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Wildlife Crime and Other Challenges to Resource System Resilience

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WILDLIFE CRIME AND OTHER CHALLENGES TO RESOURCE SYSTEM
RESILIENCE

by

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ABSTRACT

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RESILIENCE

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Old Dominion University, 2015
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Although wildlife crime has exploded in Africa over the past decade —“commercial poaching” now kills an estimated eight percent of the continent’s elephant population each year—some governments have proven more successful than others at protecting wildlife and preserving habitats. To explain this variation, this study examines how the policies of three states (Kenya, Tanzania, and Botswana) have enhanced or undermined the resilience of the continent’s elephant ecosystem. Using the social-ecological system framework, the study illustrates how each state’s changing practices have either exacerbated the stresses wrought by wildlife crime or successfully protected local populations from poaching. The study finds that monocausal explanations cannot explain social-ecological systems outcomes. Cross-level and cross-scale dynamics, including temporal, geospatial, epistemological, and institutional linkages, explain variation in system functionality. These dynamics include colonial policies, governance practices, the international conservation community, and resource use decisions.

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For my Dad

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CHAPTER 1

PROBLEM STATEMENT AND INTRODUCTION

The African elephant, once numbering in the tens of millions, teeters on the edge of extinction due to a massive increase in demand for ivory and a corresponding commercial poaching crisis. The most current estimates place the surviving number of African elephants between 200,000- 400,000 across the continent. Historically populations stood at over ten of million. The current wave of poaching is focused on Central and East Africa, though as elephants are poached out in those areas poachers are turning their attention to herds across southern Africa where an “avalanche” of poaching is expected to occur in the next several years. As many as 50,000 African elephants are illegally killed each year.¹

Transnational organized crime [TOC] controls the illicit international trade in ivory. The legal trade was banned in 1989 by the Convention on the Trade in Endangered Species [CITES]. The monetary and organizational resources required to direct large scale poaching, consolidate large amounts of ivory, containerize and ship these massive quantities of ivory, and the complex shipping routes involved, all point to the involvement of TOC. These organized crime groups are Asian-run and Africa based, directly connecting end markets in China, and to a lesser extent other states in Asia, with the illegal killing of African

¹ Daniel Cressey, "Nations Fight Back on Ivory: Politicians Take Action on Poaching in Africa as Tusk Seizures Approach Record Numbers," *Nature* 503, no. 452 (2013).

elephants.² China emerged over the last decade as the primary market for ivory, with the illicit market increasing ten-fold since 2005. Poaching levels in Africa directly correlate with the price of ivory in China.³

Ivory poaching, when viewed within the context of transnational environmental crime, threatens both immediate and long term stability in African states. In the immediate term poaching, when carried out by non-state armed groups, threatens both populations at the site of poaching and populations targeted by extremists. Poaching is comorbid with other illicit activities which include recruitment of child soldiers, human trafficking, mass rapes/sexual exploitation, and murder.⁴ Poached ivory finances terrorist and violent organizations, while increasingly brutal poaching operations create war zones between poachers and park rangers. Poaching directly threatens the economic security of rural communities, often heavily reliant on tourism.⁵ Poachers are known to torture and kill anti-poaching personnel.⁶ Rangers in particular are under threat, with over 1,000 across 35 countries killed in the last decade.⁷

² Jeffrey Gettleman, "Elephants Dying in Epic Frenzy as Ivory Fuels Wars and Profits," in *New York Times*, http://www.nytimes.com/2012/09/04/world/africa/africas-elephants-are-being-slaughtered-in-poaching-frenzy.html?pagewanted=all&_r=1& Varun Vira, Thomas Ewing, and Jackson Miller, "Out of Africa: Mapping the Global Trade in Illicit Elephant Ivory," (2014), http://www.bornfree.org.uk/news/news-article/?no_cache=1&tx_ttnews%5Btt_news%5D=1660.

³ Yufang Gao and Susan G. Clark, "Elephant Ivory Trade in China: Trends and Drivers," *Biological Conservation* 180 (2014).

⁴ United Nations Security Council, Report of the Secretary-General on the Activities of the United Nations Regional Office for Central Africa and on the Lord's Resistance Army-Affected Areas, (New York: United Nations, 2013), http://www.un.org/ga/search/view_doc.asp?symbol=S/2013/297.

⁵ IFAW, Criminal Nature: The Global Security Implications of the Illegal Wildlife Trade, (International Fund for Animal Welfare, 2013), <http://www.ifaw.org/united-states/resource-centre/criminal-nature-global-security-implications-illegal-wildlife-tra-0>.

⁶ Christopher Jaspardo, Environmental Threats to Security, Stability, and Us Interests in Southern Africa: Opportunity Knocks- Time for a Comprehensive Regional Defense Environmental International Cooperation and Environmental Security Assistance Strategy, (Naval War College, 2009).

⁷ IFAW.

Environmental crime can spur displacement, either temporary or permanent, depending on the ecological damage sustained. Wildlife crimes such as overfishing, or dumping toxic waste, negatively impact food security, disrupt local economies, reduce revenues from state coffers, and severely impact health.⁸ The illicit wildlife trade also helps spread animal-borne diseases. Ivory is considered by many experts to be the new “conflict diamonds,” hunted and traded by militants for weapons, ammunition, food, and other material required to sow instability.

In the long term poaching, conceptualized as a major transnational environmental crime and as part of a transnational organized crime establishment, contributes to the erosion of the state across the continent, highlighting the ability of countries to control their own borders, resources, and government policies. As illicit economies grow and political power is looted by transnational criminal organizations states will weaken further in a viscous cycle of state degradation accompanied by increased foreign illicit trade.

While TOC clearly plays a role in commercial ivory poaching, it is less clear how other factors interact to either undermine or bolster wildlife protection measures in areas where African elephants live, or as a resource managed at the international level. How TOC combines with other key variables including governance systems, socio-economic calculations of users, law enforcement, norms of wildlife conservation, land use practices, expectations of development, levels of security, and infrastructure development, among other factors, to impact

⁸ Andre Le Sage, "Non-State Security Threats in Africa: Challenges for Us Engagement," *Prism* 2, no. 1 (2010).

elephant populations are key questions with implications for the survival of the species.

Currently far more resources are devoted to supply side approaches to fighting wildlife crime than demand reduction strategies.⁹ The supply side approach to illegal trades essentially argues that if no illegal goods are moving from one country to another, than no consumption can take place. This assumes curtailing supplies is the best way to curb consumption. From the standpoint of the consumer country, policies focused on restricting supply are far easier, in part because it allows blame for weak enforcement and increased rates of illegal killing to be shifted from consumers to suppliers. Because of the emphasis on supply reduction strategies within policy circles, this study primarily focuses on challenges related to wildlife management on the supply side, while acknowledging in multiple instances the key to understanding dynamics operating across the resource system.

The exponential growth of wildlife crime and the increased penetration of TOC into the global wildlife sector raise important questions about the future sustainability of wildlife resources. What conditions exist which allow some states to better protect their wildlife than other states? How can states in the developing world withstand the pressures of rising global demand for limited wildlife resources? This project employs a case study analysis to compare three African states- Botswana, Kenya, and Tanzania- and their relative success or failure protecting wildlife. The primary research question revolves around Botswana and

⁹ Todd Reubold, "Peter Knights: Curbing the Demand for Wildlife," in *Ensisia.com* (29 May 2014), <http://ensia.com/interviews/peter-knights-curbing-the-demand-for-wildlife/>.

its success battling poachers. What group of factors operate together to protect wildlife and maintain sustainability? Multiple goals animate this research including, first, to explicate and describe the potential causal factors degrading or improving SES resilience related to poaching; second, to identify and explain cross scale and cross level challenges to SES performance; third, to describe and compare specific case studies utilizing the SESF; and fourth, to contribute to a critique of present conservation strategies related to social components of the SES.¹⁰

Lacking effective institutional protection at the state and international level, elephant populations are declining in most of their range beyond reasonable expectations of viability. For any hope to remain for saving endangered species researchers and policymakers must understand the complex local/global interlinkages between the governance systems and resource users making decisions that impact animals and habitats and the multitude of outcomes flowing from those decisions. In a world characterized by globalization proximity to a resource is not required to produce impacts, either positive or negative. When extinction is so closely related to human activity simple solutions focused primarily on the natural sciences are bound to fail. To chart a path towards a sustainable future for African elephants and other species an interdisciplinary approach is required to identify all of the relevant variables and factors at play to diagnose which background conditions impact outcomes, and how they can be altered.

¹⁰ Firkhart Berkes, Johan Colding, and Carl Folke, "Introduction," in *Navigating Social-Ecological Systems*, ed. Firkhart Berkes, Johan Colding, and Carl Folke (Cambridge: Cambridge University Press, 2008).

Ostrom et al points out six concerns particular to the international management of global common pool resources such as the African elephant, illustrating again the complexity of both diagnosing problems with resource management and finding and applying effective solutions.¹¹ First, Ostrom et al notes a scaling up problem related to the number of participants necessary to agree on and enforce rules for the use and management of a resource.¹² Who gets a say in a world with billions of CPR users? The second issue relates to the “cultural diversity challenge” which captures the difficulty of identifying and solving problems across cultures, in particular when a paternalistic or economic “north-south” conflict impacts issue areas. Third are problems associated with the simultaneous interconnectedness of communities across the global linked through shared global problems like acid rain, deforestation, and climate change, and the disconnectedness of people within their own communities, with each other, and with the environment. Fourth, significant changes, even those on a global scale, can occur far more quickly than in the past. Environmental thresholds are passed before enough people to make a difference even recognize, or agree that, a problem exists. Fifth, Ostrom notes the difficulty in achieving unanimity amongst international actors for collective choice actions. And lastly, CPRs at the global level are limited and finite. Some decisions and actions are permanent, and mistakes made by international regimes monitoring resources, whether based on

¹¹ Elinor Ostrom et al., "Revisiting the Commons: Local Lessons, Global Challenges," *Science's Compass* 284 (1999).

