffy et al (2016) reviewed the academic and policy literatures on poaching and illegal wildlife use and considered the meanings of poverty and the relative importance of structure and individual agency. They placed motivations for illegal wildlife hunting within the context of the historical legacy of colonialism and complex history of how wildlife laws were initially designed and enforced, to indicate how hunting practices by specific communities were criminalized. They argue that the origins of illegality in hunting partly explain why some communities in Sub Saharan Africa continue to resist legislation to protect wildlife because they believe they have a right to access and use wildlife as they have done for generations.

Similarly, Harrison et al (2015) found that one of the five main drivers of wildlife crime in Uganda is perceived injustice. There were a number of ways in which local people perceived themselves to be unjustly treated by protected area authorities. Their responses to this injustice may include targeted retaliation at individual animals or species, and general disregard for protected area rules and regulations. This also related back to British Colonial rule, as the British Colonial rule government hired local vermin guards for each protected area to protect farms from raids by wild animals. They also gave meat of shot 'problem animals' to local communities, and noted the importance of controlling raids by wild animals to maintaining good relations with local people. However, when the Ugandan Wildlife Authority was formed after the civil unrest, it was under-resourced and operating on restricted budgets. Rangers were ordered not to scare-shoot wild animals in community land so they could focus on law enforcement. But for local people, this was a dramatic change in the level of support received from the authorities over raids by wild animals and the expectation of support remains.

Another of the five main drivers in Uganda identified by Harrison et al (2015) was cultural traditions. Many of Uganda's protected areas are the traditional homelands of various tribes, such as the Batwa in Bwindi Impenetrable National Park and the Batooro of Katonga Wildlife Reserve. Because people have traditionally lived in certain areas, they have traditional uses for the resources found there, some of which can no longer be found outside the protected areas. For many people, there is also a culture of hunting and eating bushmeat. Muntifering et al (2017) argue that the erosion of culture, language and ultimately human dignity in Sub Saharan Africa has resulted in retaliatory illegal hunting and poaching. They use the counter-example of Namibia to demonstrate how formally recognising community rights and placing wildlife as of high value (through establishment of the conservancies), has resulted in increased wildlife numbers and diversity, and that Namibia has largely avoided the catastrophic losses of elephants and rhinos to poaching that other African countries have experienced in recent years. Of the 18 confirmed cases of rhinoceros poaching that occurred in north-west Namibia during 2012–2014, none were in an area where rhinoceros tourism is practised, or in a conservancy wildlife tourism area with permanent activity and direct benefit sharing agreements between the private sector operator and the host conservancy (Muntifering et al, 2017).

3. Enabling Factors of the IWT in Sub Saharan Africa

Weak governance

Illegal activities tend to thrive when appropriate governance and regulation is lacking, including failures to determine or protect property rights, inappropriate or weak regulation and corruption (OECD, 2012). Instability and the presence of armed non-state actors in source countries has provided the ideal context for large-scale poaching to take place (Lawson and Vines, 2014). Illegal hunting appears to spike during periods of political instability or poor governance, due to breakdowns in law enforcement and elevated reliance by people on natural resources for survival (Lindsey et al, 2015). In Mozambique, for example, wildlife populations were decimated through unregulated hunting during and after the civil war (Hatton et al, 2001 in Lindsey et al, 2015). In North West Tanzania, the placement of refugee camps close to wildlife areas resulted in a major spike in illegal hunting and significant reductions in wildlife populations (Jambiya et al, 2007). In Garamba NP in Democratic Republic of Congo, bushmeat hunting increased fivefold during periods of armed conflict (de Merode et al, 2007 in Lindsey et al, 2015) and by 2013 the park's population of 22,000 elephants had decreased by 90% to around 2,000 animals (Nellemann et al, 2014). It is often alleged that wildlife trafficking contributes to political violence, or even terrorism, but the links remain disputed (see Douglas and Alie, 2014; Lawson and Vines, 2014; UNODC, 2016). For example, forensic analysis indicates that most illicit ivory is coming from just a few publically managed reserves, and the location of these reserves suggests that corruption, rather than conflict, is the primary enabler of elephant poaching (UNODC, 2016).

Corruption

Corruption among government and private sector officials is a key enabling factor of the IWT (Weru, 2016). The UNODC (2016) reports corruption as the most important enabling factor behind IWT. The fact that wildlife contraband, especially rhino horn and elephant ivory, has been exported from Kenya only to be seized in transit or in destination countries means that wildlife traffickers are able to exploit security loopholes in the country's law enforcement network (Weru, 2016). Because officials can transform contraband into legal product with a single piece of documentation, these documents have a large cash value (Nelleman et al, 2014). Officials

authorizing imports and exports can similarly assure smooth passage, and once inside the destination market, most wildlife products can be sold without question (UNOCD, 2016). Bribery, cronyism, embezzlement and fraud all take place in relation to IWT. For example, in Cameroon, the Last Great Ape Organization (LAGA) documented bribery attempts in 85% of its field enforcement operations against wildlife traffickers and in 80% of all court cases (<http://www.laga-enforcement.org/Corruption/tabid/180/language/en-US/Default.aspx>).

There is a lack of systematic studies on key issues relating to corruption in conservation, and the only available evidence of its prevalence comes from case studies, media reports and examples from similar sectors (Smith et al, 2015). An increasing amount of evidence on the impacts of corruption in conservation comes from elephant projects. Given the involvement of organized criminal enterprises along the entire commodity chain, from elephant range states to some of the main ivory consumer countries, corruption enables the laundering of illegal ivory into legal or potentially legal markets. Bribery opportunities exist and are exploited at all points in a trade chain. Findings reported in the academic literature show correlations between elephant population trends and corruption and document the role of corruption in the illegal killing of elephants for ivory and meat (see Bennett, 2014; Smith et al, 2015). Governance at the national level consistently emerges as a strong predictor of elephant poaching levels in CITES MIKE program analyses (Bennett, 2014). Smith et al (2015) fear that if corruption is not addressed the distribution patterns of elephants in Africa will resemble those of Africa's rhinoceroses, which have relatively large populations in countries with low levels of corruption and small populations in a few high-profile protected areas in countries where corruption is more prevalent.

Regulatory failure

Legislation on environmental crimes in many countries in Sub Saharan Africa is under-developed (Nellemann et al, 2014). In many countries communities lack clear rights over their land or the wildlife that they live with. In such areas illegal hunting is often the only means through which communities can access benefits from wildlife. In some places, efforts have been made to remedy this situation through the development of CBNRM programmes through the devolution of user-rights over wildlife to communities. For example, Namibia has one of the greatest rhino conservation successes ('t Sas-Rolfes, 2015). In many Namibian conservancies the rights to use and harvest wildlife have been devolved to local landholders and communities. These models rely heavily on regulated trophy hunting, which finance conservation and rural development, and provide meat to local residents. In other places, NGOs, government agencies or private landholders retain considerable control of wild resources, but share benefits with local communities (Phelps & Biggs, 2015). However, in most cases (such as in Botswana, Tanzania, Zambia and Zimbabwe) devolution is only partial, with the effect that government retains significant proportions of revenue from wildlife (Suich et al, 2009 in Lindsey et al, 2015). As a consequence, wildlife-based land uses are greatly disadvantaged relative to alternatives, and the incentives for conservation are weak. The recent increase in rhino poaching in South Africa coincides with a reversal of the trend towards stronger property rights and markets in that country. Significantly, around 2008 South Africa passed legislation that effectively diminished the rights of rhino owners, thereby greatly reducing their incentives to protect and invest in further stocks ('t Sas-Rolfes, 2015). Another problem is that wildlife laws are not harmonized among neighbouring countries, which can create loopholes for illegal hunters (Lindsey et al, 2015). For example, the penalties for illegal hunting in Kenya are lighter than those in neighbouring Tanzania, encouraging hunters from Tanzania to operate across the border (Lindsey et al, 2015).