¹² Ibid.

politics or science, have real, and sometimes irreversible, impacts on resources.¹³

As a global CPR the African elephant SES faces all of these challenges. At the international level agreement of the scope, scale, or drivers of poaching has not been achieved within CITES, the primary resource manager. With culturally diverse resource users, normative concerns and priorities differ significantly. Global markets link wealthy users and commodities, yet exclude impoverished locals who cannot affect change or access economic benefit from use of the CPR. The speed of the assault on wildlife, and the scale over which it has occurred, decreased the ability of resource managers at any level to stop the slaughter of hundreds of thousands of elephants. And lastly, the African elephant is a finite resource being exploited by an almost infinite pool of users. The so far ineffective response to the current poaching crisis could result in the irreversible transformation of a valued global common pool resource- the African elephant- and its eradication across most of its range within the next decade. In brief, the study finds multiple interactions and factors contributed to the resilience or degradation of elephant habitats in Africa, and that while some factors impacted each case study in a similar way, generalizing across cases may not be effective due to the heterogeneous nature of social-ecological systems operating over time and in specific geographic, political, and economic contexts. Key interactions policymakers should consider when diagnosing challenges to resource systems are between resource users and governance

¹³ Marco A. Janssen, John M. Anderies, and Elinor Ostrom, "Robustness of Social-Ecological Systems to Spatial and Temporal Variability," *Society & Natural Resources* 20, no. 4 (2007).

authorities both in the present and in the past. Questions to explain current outcomes could include how resource users traditionally utilized and interacted within the system; how norms have been degraded or strengthened by interactions with governing authorities; how policies either strengthen or weaken norms; and how policies encourage or discourage, intentionally or not, certain resource usage strategies. Other key interactions important to understanding resource use in a system transnationally involve the aggregated actions of geographically removed resource users; their understanding of resource use impacts on the system, and their role in bringing about those impacts; and cultural framing of resource challenges across levels.

This study increases understanding of illicit traffics occurring as part of the illicit global economy, defined by Friman and Andreas as “the system of transnational economic activities that are criminalized by states in importing or exporting countries.”¹⁴ The growth of illicit economies, in particular that embedded in transnational criminal organizations, and entrenched in local, national, and regional political economies, is impacting states in multiple ways.

As Williams notes, the corrosive influence of transnational criminal organizations can lead to the capture or criminalization of the state.¹⁵ According to Williams, state capture occurs when “at least some criminal organizations cloak their power in the mantle of state authority... (and) states continue to carry

¹⁴ Richard Friman and Peter Andreas, "Introduction: International Relations and the Illicit Global Economy," in *The Illicit Global Economy and State Power*, ed. Richard Friman and Peter Andreas (Lanham: Rowan & Littlefield, 1999).

¹⁵ Phil Williams, "Crime, Illicit Markets, and Money Laundering," in *Managing Global Issues*, ed. P.J. Simmons and C. de Jnngé Oudrat (Washington, DC: Carnegie Endowment for International Peace, 2003).

out some traditional functions while simultaneously allowing criminal enterprise to continue unhindered.”¹⁶ Criminalization occurs when “government personnel are deeply involved in commission and orchestration of transnational crime... criminal activities are endorsed or organized by officials ... (within a) seamless web between the state and entrepreneurs in both licit and illicit economies.”¹⁷

Shelley argues the links between transnational crime and terrorism occur to the greatest extent in areas with high levels of corruption.¹⁸ Corruption is one of the most effective and pernicious weapons of organized crime. Organized crime, non-state armed actors, and to some extent armed groups affiliated with the state, benefit when the state is weakened by corruption.¹⁹ Government complicity in organized crime undermines the confidence of local populations in their government. For example, as a result of government complicity in transnational crime, in Kenya less than 10% of people expressed any trust in parliament, the police, or the judiciary.²⁰ Rule of law is undermined through corruption of law enforcement and the judiciary. Government officials, when implicated in transnational crime, are rarely prosecuted, further undermining government legitimacy.²¹

Illicit economies impact state revenues in at least two ways. First, transnational crime robs governments of the funds required to perform primary functions

¹⁶ Ibid., 139.

¹⁷ Ibid.

¹⁸ Louise Shelley, "Unraveling the New Criminal Nexus," *Georgetown Journal of International Affairs* 6, no. 1 (2005).

¹⁹ Williams, "Crime, Illicit Markets, and Money Laundering."

²⁰ Peter Gastrow, *Termites at Work: Transnational Organized Crime and State Erosion in Kenya*, (New York: International Peace Institute, 2011).

²¹ Marc Shaw and Tuesday Reitano, "The Evolution of Organized Crime in Africa: Towards a New Response," *Institute for Security Studies* 244 (2013).

related to fighting corruption, guarding borders, and developing the economy, among other things. The second affect of revenue loss relates to the distorting affect of the large amount of illicit dollars floating economies. Criminal groups inject resources into communities, undermining efforts at local government capacity building and legitimacy creation.²² Lesage points out that African citizens, beset by insecurity and criminality on a day-today basis exhibit what he terms a “retreat from the state.” Individuals seek security and welfare from “nonstatutory arrangements” instead of looking to the state for welfare and the provision of security. This contributes to the undermining of the connection between states and societies- individuals look elsewhere for economic and physical security.²³ Illicit econimiers and traffics provide a source of employment and represent a large part of developing economies’ income and can sometimes be the most accessible means to accumulation for impoverished communities.²⁴ Profits can benefit local communities, which suffer from poverty, unemployment, and a general lack of opportunity. Allowed to flourish, illicit markets can develop local institutions and control the narrative around their enterprises to embed in communities. They can exploit grievances against government policies and resentment towards lack of development and lack of opportunity.²⁵

Non-state armed groups challenge a state’s ability to control its borders by corrupting officials and institutions to work around border control measures.²⁶

The ability of states to monopolize the use of coercive force is increasingly under

²² Ibid., 244.

²³ Le Sage, "Non-State Security Threats in Africa: Challenges for Us Engagement."

²⁴ Williams, "Crime, Illicit Markets, and Money Laundering."

²⁵ Ibid.

²⁶ Ibid.

question as organized crime actors and armed groups impose their will on communities in areas with weak state institutions. Non-state actors include militias, vigilantes, terrorists, and insurgents. These groups may work in conjunction with the state or with local communities to provide security, or can be groups operating outside of state control. Either way, the proliferation of such groups suggests a loss of the state monopoly on coercion.²⁷ Increasingly, states cannot protect their citizens or their territory from transnational threats of either a criminal, terrorist, or other non-state armed group.²⁸ Local and transnational non-state actors have been successful in wresting control away from the state, presenting a new challenge to local, national, and international security. These threats exist above and below the state, and cross boundaries locally and transcontinentally.²⁹

The next chapter reviews the literature on explanations for poaching to identify areas of further investigation, and to explain why a focus on any one variable alone cannot explain the complex interactions which are required to facilitate the commercial exploitation of protected species across levels of analysis. The following chapter discusses the study's research design, describing the social ecological systems framework it adopts as a model; six hypotheses; and relevant measurement tools. Chapter 4 examines how human action is shaping the African elephant ecosystem through over-harvesting of

²⁷ Diane Davis, "Non-State Armed Actors, New Imagined Communities, and Shifting Patterns of Sovereignty and Insecurity in the Modern World," *Contemporary Security Policy* 30, no. 2 (2009).

²⁸ Louise Shelley, "Transnational Organized Crime: The New Authoritarianism," in *The Global Economy and State Power*, ed. Richard Friman and Peter Andreas (Lanham: Rowman and Littlefield, 1999).

²⁹ Davis, "Non-State Armed Actors, New Imagined Communities, and Shifting Patterns of Sovereignty and Insecurity in the Modern World."

finite resources at the international level and range state level, nested immediately below. Chapters 5 and 6 provide case studies for two countries, Kenya and Tanzania that have struggled to protect elephants from transnational organized crime. Chapter 7 examines Botswana, a country that so far has successfully protected elephants from over-harvesting. The final chapter illustrates how the social-ecological systems framework explained outcomes in the international resource system and the three case studies, Kenya, Tanzania, and Botswana; review's the study's principle findings; and identifies areas for further research.

CHAPTER 2

LITERATURE REVIEW

This literature review examines common explanations for poaching to identify areas of further investigation, and to explain why a focus on any one variable alone cannot explain the complex interactions which are required to facilitate the commercial exploitation of protected species across levels of analysis. At the individual level relative wealth, whether presented as poverty at the production end or as extreme wealth at the consumption end, focuses on aggregated individual choices as key factors. The role of conservation norms, expressed through active decisions on resource use by locals living near wildlife areas, provide insights on how both background conditions and normative shifts impact wildlife usage choices. At the state level of analysis failures in governance of wildlife resources- including ineffective wildlife law enforcement, corruption, and unclear authority structures- contribute to explanations for overexploitation of resources. Explanations which focus on the international level examine the failure of international regimes to adequately police the trade in African elephant ivory both from pro- and anti- sales perspectives. Other explanations at this level consider how liberalization impacts wildlife resources, again considering both positive and negative implications for sustainability. Neoliberal models of development promote commodification, market competition, and diversification and competitive marketing, ignoring externalities that undermine the resilience of social-ecological systems.

All of these factors contribute to the challenges associated with protecting wildlife resources, and understanding each factor separately provides important insights. However the majority of analysis on poaching tends to favor one simple set of variables- such as the rise in demand, or weak conservation norms- ignoring the interaction of sets of variables across levels and scales in favor of mono-causal, reductive, and uncomplicated variables. The preference for simple diagnostics lead to simple solutions, ignoring key variables and temporal and spatial differences in resources and utilization practices, limiting the opportunity for policy success for what are generally deeply complex issues.¹

The literature review highlights three important findings. First, scale dynamics across individual, community, national, and international levels of analysis impact resource management decisions. Wildlife resource systems are closely linked into the global political economy. Second, ignoring scale dynamics impedes the ability of policymakers to assess and diagnose challenges to resource systems at all levels. For example, an explanation reliant only on the rise in demand for wildlife products ignores the role of weak conservation norms, or the politics of land management and its impacts on communities' perceptions of wildlife. Moreover, it is important to understand how the interactions between levels and scales, and the resource users and governance systems embedded in them, operate together to determine certain outcomes. Third, there is not one single set of solutions or single correct articulation of a system's challenges,

¹ Elinor Ostrom, "A Diagnostic Approach for Going Beyond Panaceas," *Proceedings of the National Academy of Sciences of the United States of America* 104, no. 39 (2007). Diana Liverman, "Who Governs, at What Scale and at What Price? Geography, Environmental Governance, and the Commodification of Nature," *Annals of the Association of American Geographers* 94, no. 4 (2004).

which can be applied at every scale or level.² Systems evolve through interactions between and among actors and institutions “and resources constrained and shaped by a given social-ecological setting.”³ They are heterogeneous by nature, and are unlikely to respond uniformly to the application of generic policies. Successful policy solutions in North America may lack relevance in Sub-Saharan Africa.