Enforcement failure

Even when levels of governance are good and regulations clear, enforcement agencies may experience problems (for example due to lack of capacity and resources) with applying and enforcing national laws. Another common problem is the lack of priority given to environmental crime (OECD, 2012); sentencing guidelines typically address petty crimes and do not reflect the serious nature and involvement of organized crime, proving little deterrent (Nellemann et al, 2014). Furthermore, wildlife laws are poorly enforced due to inadequate investment (and expertise) in anti-poaching and low conviction rates for illegal hunters. There is a tendency for the police and judiciary to treat wildlife crimes as being of low priority, even in comparison with other environmental crimes (Lindsey et al, 2015). In Zimbabwe, convicted stock thieves are granted six years imprisonment for the theft of a goat worth US\$20-30, whereas a poacher convicted of killing a sable antelope worth US\$16,000 would be given a nominal fine, community service or released with a warning (Lindsey et al, 2011).

Lotter and Clark (2014) reporting on the Ruvuma Elephant Project (REP) within the Selous–Niassa ecosystem in southern Tanzania, reported that a lack of a strong prosecution and fining system was creating an enabling environment for poaching, as the lack of serious consequences lured locals into poaching. Many poachers who are caught are freed shortly thereafter, or are fined lightly and are thus not put off sufficiently to deter them from going back and poaching again. However, this trend changed once these aspects were better addressed and some poachers who were previously freed shortly after being arrested, have been properly convicted and sentenced to prison terms ranging from 3 years to 10 years. During the symposium ‘Beyond enforcement: communities, governance, incentives and sustainable use in combating wildlife crime’ (IUCN et al, 2015) held in February 2015 in South Africa, a panel session focussing on Namibia and its approach to wildlife conservation commented on the current outbreak of poaching. It was noted that, in 2014, 15 rhinos were poached in the north west of Namibia. The local community was aware of who was doing the poaching and provided information, however, the police lacked the motivation to deal with rhino poaching and did not perceive it as a serious crime. A similar case of elephant poaching in Caprivi, Namibia, where the poachers were also well known, was also experiencing a similar problem but related to the judiciary and the limited capacity to bring about successful prosecutions. Hence there is no strong deterrent to poaching.

4. Economic Effects of the IWT in Sub Saharan Africa

The impacts of wildlife crime on specific wildlife populations and on biodiversity in general are well documented (see CITES Secretariat et al, 2013), but wildlife crime has much broader impacts on poor people and poor countries (Harrison et al, 2015). These costs of the IWT are not always obvious or not always fully quantified. Consequently, this area of crime is often seen as “victimless”. The economic effects of IWT can vary hugely, in terms of type and scale, depending on the sector and the type of illegal activity. The economic impacts for those engaged in illegal trade, can be both negative and positive (OECD, 2012). Critically these costs and benefits are not evenly distributed among individuals within a community (Naidoo et al. 2016).

National Level Impacts

The economic impact of IWT at the national level is complex and varied, and poorly understood. According to a report by the OECD (2012), generally, it will impact directly on loss of government revenue, natural resource base and value of goods traded. Indirect impacts from IWT include the

loss of income and employment in related industries and activities, and it may also result in environmental or other damage that necessitates economic costs to clear up. Developing countries tend to be more dependent on natural resources as a source of revenue. Wildlife can be a key asset for rural communities in Africa and elsewhere, providing a foundation for investment and economic development. Depletion of this asset as a result of poaching can undermine this foundation – limiting options for local and national sustainable development (Harrison et al, 2015). IWT can also undermine efforts to manage these resources sustainably, thus reducing a country's ability to profit from them in the future (OECD, 2012). Smith and Porsch (2015) undertook to calculate the economic costs of the IWT related to Elephants and Rhinos to African economies. Their quantitative analysis found that overall, the poaching of rhinos and elephants causes significant damage to African economies both by taking away current and legal income opportunities for African economies and also by reducing the natural capital on which all future income opportunities are based. They also found that the significant annual expenditure for the safeguarding of the hunted animals and the impact of the trade on the governance of the source countries, increasing corruption and organised crime, are a serious impediment for economic development. Duffy and St John (2013) draw attention to the opportunity cost of tourism foregone as a result of illegal wildlife trafficking - not just as a result of depletion of wildlife assets but also as a result of the insecurity associated with organised wildlife trafficking. Lawson and Vines (2014) provide an overview of evidence confirming that illegal wildlife trade erodes state authority and fuels civil conflict, threatening national stability and provoking substantial economic losses, this is also reflected in Douglas and Alie (2014).