The literature review does not seek to refute any of the identified factors, but rather to highlight the necessity of a more inclusive analysis, which accounts for a multitude of factors across levels and scales. The key questions to consider at each juncture include what other conditions exist which create an opening for resource users and governance systems to operate as a force to either conserve, or exploit, species?

Individual Level Factors

Poaching and Relative Wealth

One set of explanations for the rise in poaching looks at the relative wealth of poachers and consumers to explain both decisions to poach and decisions to purchase wildlife products. In origin countries poverty is assumed to be associated with high levels of poaching, though the actual connection between

² D. W. Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World," *Ecology and Society* 11, no. 2 (2006).

³ M. Schlüter et al., "Application of the Ses Framework for Model-Based Analysis of the Dynamics of Social-Ecological Systems," *Ecology and Society* 19, no. 1 (2014). p. 36 and C. S. Holling and L. H. Gunderson, "Resilience and Adaptive Cycles," in *Panarchy: Understanding Transformations in Human and Natural Systems*, ed. C. S. Holling L. H. Gunderson (Washington, DC: Island Press, 2002).

poverty and poaching is unclear. The CITES' monitoring program, Monitoring the Illegal Killing of Elephants [MIKE], finds poverty correlates with high levels of poaching, though demand plays a larger role.⁴

The people often blamed for poaching, those living near wild animals or those working with them, typically live in marginal landscapes and enjoy few opportunities for economic success or enrichment.⁵ For individuals with short time horizons, incentive calculations may likely favor immediate use of a resource.⁶ Even where powerful norms exist for preservation, such as in Baka Pygmy communities, people will often make decisions with the current generation in mind, even when resources cannot be sustained or managed by such decision making.⁷

However analysis conducted by TRAFFIC found that improving the livelihood of harvester communities often failed to reduce their participation in illicit wildlife trades.⁸ Similarly the Organization for Economic Cooperation and Development finds poverty is not a cause of the illegal trade in wildlife.⁹ In some communities large percentages of the population, the impoverished and the

⁴ CITES Secretariat, "Elephant Conservation, Illegal Killing and Ivory Trade," in *SC62 Doc. 46.1 (Rev. 1)*, ed. Convention on International Trade in Endangered Species of Wild Fauna and Flora (Geneva, Switzerland: Convention on International Trade in Endangered Species of Wild Fauna and Flora, 2010).

⁵ James M. Acheson, "Institutional Failure in Resource Management," *Annual Review of Anthropology* 35 (2006).

⁶ Nguyen Van Song, "Wildlife Trading in Vietnam- Situation, Causes, and Solutions," *The Journal of Environment Development* 17 (2008). Acheson, "Institutional Failure in Resource Management."

⁷ Jeffrey Gettleman, "In Gabon, Lure of Ivory Is Hard for Many to Resist," *New York Times*, 26 December 2012, http://www.nytimes.com/2012/12/27/world/africa/in-gabon-lure-of-ivory-proves-hard-to-resist.html?_r=0.

⁸ "Traffic and Cites," TRAFFIC, 2008 <http://www.traffic.org/cites/>.

⁹ "Illegal Trade in Environmentally Sensitive Goods," Organization for Economic Cooperation and Development 2012 <http://www.oecd.org/trade/envtrade/illegaltradeinenvironmentallysensitivesensitivegoods.htm>.

slightly better off, utilize wildlife products to generate income, suggesting the interaction between poverty and poaching is more complex than a simple equation of poverty as a cause of poaching.¹⁰

Moreover, the trope of the impoverished poacher merely feeding his family clouds the relationship between organized crime and poaching, and implies a simplicity related to the decision to poach. Whether fully recognized or not, poachers are tied to networks of transnational organized criminals. Poachers may come from security forces, park staff and guards, the conservation community, professionals, politicians, militia groups, insurgents, terrorists, and poor farmers and herders. Interestingly in Africa elephant carcasses are typically discovered with only the tusks taken, indicating that food and other subsistence requirements are not being satisfied through elephant hunting. The organized nature of hunts, the massive scale of kill sites, and the failure of poachers to take the meat of elephants or even all of an elephant's marketable body parts, further points to other factors aside from poverty as playing a role.¹¹ While poverty does not necessarily compel individuals to poach conditions exist in poor areas- lack of economic opportunity, weak law enforcement, the penetration of transnational criminal networks, easy access to weaponry, and lack of environmental education or awareness of laws protecting wildlife, which contribute to poaching.

The type of poaching- commercial or subsistence- must be differentiated from the outset to determine the appropriate governance reaction. Poverty and want clearly play a role in the later, but the latter is far rarer when referring to

¹⁰ Van Song, "Wildlife Trading in Vietnam- Situation, Causes, and Solutions."

¹¹ IFAW.

large species such as elephants. This is an important distinction because policies aimed at deterring one type of poaching lack relevance or effectiveness for deterring the other type of poaching.¹²

Increased Demand

The rising wealth, and accompanying increase in demand, in ivory consuming countries, in particular China, Thailand, and Vietnam, is cited as a direct driver of poaching across media and non-governmental organization (NGO) reporting. Increases in elephant poaching correspond with sharp increases in Chinese consumer spending dating to 2006 when savings rates stalled and Chinese consumption rose sharply.¹³ Prices of ivory have skyrocketed in China over the past five years, even as consumption has increased, tripling from 750\$ a pound for ivory in 2009 to over 2100\$ a pound in June 2014.

Historically Asians have considered wildlife as something to be used for medicine, food, clothing, or as decoration. Asians covet ivory in particular for its association with wealth, elevated social status, purity, beauty, and tradition.¹⁴ Wild products serve as status symbols through their demonstration of wealth and expense. Individuals perceive substitutes as not as valuable or as desirable.¹⁵ In

¹² Rosaleen Duffy, *Killing for Conservation: Wildlife Policy in Zimbabwe*, African Issues (Oxford: James Currey, 2001).

¹³ Christian Nellemann et al., "Elephants in the Dust – the African Elephant Crisis," (2013), www.grida.no

¹⁴ Rebecca Drury, "Reducing Urban Demand for Wild Animals on Vietnam: Examining the Potential for Wildlife Farming as a Conservation Tool, Letter," *Conservation 2* (2009).

¹⁵ Ibid.

some cases the rarity of a wild product drives its consumption, even to the point that the impact on the environment itself drives consumption, instead of inhibiting it.¹⁶ For example blood ivory, the ivory taken from elephants in the process of dying, is considered the most rare and valuable to Chinese collectors. Consumers also respond to marketing of new uses or methods of display for wild products, further increasing and driving demand.¹⁷

In China the rise in demand in the mid-2000s relates to the designation of ivory carving by the government as an important intangible heritage. This designation revived what was an almost dead industry, renewing interest in the craft from middle class Chinese as well as collectors and investors.¹⁸ Very high end investors began purchasing ivory at 'grey' auctions, stockpiling raw ivory against rise in prices, as middle class Chinese began purchasing smaller ivory keepsakes and jewelry.¹⁹

Arguments for extending or expanding the trade in ivory often rely on the assumption that demand is immutable. However, mounting evidence suggests that Chinese consumers are responsive to education campaigns and changes in government policy. Surveys by TRAFFIC, WildAid, and IFAW found that when Chinese consumers become educated on the impacts of ivory consumption they were less likely to purchase ivory products. A growing number of Chinese

¹⁶ N. Fiddes, *Meat: A Natural Symbol* (London: Routledge, 1992). Richard E. Hall, E. J. Milner-Gulland, and F. Courchamp, "Letter: Endangering the Endangered: The Effects of Perceived Rarity on Species Exploitation," *Conservation Letters* 1 (2008).

¹⁷ Debbie Banks, "Pro-Trade Lobby Unaware of Demand and Scope for Growth?," (2013), <http://www.eia-international.org/pro-trade-lobby-unaware-of-demand-scope-for-growth>.

¹⁸ Gao and Clark, "Elephant Ivory Trade in China: Trends and Drivers."

¹⁹ *Ibid.*

support a renewal of the trade ban.²⁰ In 2011 the Chinese government banned large auctions, with an immediate impact on sales of ivory. That year saw a slight drop in the number of large seizures reported which CITES and others attribute to the Chinese government's actions.²¹

Demand operates at multiple levels, involves a variety of volumes, across various groups, and is motivated by different factors. Government regulations, state rhetoric, availability, price, rarity, and understanding of the impacts on wildlife affect decisions to purchase. Important questions about consumers and how they make choices should be investigated to guide demand mitigations strategies.

Community Level Explanations

Conservation Norms

Other explanations for why African states cannot protect wildlife rely on the assumption that Africans lack conservation norms.²² Under this perspective local Africans “hate” wildlife and consider animals dangerous competitors for scarce resources. As such they view wildlife through the lens of human-wildlife conflict, do not see parks as relevant to their daily lives, and view conservation

²⁰ Grace Ge Gabriel, "With a New Year in China Comes a New Campaign," (2014), <http://www.ifaw.org/united-states/news/new-year-china-comes-new-campaign>.

²¹ Gao and Clark, "Elephant Ivory Trade in China: Trends and Drivers." George Wittemyer et al., "Illegal Killing for Ivory Drives Global Decline in African Elephants," *Proceedings of the National Academy of Sciences of the United States of America* 111, no. 36 (2014).

²² Doug Bandow, "When You Ban the Sale of Ivory, You Ban Elephants," (2013), <http://www.forbes.com/sites/dougbandow/2013/01/21/when-you-ban-the-sale-of-ivory-you-ban-elephants/>. Rodger Yeager and Norman N. Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa* (Albany: State University of New York Press, 1986). Bandow.

efforts more broadly as relating to colonial, i.e. white, heritage. In the border zones between parks and settlements human-wildlife conflict is intense, placing communities in direct competition with wildlife for scarce resources.²³ These competitions can result in crop destruction, damage to farm infrastructure, and serious injury or death for people. Elephants in particular can be incredibly destructive, they eat a large amount of vegetation each day, cover a wide range of territory, raid crops and sometimes kill people.²⁴

This perspective recognizes the unpopularity of conservation areas and programs in Africa, which follow a long history of exclusion, dislocation, and political domination.²⁵ The gazetted wildlife parks where most elephants live do not seem to benefit or serve most Africans, catering largely to Western tastes and desires to see 'wild' animals in Africa.²⁶ Africans who live among elephants have to endure all the costs associated with their existence and yield none of the benefits.²⁷

Following these assumptions is the notion that only economic incentives can drive conservation norm development. Such incentives include hunting licenses and the sale of ivory and other elephant products resulting from natural mortality. Essentially, when communities reap the benefits of ivory sales they will

²³ Stephen R. Kellert, "Social and Perceptual Factors in Endangered Species Management," *The Journal of Wildlife Management*. 49, no. 2 (1985).

²⁴ Bandow.

²⁵ Daniel Brockington and James Igoe, "Eviction for Conservation: A Global Overview," *Conservation and Society* 4, no. 3 (2006).

²⁶ William H. Kaempfer and Anton D. Lowenberg, "The Ivory Bandwagon: International Transmission of Interest –Group Politics," *The Independent Review: A Journal of Political Economy* IV, no. 2 (1999).

²⁷²⁷ Kirsten Conrad, "Trade Bans: A Perfect Storm for Poaching?," *Tropical Conservation Science* 5, no. 3 (2012). Kaempfer and Lowenberg, "The Ivory Bandwagon: International Transmission of Interest –Group Politics."

preserve habitats and be more willing to endure human-elephant conflict.²⁸ The argument asserts utilization is the best path to conservation and preservation.²⁹ A related argument asserts that by removing ivory as a revenue generator states are less able to afford expensive conservation and protection of wildlife.³⁰ From this perspective CITES essentially constrains the ability of states to control their resources.³¹

African attitudes towards wildlife and conservation have clearly been influenced by their experiences and interactions with colonialism, race, and central government bureaucracies and are caught up in contests over political power.³² Those living in wildlife areas have often lost political and symbolic power through the process of park construction through expropriation.³³ Under such conditions parks and wild areas can become sites of resistance to governance policy, with poaching as an act of defiance.³⁴ Poaching protected and symbolic

²⁸ Peter Stoett, "To Trade or Not to Trade? The African Elephant and Cites," *International Journal* 52, no. 4 (1997).

²⁹ Kaempfer and Lowenberg, "The Ivory Bandwagon: International Transmission of Interest – Group Politics." Bandow. Lorraine Elizabeth Moore, "Conservation Heroes Versus Environmental Villains: Perceiving Elephants in Caprivi, Namibia," *Human Ecology* 38 (2010).

³⁰ Micheal 't Sas-Rolfes, "Elephants, Rhinos, and the Economics of the Illegal Trade," *Pachyderm* 24 (1997). Andrew M. Lemieux and Ronald V. Clarke, "The International Ban on Ivory Sales and Its Effects on Elephant Poaching in Africa," *British Journal of Criminology* 49 (2009).

³¹ Conrad, "Trade Bans: A Perfect Storm for Poaching?." Robin Brown, *Blood Ivory: The Massacre of the African Elephant* (Chalford: The History Press, 2008).

³² George Holmes, "Review: Protection, Politics, and Protest: Understanding Resistance to Conservation," *Conservation and Society* 5, no. 2 (2007). Duffy, *Killing for Conservation: Wildlife Policy in Zimbabwe*.

³³ Brockington and Igoe, "Eviction for Conservation: A Global Overview."

³⁴ Moore, "Conservation Heroes Versus Environmental Villains: Perceiving Elephants in Caprivi, Namibia." Acheson, "Institutional Failure in Resource Management." Van Song, "Wildlife Trading in Vietnam- Situation, Causes, and Solutions." David Western, *In the Dust of Kilimanjaro* (Washington, DC: Island Press, 1997). Holmes, "Review: Protection, Politics, and Protest: Understanding Resistance to Conservation."

species such as elephants sends a powerful message to decision-makers and elites directly challenging the coercive power of the state.³⁵

However many Africans deeply value wildlife, elephants in particular, as a key component of their social, physical, and emotional landscape. Even individuals living in communities heavily impacted by human elephant conflict express varied perspectives including “anger, fear, awe, respect, and admiration” for wild elephants.³⁶ Some clans identify with elephants closely, referring to them as mythical brothers and sisters.³⁷ In Namibia, for example, elephants are revered almost as a “first people,” having occupied the land before people arrived, and thus deserving of respect.³⁸ Elephants are also understood as a symbol of the economic value of wildlife tourism. In fact Africans are beginning to view the problem of poaching as a government failure to stem corruption and as a waste of a valuable resource and as a crime against their national patrimonies.³⁹ African newspapers, journalists, and activists have become active in calling out political leaders for their lack of commitment and ineffectiveness in curbing poaching, viewing the problem as a threat to national security and to the economy.

³⁵ Duffy, *Killing for Conservation: Wildlife Policy in Zimbabwe*. Holmes, "Review: Protection, Politics, and Protest: Understanding Resistance to Conservation."

³⁶ Moore, "Conservation Heroes Versus Environmental Villains: Perceiving Elephants in Caprivi, Namibia."

³⁷ Evgeny Lebedev, "Elephant Campaign: The Samburu Know the Land and Its Animals Better Than Anyone: 'The Elephant Is an Elder to Us – It Is Taboo to Hurt One'," *The Independent*, 1 February 2014, <http://www.independent.co.uk/voices/comment/elephant-campaign-the-samburu-know-the-land-and-its-animals-better-than-anyone-the-elephant-is-an-elder-to-us-it-is-taboo-to-hurt-one-9101124.html>.

³⁸ Moore, "Conservation Heroes Versus Environmental Villains: Perceiving Elephants in Caprivi, Namibia." Mary Ann Pentz, Richard Bonnie, and Donald R. Shopland, "Integrating Supply and Demand Reduction Strategies for Drug Abuse Prevention," *American Behavioral Scientist* 39 (1996).

³⁹ Paula Kahumbu, "Africa: Conservation Dilemmas," in *Destination Magazine* (2014), <http://allafrica.com/stories/201401311198.html?viewall=1>.

Debates over land and resource use, including wildlife, relate to varying social, cultural political, and economic understandings of legitimate and non-legitimate uses of wildlife, the role of the state, and the “the power of scientific and other understandings of nature.”⁴⁰ At all levels the control of resources, including wildlife, relates to the control of political power.⁴¹

The way Africans’ attitudes towards wildlife are described may better reflect the agenda of conservation authorities who shape locals as either wildlife villains or heroes to fit particular narratives. By flattening the complexity of feelings expressed about wildlife, authorities can remove African voices from the conversation and, importantly, from the decision making process. Shaping African norms as not valuing wildlife allow for conservation interests to ignore local input and disregard the negative impacts that conservation sometimes metes out on the people closest to natural areas.⁴² It should also be noted that attitudes are not immutable but can shift in short periods of time when underlying human/wildlife conflicts find resolution or other changes in governance systems occur.

⁴⁰ William M. Adams and Jon Hutton, "Review: People, Parks and Poverty: Political Ecology and Biodiversity Conservation," *Conservation and Society* 5, no. 2 (2007).

⁴¹ Duffy, *Killing for Conservation: Wildlife Policy in Zimbabwe*.

⁴² Daniel Brockington, "Community Conservation, Inequality and Injustice: Myths of Power in Protected Area Management," *Conservation and Society* 2, no. 2 (2004). Moore, "Conservation Heroes Versus Environmental Villains: Perceiving Elephants in Caprivi, Namibia."

State Level Explanations

Weak Governance

Other scholars focus on state level factors related to weak governance as primary factors associated with states' inability to protect wildlife.⁴³ Weak governance refers to a lack of capacity within law enforcement, the judiciary, park security and corruption.

In most elephant range states laws protecting animals are weak, un-enforced, or non-existent. Poaching is not always identified as a crime, and trafficking is considered a low level offence. In most cases individuals not actually caught in the act of poaching or in possession of banned products are typically released because law enforcement lacks the training to charge criminals on other offences such as weapons charges or trespassing. When levied, fines for poaching are typically very low, and jail times is minimal, providing little disincentive to poachers and traffickers who consider these among the costs of doing business.⁴⁴ Charges rarely reflect the seriousness of crimes.⁴⁵

Weak judicial capacity impacts the ability of courts to sentence even repeat offenders to significant time in jail. In Kenya a study of wildlife criminals revealed only 8 out of 224 persons found guilty of crimes served time in jail. The rest, found guilty, paid small fines and were released. Smugglers caught at

⁴³ Dalberg, "Fighting Illicit Wildlife Trafficking: A Consultation with Governments," (2012).

⁴⁴ Van Song, "Wildlife Trading in Vietnam- Situation, Causes, and Solutions."

⁴⁵ Paula Kahumbu et al., "Scoping Study on the Prosecution of Wildlife Related Crimes in Kenyan Courts," (2014), <http://baraza.wildlifedirect.org/files/2014/01/WILDLIFEDIRECT-court-study-26.1.14.pdf>.

airports face small fines before being let go.⁴⁶ Police rarely investigate even when they uncover large shipments of ivory, allowing perpetrators at the highest levels to continue their activities. Cross-border or international investigations occur infrequently, and even more rarely result in criminal convictions. Government officials, when implicated, are seldom prosecuted, further undermining government legitimacy.⁴⁷

Corruption amongst state officials creates the conditions necessary for organized criminals to exploit wildlife.⁴⁸ First, corruption undermines the creation and application of laws designed to protect wildlife, eroding the capacity of law enforcement and the judiciary.⁴⁹ Traffickers- who may even be members of the political class- provide funds to politicians to influence the drafting of laws and regulations.⁵⁰ Second, politicians are known to utilize wildlife as a sort of payment within patronage networks.⁵¹ High-level government officials, even at times those charged with protecting wildlife, sponsor hunts and traffic wildlife, undermining cohesive efforts to monitor and interdict the illegal wildlife trade. Corruption trickles down to lower levels. Police in some areas are complicit, as are rangers, soldiers, and other government employees.⁵² Third, when apprehended, poachers and traffickers bribe law enforcement and the judiciary to

⁴⁶ Martin Fletcher, "One Man's War on the Ivory Poachers of Gabon," in *The Telegraph* (2014), <http://www.telegraph.co.uk/news/worldnews/africaandindianocean/gabon/10606732/One-mans-war-on-the-ivory-poachers-of-Gabon.html>.