Local Level Impacts

An OECD report (2012) found that economic impacts of the IWT at the local level and in rural livelihoods are complex and varied, it is also poorly understood. In some situations and for certain stakeholders the IWT may be more profitable than its legal equivalent. Illegal activities may be one of the few sources of income available, and so can become important for rural and isolated communities. Often these benefits prove transitory or they are won at the expense of longer-term livelihood resilience (OECD, 2012). When thinking about the impacts of wildlife crime on poor people, distinguishing between different types of crime is important (Harrison et al, 2015). Illegal trade in some high value wildlife species and products, including elephant ivory, rhino horn, can be a lucrative business, forming a source of significant income for some people. However, many so-called 'crimes' are committed by poor people struggling to meet subsistence needs. Here access to critical resources through incursions into protected areas or unauthorised hunting makes a positive contribution to their livelihoods. For example, in northern Tanzania, TRAFFIC (Jambiya et al. 2007) highlight how bushmeat hunting was benefiting refugees, by providing a source of protein and income. However, the most tangible financial benefits from wildlife accrued by local and central government in this part of the country is derived from trophy hunting, which wild meat offtake had a negative impact on. Poaching and illicit wild meat consumption has also led to negative attitudes towards refugees.

As demonstrated by the previous example, while access to, use and sale of wildlife resources obtained illegally can provide immediate benefits to many poor people, when wildlife crime occurs at a large scale and at unsustainable levels it can have much broader and longer-term negative impacts on poor people and poor countries. Among the direct recipients of negative impacts are those individuals on the frontline of trying to prevent wildlife crime. This includes law enforcement officials and park rangers, but also local communities who are often engaged in supporting law enforcement efforts (Harrison et al, 2015). In the Ruvuma Elephant Project in

Tanzania, for example, community game guards have been shot and had their homes destroyed by fire (Lotter and Clark, 2014). Beyond the frontline, wildlife crime can undermine the long-term sustainability of the natural resource base on which the majority of the rural poor depend, as many of the products in the IWT that are traded internationally also have an important role for local economies and in meeting subsistence needs (Harrison et al, 2015; OECD, 2012). Depletion of wildlife populations can also limit opportunities such as development of tourism or mechanisms for payments of environmental services, provision of income for rural communities, and loss of future opportunities. A case study on poaching of elephant and other species in Gonarezou National Park in Zimbabwe (Edson Gandiwa, Chinhoyi University of Technology in IUCN et al, 2015, p.5) noted how illegal wildlife trade is undermining the development potential of the area. In particular it is perceived to be compromising the ecotourism potential, reducing the trophy quality for safari hunting, and limiting the financial benefits from CBNRM. It is also resulting in increased tension between local people and protected area staff. Similarly, Rhino poaching in Kruger National Park was noted to have both positive (income and improved quality of life) and negative (erosion of heritage, social conflict) impacts (Mlandelwa Nqobizitha Ndlovu, Resource Africa in IUCN et al, 2015, p.5).

Uganda Case Study

Harrison et al (2015) in their review of wildlife crime in Uganda, confirmed the general patterns described above and suggests that wildlife crime has a net positive short-term impact on individuals, and a net negative long-term impact on communities and Uganda as a whole. Assuming they are not caught and punished, individuals who engage in wildlife crime receive the benefit of having access to the resources they need or desire. Subsistence use of forest resources is reported to prevent extreme impoverishment of households around Kibale National Park. The review also found that it is possible that wildlife crime can be used to break the poverty cycle in the long term, for example if poorly educated people use the profits to pay for their children's education, who can then go on to gain employment. But, local people can be negatively impacted by wildlife crime too. For example, Ugandan children have reportedly been encouraged to leave school by the opportunity to engage in profitable illegal activities. The longer-term negative impact of wildlife crime is loss of biodiversity and environmental degradation. This is a particularly significant problem in Uganda, where up to 7.9 per cent of GDP is currently earned from tourism (Harrison et al, 2015).

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Key websites

- International Institute for Environment and Development: <https://www.iied.org>
- TRAFFIC: <http://www.traffic.org/>

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