⁴⁷ Marc Shaw, "Organised Crime in Post Apartheid South Africa: Occasional Paper No. 28," in *Institute for Security Studies* 28(1998), http://www.issafrica.org/uploads/Paper_28.pdf.

⁴⁸ Gastrow.

⁴⁹ Ibid. Duffy, *Killing for Conservation: Wildlife Policy in Zimbabwe*.

⁵⁰ John Wagely, *Transnational Organized Crime: Principal Threats and Us Responses*, (Library of Congress 2006), <http://www.fas.org/sgp/crs/natsec/RL33335.pdf>.

⁵¹ Shaw and Reitano, "The Evolution of Organized Crime in Africa: Towards a New Response."

⁵² Fletcher.

avoid prosecution, heavy sentencing, or large fines. Poaching and other extractive and exploitive practices, when orchestrated from powerful arms of the state, can be difficult to eliminate, in particular from a weaker arm of government.⁵³

Most African states lack the capacity to properly protect their parks and other wild areas, lowering the risks associated with poaching and trafficking, due to the high costs, low levels of funding, and lack of political will. Across Africa rangers lack equipment, weapons, manpower, and investigative skills and tools, impacting the effectiveness of enforcement measures.⁵⁴ Small ranger forces are expected to provide protection for large and remote areas, often lacking basic necessities to conduct patrols. Rangers may receive little or no training, leaving them ill equipped to battle organized poaching gangs often comprised of terrorists, insurgents, and non-state armed militias. Poachers, on the other hand, typically have access to resources not available to rangers including satellite phones, GPS, motorcycles and other vehicles, high caliber weapon, night vision goggles, silencers, and funds.⁵⁵

Blaming African range states for not being able to control poaching without acknowledging the strength and organizational capacity of transnational criminal syndicates; the developing but still nascent conservation norms; the pressure from the international community to liberalize and privatize economies and

⁵³ Duffy, *Killing for Conservation: Wildlife Policy in Zimbabwe*.

⁵⁴ Richard Damania and Erwin Bulte, "The Economics of Wildlife Farming and Endangered Species Conservation," *Ecological Economics* 62, no. 3-4 (2007). Van Song, "Wildlife Trading in Vietnam- Situation, Causes, and Solutions."

⁵⁵ Valerie Hamilton, "Rangers in Kenya Are Outgunned in the New Poaching Arms Race," Public Radio International 8 October 2013 <http://www.pri.org/stories/2013-10-08/rangers-kenya-are-outgunned-new-poaching-arms-race>.

increase foreign trade; and the massive increase in demand for ivory in Asia shifts all of the burden for regulating the trade onto states. Elephant range states, most of which suffer from high levels of poverty and lack capacity in key sectors are generally the least able to withstand the pressures of the global market or to act across jurisdictional scales. More importantly, this perspective oversimplifies the problem and reduces it to one of enforcement only, forestalling policy measures at other levels and scales which might impact demand but fall outside of an enforcement strategy such as demand reduction programs or wildlife education initiatives.

Wildlife and Land Management

Similarly, the role of the management and coordination of wildlife resources and land management in elephant range states are often cited as important factors in states' (in)ability to protect ecological systems.

Dozens of organizations and governance systems, both state and non-state, can be active in one geographical or issue area in a country, but their philosophies, relations with local communities, projects, capacity and commitments may vary, or can conflict, leading to confusion and a waste of resources.⁵⁶ With a multitude of interests and actors at work at each level of governance determining what agency is responsible for protecting resources is difficult.⁵⁷ Under such "polycentric governance" power emanates from multiple

⁵⁶ Duffy, *Killing for Conservation: Wildlife Policy in Zimbabwe*.

⁵⁷ Van Song, "Wildlife Trading in Vietnam- Situation, Causes, and Solutions."

sources, not simply the state, obfuscating lines of authority and responsibility.⁵⁸ Lack of clear chains of authority, and a multiplication of authority, surrounding wildlife resources creates gaps in enforcement and mismatches between local needs and international norms.

Moreover, wildlife management in Africa is typically centralized, top-down, and lacking in local input. Governments establish rules and regulations for wildlife management without clearly understanding local variations in wildlife populations or use patterns and often without regard for local input, setting the scene for intense competition for control of resources.⁵⁹ States rely heavily on the advice of science at the expense of input from local communities, which can lead to unintended, and negative, consequences in regards to resource management.⁶⁰ Aggregating data at the national level, and then applying that data in the form of policies in local communities, can miss isolated problems associated with human/wildlife conflict, place undue burdens on other resources shared between wildlife and people such as water and timber, and fail to address local economic concerns related to the opportunity costs of wildlife management. Solution sets may not match with problem sets at all scales of the ecological and social system.

For example in Gabon the President, Ali Bongo, set aside 10% of the country for national parks, without consulting indigenous communities living in or near parks. In the past decade Gabon has lost over 60% of its forest elephants

⁵⁸ Jan Aart Scholte, *Globalization: A Critical Introduction*, 2nd ed. (New York: Palgrave Macmillan, 2005). p. 186

⁵⁹ Acheson, "Institutional Failure in Resource Management."

⁶⁰ Ibid. Holmes, "Review: Protection, Politics, and Protest: Understanding Resistance to Conservation."

to poaching, in part facilitated by local Baka Pygmy trackers who lead hunters to elephant populations, and act as porters to carry out large volumes of ivory.⁶¹ On the other hand, local communities often lack the resources necessary to manage resources, leaving them vulnerable to over-exploitation either by the community or non-community users. Successful local controls generally exhibit certain attributes including a low cost monitoring system; moderate rates of change in use of the resource; dense social networks must exist within communities to lower transaction costs; outsiders can be excluded; and users must support the monitoring and enforcement rules.⁶² In an era of globalization, mass migration, and networked transnational crime, it may be unrealistic to expect local institutions to be able to adequately address the challenges of managing a globally important resource from an organizational standpoint, in particular when macro and microeconomic factors impact their choices to exploit resources in order to survive.⁶³

The increased roles of intergovernmental organizations, non-governmental organizations, and private conservation organizations in making and enforcing wildlife policy in many African states further complicate questions of authority and control of wildlife resources and land use policies.⁶⁴ IGOs, NGOs and private conservation enterprises may or may not coordinate adequately with

⁶¹ Gettleman, "In Gabon, Lure of Ivory Is Hard for Many to Resist."

⁶² Thomas Dietz, Elinor Ostrom, and Paul Stern, "The Struggle for the Commons," *Science* 302 (2003).

⁶³ M. Christina Espinosa, "What Has Globalization to Do with Wildlife Use in the Remote Amazon? Exploring the Links between Macroeconomic Changes, Markets, and Community Entitlements," *Journal of Developing Societies* 24 (2008).

⁶⁴ Holmes, "Review: Protection, Politics, and Protest: Understanding Resistance to Conservation."

all stakeholders, across communities, or at various levels.⁶⁵ These organizations wield tremendous power to act as an interface between state departments, international donors, local stakeholders, wildlife professionals, and media interests to impose their vision of what “nature” should look like, and how it should be accessed by people. A few large NGOs dominate the field of conservation, projecting their largely western based ideals of wilderness landscapes on non-western societies.⁶⁶

Together these organizations control billions of conservation dollars worldwide, enabling them to craft and promote specific conservation narratives that correspond to their own agendas, crafted in board rooms thousands of miles away, with little or no input from local communities.⁶⁷ NGOs often treat wildlife and resources as though they exist in a vacuum at the expense of social, economic, and land rights issues, promoting initiatives not locally relevant in an African context. Practitioners in NGO field offices have a propensity to institute policies they personally advocate, without regard for local concerns or higher level policy.⁶⁸ NGOs may tie aid to the adoption of certain policies, placing pressure on communities to adopt policies that they did not have a hand in crafting.⁶⁹ This can exacerbate conflicts between communities and the central government, and between communities and wildlife.⁷⁰

⁶⁵ Ibid.

⁶⁶ Daniel Brockington and James Igoe, "Eviction for Conservation: A Global Overview," *ibid.* 4, no. 3 (2006).

⁶⁷ James Ferguson, *Global Shadows: Africa in the Neoliberal World Order* (Durham N.C.: Duke University Press, 2006).

⁶⁸ Brockington and Igoe, "Eviction for Conservation: A Global Overview."

⁶⁹ Duffy, *Killing for Conservation: Wildlife Policy in Zimbabwe*.

⁷⁰ Ibid. Holmes, "Review: Protection, Politics, and Protest: Understanding Resistance to Conservation."

Understanding the complexity of the governance systems involved in social ecological systems, how they interact across levels and scales, and how they react to exogenous factors such as transnational crime, CITES decisions to allow sales, and the development of infrastructure into previously unopened territory impact the ability of systems to adapt to pattern changes. A perspective focused primarily on management practices assumes that a problem as complex as transnational criminal poaching has a single, rational, scientific solution by which one management system, applied across the board, can address poaching when in reality the problems arise from different conditions at different locations and may be impacted by a variety of normative, political, management, and economic pressures.

Transnational Explanations

CITES Trade Ban

Economic arguments both for and against the international trade in ivory focus on the failures of CITES' regulatory schemes to manage ivory as a primary cause of the rise in poaching over the last decade. CITES is an international agreement between governments adopted in 1973 in order to regulate the trade in wild animals and plants, and to ensure that legal trade does not threaten the survival of species. CITES divides species into three sections, or Appendices, depending on their need for protection. Appendix I species are those which cannot be legally traded internationally because they are threatened by

extinction. Species on Appendix II and III are considered not necessarily threatened with extinction but international trade must be regulated to ensure their continued survival.⁷¹

In 1989 CITES banned the international trade in elephant products and moved African elephants to Appendix I. In the 1990s and 2000s several countries with large elephant herds have petitioned CITES to 'down list' their populations from Appendix I to Appendix II to begin trading ivory and other elephant parts. In 1997 Botswana, Namibia, and Zimbabwe were successful and their elephants were moved to Appendix II, allowing limited monitored trade to occur in the form of monitored auctions. CITES sanctioned two 'one-off sales' of ivory, auctioned to a limited number of approved states.⁷² Despite the massive increase in elephant poaching after 2009 CITES has not recognized the sales as a factor.

Those in favor of ending the ban and allowing the regulated sale of legal ivory argue that CITES current policies of limited "one-off sales" and the sales ban negatively impact wild elephant populations by restricting legal supplies of ivory while demand remains unchanged. Pro-sales advocates argue demand reduction is not possible in a timely fashion, leading to poaching in the absence of a steady legal supply of ivory.⁷³ By restricting supply the ban increases the value to a level attractive to transnational criminal organizations.⁷⁴ According to this perspective the only way to save elephants is to legalize sales and flood the market with legal stockpiled ivory. This would stabilize the market, lower prices,

⁷¹ CITES, "How Cites Works," <http://www.cites.org/eng/disc/how.php>.

⁷² Ibid.

⁷³ Bandow.

⁷⁴ Sas-Rolfes, "Elephants, Rhinos, and the Economics of the Illegal Trade."

squeeze out illegal sellers, and slow poaching rates.⁷⁵ Pro-traders argue that with adequate controls and increased enforcement, sales of ivory could generate funds for investment back into communities and conservation programs where it could be used to preserve elephant habitats and relieve pressure on human communities forced to co-exist with wild animals. For pro-traders the ban is not only failing, it is actually making the problem of poaching worse by removing important sources of revenue from communities, disincentivizing conservation by restricting the use of elephant products, and creating space and economic value for criminal poaching syndicates to enter the market.⁷⁶

At the same time pro-ban advocates argue the CITES ivory sales are to blame for the rise in demand and subsequent rise in prices for ivory. They argue the ivory auctions created an incentive for organized crime to exploit the high prices of ivory, seriously impacting poaching levels.⁷⁷ They assert a legal market cannot be regulated in the current environment of weak law enforcement, corruption, uneven laws and penalties across range states, and the entrenched nature of TOC.⁷⁸ The stocks of “legal” ivory in existence cannot meet the high demand and massive market for ivory and would not effectively shut out an illegal market, meaning poachers would continue to profit from illegal ivory.⁷⁹ State authorities cannot easily or cheaply determine where ivory originated, making

⁷⁵ Ibid. Kaempfer and Lowenberg, "The Ivory Bandwagon: International Transmission of Interest – Group Politics." Bandow.

⁷⁶ Conrad, "Trade Bans: A Perfect Storm for Poaching?."

⁷⁷ "Blood Ivory- Exposing the Myth of a Regulated Market," Environmental Investigation Agency, 2012 <http://www.eia-international.org/blood-ivory-exposing-the-myth-of-a-regulated-market>. Anita Gossman, "Tusks and Trinkets: An Overview of Illicit Ivory Trafficking in Africa," *African Security Review* 18, no. 4 (2009). "Fighting Illicit Wildlife Trafficking: A Consultation with Governments," (2012).

⁷⁸ Samuel Wasser et al., "Elephants, Ivory, and Trade," *Science* 327 (2010).

⁷⁹ Ibid.

determinations of legality impossible while increasing opportunities for criminals to launder illegal ivory.⁸⁰

Pro-ban advocates dispute the notion that a stable market in ivory would emerge with the advent of a legal trade, noting the market for ivory exploded after the CITES auctions.⁸¹ Moreover, the sales did not have the intended effect of depressing process.⁸² Prices for raw ivory tripled since 2009.⁸³ The pro-ban advocates further argue the creation of a legal market through the CITES sale sends mixed messages to consumers that elephant populations have recovered and are no longer under threat, increasing consumers' willingness and desire to purchase ivory.⁸⁴ When uncompromised the ban created a moral deterrent for those wishing to purchase ivory and helped to inhibit the ability to launder illegal ivory internationally.⁸⁵ Lastly, those in favour of keeping trade bans in place note the ban worked slowing the rate of poaching and reducing demand for elephant products during the period before the 'one-off' sales were allowed.⁸⁶ They argue closure of legal markets would slow demand for illegal ivory and is the only way to unequivocally protect elephants.⁸⁷

⁸⁰ Lemieux and Clarke, "The International Ban on Ivory Sales and Its Effects on Elephant Poaching in Africa." Virginia Morell, "Elephants Take Center Ring at Cites," *Science* 316, no. 5832 (2007). "Blood Ivory- Exposing the Myth of a Regulated Market".

⁸¹ Stoett, "To Trade or Not to Trade? The African Elephant and Cites."

⁸² Andrew P. Dobson and Joyce H. Poole, "Ivory: Why the Ban Must Stay!," *Conservation Biology* 6, no. 1 (1992).

⁸³ Frank Pope, "China's Illegal Ivory Trade Escalating out of Control," in *National Geographic: A Voice for Elephants* (12 December 2014), <http://voices.nationalgeographic.com/2014/12/12/chinas-illegal-ivory-trade-escalating-out-of-control/>.

⁸⁴ Samuel Wasser et al., "Elephants, Ivory, and Trade." Dobson and Poole, "Ivory: Why the Ban Must Stay!."

⁸⁵ Rasmus Heltberg, "Impact of the Ivory Trade Ban on Poaching Incentives: A Numerical Example," *Ecological Economics* 36 (2000).

⁸⁶ Dobson and Poole, "Ivory: Why the Ban Must Stay!."

⁸⁷ "Blood Ivory- Exposing the Myth of a Regulated Market".

While the decision by CITES to allow the “one-off” ivory actions clearly impacted the incentive of transnational criminal organizations to take advantage of exponentially increasing demand, arguments that look at the decisions of CITES as the primary driver for poaching increases fail to take into account the variation in implementation of the regime across states; state level political decision-making processes and political competition surrounding wildlife policies; corruption; the impact of globalization processes on illicit business; government policies in consumption countries, the evolving norms and expectations on development; the speed and flexibility of TOC, and other national and local level dynamics that impact wildlife conservation. The regime can impact state policies, reinforce norms either for sales or for a ban, and serve as an arena for debate about conservation and regulation, but is not a stand-in for national and local governance of resources or the primary driver of resource user behavior.

International-Level Explanations

Neo-Liberal Trade Policies

Similarly the role of neoliberalism on wildlife policies and conservation is viewed from competing perspectives. Neoliberalism is credited on the one hand with creating incentives to preserve wildlife and habitats, and on the other hand with exploiting and commodifying nature.

Wildlife agendas in African states are increasingly developed within the context of economic development, driven both by a general global trends toward

neo-liberal conservation and by the adoption in many African states of neo-liberal economic and trade policies at the state level. Liberalism asserts that state structures restrict individual freedoms and get 'in the way' of business. As such, removing restrictions on trade, lessening regulatory burdens, and allowing the 'invisible hand' of the market to act improves peoples' lives and increases prosperity across the board. Neo-liberalism impacts social-ecological systems through the promotion of principles of privatization, commodification, deregulation, reliance on market principles, including the laws of supply and demand, which are based on normative assumptions promoting "continuous growth and continuous 'progress' towards some state of 'development.'"⁸⁸

Neoliberal assumptions stress liberal principles can solve a host of conservation problems by infusing cash into under-resourced conservation programs, increasing democracy and participation through deregulation, helping inculcate norms of conservation, protecting and enshrining property rights, promoting development through eco-tourism, and promoting green business and environmental consciousness.⁸⁹ The basic argument follows that when wildlife pays for itself communities will conserve and protect it to ensure future profits. By privatizing some aspects of utilization, whether through harvesting animals or through photo-tourism, wildlife is expected to gain relevancy. Conservation

⁸⁸ Moises Naim, *Illicit : How Smugglers, Traffickers, and Copycats Are Hijacking the Global Economy* (New York: Doubleday, 2005). Bram Büscher and Webster Whande, "Whims of the Winds of Time? Emerging Trends in Biodiversity Conservation and Protected Area Management," *Conservation and Society* 5, no. 1 (2007). p. 28

⁸⁹ Kathleen McAfee, "Selling Nature to Save It? Biodiversity and the Rise of Green Developmentalism," *Environment and planning D: Society and Space* 17, no. 2 (1999). Büscher and Whande, "Whims of the Winds of Time? Emerging Trends in Biodiversity Conservation and Protected Area Management." Daniel Brockington and James Igoe, "Eviction for Conservation: A Global Overview," *ibid.* 4, no. 3 (2006).

schemes now almost always include some plan for community development including the provision of education and health care services and employment in the tourism or services sector.

While community development programs have become recognized as intrinsic to preservation and conservation, all of the implications of the adoption of neo-liberal principles within the realm of sustainability are not fully understood. It is unclear if tying wildlife preservation to economic development creates wildlife conservation norms. Studies indicate that while people may value the economic benefits of wildlife, their attitude towards the intrinsic value of wildlife may not change.⁹⁰ Scholars raise several concerns related to the impacts marketization, commoditization, and commercialization have on the long-term resilience of ecosystems. McAfee argues that neoliberalism encourages viewing nature as a warehouse or store of products waiting to be commoditized and commercialized, creating conditions under which “value” is based on exchange earnings at the expense of intrinsic value.⁹¹ The marketability of a species becomes one of the most important factors in its survivability.⁹² Consumers subsequently emerge as key players in the success, or failure, of environmental policies.⁹³

Others note market mechanisms are not well understood in the wildlife trade, in particular where supply is severely restricted and demand is high. As

⁹⁰ Bram Büscher and Webster Whande, "Whims of the Winds of Time? Emerging Trends in Biodiversity Conservation and Protected Area Management," *ibid.* 5, no. 1 (2007).

⁹¹ Rhishja Cota-Larson, "South Africa's Rhino Horn Trade Scheme Trowned by Economics," 2014 <http://annamiticus.com/2014/02/26/south-africas-rhino-horn-trade-scheme-trowned-by-economics/>.

⁹² Büscher and Whande, "Whims of the Winds of Time? Emerging Trends in Biodiversity Conservation and Protected Area Management."

⁹³ Liverman, "Who Governs, at What Scale and at What Price? Geography, Environmental Governance, and the Commodification of Nature."

noted above, some species are in greater demand when their rarity and price increase, driving over-exploitation.⁹⁴ Some consumers do not want a product substituted from a legal market. Additionally, parallel markets could spur demand from consumers not interested in an illegal market, thus expanding the market and increasing competition for wildlife products. Another concern relates to questions about how firms in the wildlife trade act, and what incentives or disincentives they respond to. Many firms engaged in the wildlife trade are classified as multiproduct firms that enjoy economies of scale and are able to absorb profit losses and price wars, meaning they may stay in a trade even if the price of a product drops.⁹⁵

The emphasis on market expansion and demand creation under neo-liberalism raises other key concerns. Liberalism assumes competition, which then requires diversification and competitive marketing, which leads to further commodification to increase demand. Sales ultimately create demand and drive more sales, placing unsustainable pressure on wildlife populations. Expanding commodification pushes accumulative tendencies.⁹⁶

Further, neo-liberalism's constant drive for expansion and development in the broader economy push states to open up previously isolated areas for development, rather than incentivizing conservation. Not only does this decrease the areas developed to conservation, but it places parks and other protected

⁹⁴ Cota-Larson, "South Africa's Rhino Horn Trade Scheme Trounced by Economics".

⁹⁵ Alejandro Nadal and Francisco Aguayo, "China's Illegal Ivory Trade Escalating out of Control," in *National Geographic: A Voice for Elephants* (22 October 2014), <http://voices.nationalgeographic.com/2014/10/22/legalizing-ivory-trade-taking-to-new-heights-a-dangerous-policy-proposal/>.

⁹⁶ Scholte, *Globalization: A Critical Introduction*.

areas in peril by increasing accessibility. By developing infrastructure in remote areas states facilitate the exploitation of wildlife and forests, literally building the roads necessary to commercially exploit and extract resources.⁹⁷ Under liberalization developing states, and the local communities within them, increasingly must choose between preservation and development.

Those wary of the role of neoliberalism in conservation further note the privatization of national parks and wildlife resources in Africa. Increasingly African governments call on private entities to run parks, creating what some see as a new type of dispossession as organizations run parks and other “national” monuments as businesses.⁹⁸ Nature becomes another vehicle for ‘sponsorship’ of corporate conservation organization and businesses.⁹⁹ And as noted above, local communities may be left out of important decision-making processes as a result.

Further negative implications flow from neo-liberalism’s impact on government policies and the allocation of scarce resources in poor countries, impacting states’ abilities to react to increased illicit wildlife trafficking. Liberalization has pushed states away from welfare policies through structural adjustment programs that emphasize the free market, balanced budgets, and privatization. States contract the delivery of social services and welfare services to NGOs. Under pressure to compete in the global market place states starve

⁹⁷ TRAFFIC, "What's Driving the Wildlife Trade? A Review of Expert Opinion on Economic and Social Drivers of the Wildlife Trade and Trade Control Efforts in Cambodia, Indonesia, Lao Pdr and Vietnam," in *East Asia and Pacific Region Sustainable Development Discussion Papers* (2008).

⁹⁸ Büscher and Whande, "Whims of the Winds of Time? Emerging Trends in Biodiversity Conservation and Protected Area Management."

⁹⁹ Ferguson, *Global Shadows: Africa in the Neoliberal World Order*.

themselves of taxes, tariffs, and other revenues in order to attract business and goods. The Global North has far more leeway to assume costs associated with globalization and competition than the South.¹⁰⁰ Neo-liberal policies which emphasize a reduction of the role of the state in economic development, liberalization of markets, open trade, fewer protections for agricultural products, typically the main source of income in developing states, leaves rural peoples dependent on agriculture and pastoral livelihoods few protections from the market. With less valuable products to sell they may intensify their use of wild plants and animals to supplement, or replace, incomes formerly generated through the state.¹⁰¹

The adoption of neoliberalism also impacts the movement of peoples and goods. The exponential growth of Asian, in particular Chinese, communities on the continent has been directly tied to increases in poaching.¹⁰² With less restrictions on migration more and more Chinese nationals are flooding into Africa, connecting the primary end-user market directly with wildlife resources. As Williams notes, Chinese traders are often involved in a range of commercial activities, which can provide a cover for illicit trades.¹⁰³ These groups can be difficult to penetrate based on language and cultural barriers, and are reinforced by kinship and ethnic ties, which insulate them and provide a defense against the surrounding communities. According to Gastrow, Chinese nationals were behind

¹⁰⁰ Scholte, *Globalization: A Critical Introduction*.

¹⁰¹ Espinosa, "What Has Globalization to Do with Wildlife Use in the Remote Amazon? Exploring the Links between Macroeconomic Changes, Markets, and Community Entitlements." "Fighting Illicit Wildlife Trafficking: A Consultation with Governments".

¹⁰² Gastrow. Nzau Musau, "Eu Asked to Help Fight Poaching," *The Star*, 21 February 2014, <http://www.the-star.co.ke/news/article-156187/eu-asked-fight-poaching>.

¹⁰³ Williams, "Crime, Illicit Markets, and Money Laundering."

all of the smuggling rings uncovered in South Africa, Zimbabwe, Zambia, Malawi, Tanzania, and Kenya in recent years.¹⁰⁴

Regardless of its merits, liberalism is now embedded in the conservation landscape. Liberalism impacts the development of both conservation and consumption norms; creates expectations for development and advancement; impacts which animals and ecosystems are viewed as valuable and are thus preserved; and how that value should be expressed. How its impacts are mitigated, or not, depends on several factors including pre-existing norms for conservation, the history of resource use in a community, the existence of other non-wildlife based income generators, land-use policies and their fitness and sustainability; and availability for development of virgin territories and resources, among others.

Conclusion

Managing local wildlife resources in a global context involves negotiating social, cultural, and regulatory regimes at every level and scale. Three important findings emerge from the literature review. First, decisions on resource management lie at multiple levels and scales, involving individual, community, national and international decision makers. Wildlife resource systems are tied into the global political economy. Second, it is not possible to diagnose problems across cases without examining factors at all levels and scales. An explanation reliant only on the rise in demand ignores the role of weak conservation norms,

¹⁰⁴ Gastrow.

or the politics of land management and its impacts on communities' perceptions of wildlife, for example. Further, such a reductive perspective ignores a key dynamic- how the interactions between levels and scales, and the resource users and governance systems embedded in them, operate together to determine certain outcomes. Creating an understanding of interactions allows for an evaluation of points of vulnerability to help explain why resource usage changes in an area. Third, there is not one single set of solutions or single correct articulation of a system's challenges, which applies at every scale or level.¹⁰⁵ Systems evolve through interactions between and among actors and institutions "and resources constrained and shaped by a given social-ecological setting."¹⁰⁶ They are heterogeneous by nature, and are unlikely to respond uniformly to the application of generic policies.

In order to accommodate the multitude of variables identified above, and to incorporate multiple levels of analysis, this paper will adopt Ostrom's social-ecological systems framework.¹⁰⁷ An approach that recognizes the multi-scalar and multi-level nature of resource management issues is key to avoid inappropriate or poorly tailored resource management strategies.¹⁰⁸

¹⁰⁵ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

¹⁰⁶ Schlüter et al., "Application of the Ses Framework for Model-Based Analysis of the Dynamics of Social-Ecological Systems." p. 36 and Holling and Gunderson, "Resilience and Adaptive Cycles."

¹⁰⁷ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

¹⁰⁸ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World." "Elephant: Significance-Economic," http://www.nnf.org.na/RARESPECIES/InfoSys/elephant/significance/La_Economic.htm.

CHAPTER 3

RESEARCH DESIGN

Social-Ecological Systems

Increasingly ecologists and social scientists recognize what the literature review above clearly illustrates- no ecosystem exists outside of human influence and interference. Humans are an integral part of all ecological systems, even remote areas with little human settlement or human wildlife interactions.¹ Human and ecological realms are intimately interconnected and “co-evolving across spatial and temporal scales” within *social-ecological systems* (SESs).² SESs are not human systems embedded in ecological systems, or ecological systems embedded in human systems, but are distinct systems which involve interrelationships and reciprocal impacts for both human and ecological systems.³ Natural resource management by its nature involves human claims on resources blurring the delineations between social and ecological systems.⁴ An SES is a “coherent system of biophysical and social factors that regularly interact in a...sustained manner” that includes social and ecological subsystems in

¹ C. Redman, M. J. Grove, and L. Kuby, "Integrating Social Science into the Long Term Ecological Research (Lter) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change," *Ecosystems* 7, no. 2 (2004). Carl Folke, "Social–Ecological Systems and Adaptive Governance of the Commons," *Ecology and Economics* 22 (2007).

² "Social–Ecological Systems and Adaptive Governance of the Commons," 14.

³ B. H. Walker, L. H. Gunderson, A. P. Kinzig, C. Folke, S. R. Carpenter, and L. Schultz, "A Handful of Heuristics and Some Propositions for Understanding Resilience in Social-Ecological Systems," *Ecology and Society* 11, no. 3 (2006). Redman, Grove, and Kuby, "Integrating Social Science into the Long Term Ecological Research (Lter) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change."

⁴ "Integrating Social Science into the Long Term Ecological Research (Lter) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change." Berkes, Colding, and Folke, "Introduction."

mutual interaction.⁵ SESs involve resource systems, resource units, resource users, governance systems, their interactions and the resulting outcomes.⁶

Elephants exist in complex SESs comprised of political, economic, geographic, and normative features shifting over time and across space. Everywhere they roam elephants are subject to human actions, and human decision making, by licit and illicit actors including illegal killing, sanctioned hunts and culling operations, human encroachment on habitats, fence building, road construction, and monitoring efforts. Human societies living near elephant communities are in turn impacted by the invasion of transnational criminal elements, the commodification of resources, expectations related to the imposition of international conservation norms, economic losses or gains tied to wildlife management decisions, contests with animals over scarce land and water resources, and competing political goals of development and conservation.

As a resource with global relevance, elephants can be conceptualized as a global common pool resources (CPR) existing in a global SES. CPRs are “natural or human-made facilities (or stocks) that generate flows of usable resource units over time.”⁷ Two characteristics further define CPRs, which relate to elephant SESs. First, creating institutions that can exclude potential users is difficult and expensive. The lack of property rights means all users will likely overexploit because there is no incentive to conserve. Second, the resources

⁵ Redman, Grove, and Kuby, "Integrating Social Science into the Long Term Ecological Research (Lter) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change." Gilberto Gallopin, "Linkages between Vulnerability, Resilience, and Adaptive Capacity," *Global Environmental Change* 16, no. 3 (2006).

⁶ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

⁷ "Neither Market nor State: Governance of Common-Pool Resources in the Twenty-First Century" (paper presented at the Workshop in political theory and policy analysis, Indiana University, 1994), 2.

harvested by one user are no longer available to other users.⁸ Resource users must agree to limits on their use.

As a global CPR, African elephants are managed at local, national, and international levels through tiered and essentially hierarchical regulatory regimes, connected through laws, rules, regulations, and norms, both formally and informally. At each level, governance systems interact with social and economic systems and react to social and economic processes.⁹ Actions and decisions taken at one level clearly impact population stability across scales, and governance and protective measures at multiple levels, setting the conditions for sustainable, or unsustainable, utilization. As a CPR under ineffective protection regimes, elephants are subject to overexploitation and ultimately, depletion, by the potential billions of users within the global common pool.

Framework for Analysis

While dozens of frameworks exist to examine social-ecological systems and their interactions, this study adopts Ostrom's social-ecological systems framework (SESF).¹⁰ The framework allows researchers to answer three broad questions:¹¹

What patterns of interactions and outcomes such as overuse, conflict, collapse, stability, and increasing returns, are likely to result from using a

⁸ Ibid.

⁹ C.S. Holling, "Understanding the Complexity of Economic, Ecological, and Social Systems," *Ecosystems* 4 (2001).

¹⁰ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

¹¹ Ibid., 15182.

particular set of rules for the governance, ownership, and use of a resource system and specific resource units in a specific technological, socioeconomic, and political environment?

What is the likely endogenous development of different governance arrangements, use patterns, and outcomes with or without external financial inducements or imposed rules?

How robust and sustainable is a particular configuration of users, resource system, resource units, and governance system to external and internal disturbances?

Per the SESF the social system is made up of resource users and governance systems. The ecological system is considered from an anthropocentric perspective as a resource system to be used by humans, such as water, fisheries, and forests, and the resource units that make up the system, such as quantity of water, number of trees, and numbers of fish.¹² In this instance a resource system includes national parks and open areas, wildlife corridors, and other elephant range habitat; resource units are African elephants; users in the system include consumptive and non-consumptive users (poachers, traffickers, tourists, NGOs, etc); and governance system(s) include local, national, international regimes, non-governmental organizations and private conservation enterprises as nested tiers.¹³

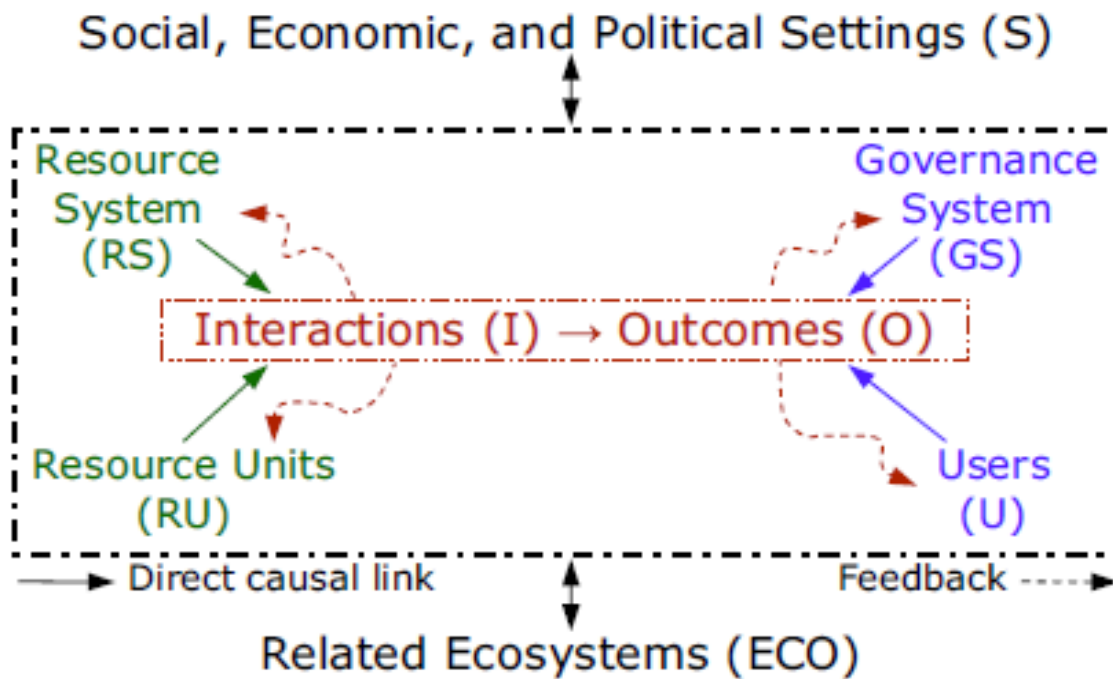
The SESF provides a methodology to untangle the relationships between resources users and governance systems by identifying variables at the sub and

¹² C. R. Binder, J. Hinkel, P. W. G. Bots, and C. Pahl-Wostl, "Comparison of Frameworks for Analyzing Social-Ecological Systems," *Ecology and Society* 18, no. 4 (2013).

¹³ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

supra levels to discover potential interactions and outcomes, which impact the resiliency of a system. This approach can accommodate the location of an elephant SES at multiple levels as a local resource, state resource and a global common pool resource.

Figure 1. A Multi-Tiered Framework for Examining Social Ecological Systems



Source: Ostrom (2007)

Applying an SES framework, as illustrated in Figure 1, allows researchers, and ultimately decision-makers, to understand how the characteristics of system “jointly affect and are indirectly affected by interactions and resulting outcomes

achieved at a particular time and place.”¹⁴ The framework further provides the opportunity to explicate how these characteristics, or attributes, may affect and be affected by the larger, and smaller, socioeconomic, political, ecological, and cultural milieu in which they exist.¹⁵ An examination of the social and ecological processes and the linkages between them can answer questions about how an SES developed into its present state, how it operates currently, and how it might change in the future.¹⁶ The SESF allows analysis to deal with complex problems through integrative, interdisciplinary approach.¹⁷

Five key structural features recommend Ostrom’s SESF to examine the rise in poaching in Africa.¹⁸ First, corresponding to the hierarchical nature of SESs, the framework examines variables as nested or tiered. The SESF identifies first level ‘generic’ variables that can then be unpacked to understand how lower-tier variables affect outcomes.¹⁹ Unpacking and comparing variables allows for the identification of variables and combinations of variables that either contribute to the development of a sustainable system, or to resource collapse.²⁰ The first tier includes the four primary variables listed above: the resource system, the resource units generated by the system, the users of the system, and the governance system. Second and third tier variables can be abundant and are flexible, depending on the systems to be examined, encompassing a range of

¹⁴ Liverman, "Who Governs, at What Scale and at What Price? Geography, Environmental Governance, and the Commodification of Nature."

¹⁵ Ibid.

¹⁶ Redman, Grove, and Kuby, "Integrating Social Science into the Long Term Ecological Research (Lter) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change."

¹⁷ Binder, "Comparison of Frameworks for Analyzing Social-Ecological Systems."

¹⁸ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

¹⁹ Binder, "Comparison of Frameworks for Analyzing Social-Ecological Systems."

²⁰ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

factors which might illuminate important points of interactions and outcomes. Ostrom's original SESF identified thirty nested second tier variables for assessment and examination, including many of the variables noted in the literature review above.²¹ How far a researcher needs to delve to explain changes in an SES depends on the specific policy or research question they are trying to answer. The large number of variables identified and examined contributes to a more nuanced understanding for the relevant factors that impact an SES's resilience, adaptability, and transformability, discussed below.

Imagined as nested, each tier of an SES embeds in both a smaller and larger socio-economic, political, and ecological systems. This is particularly important for the study of ivory poaching. The concepts of nested tiers of variables allows for research to adjust focus to evaluate how factors at levels above and below the research focus impact or explain outcomes. Policies aimed at reducing demand, for example, may have a greater impact on elephant survival as a species than local programs to alleviate human-elephant conflicts, though such programs may have a greater impact on local animals.²²

Second, the SESF acknowledges the multi-scalar and cross level dynamics that impact SESs, allowing SESs to be understood as complex systems. Complex systems exhibit "characteristics not seen in simple systems such as nonlinearly, uncertainty, emergence, scale, and self-organization."²³ Wildlife SESs, existing at multiple levels, across large geographic scales, reliant on

²¹ Ibid.

²² Janssen, Anderies, and Ostrom, "Robustness of Social-Ecological Systems to Spatial and Temporal Variability."

²³ Berkes, Colding, and Folke, "Introduction," 5.

decision-making from multiple levels of authority, influenced by a range of constantly changing normative and economic imperatives, and subject to aggregated decisions of disconnected resource users, exemplify the characteristics of a complex system. More complex and more connected systems are more vulnerable to costly errors. Young et al points out in large and complex systems such as global wildlife SESs when network connections are random “an increase in the complexity of the network leads almost inevitably to the destabilization of the system as a whole.”²⁴ In complex systems multiple subsystems can be observed and should be analyzed simultaneously at multiple scales and across levels.²⁵

Third, the SESF clearly identifies key interactions impacting systems, as illustrated in Figure 2. These interactions involve (I1) harvesting levels of diverse users, (I2) information sharing among users, (I2) deliberation processes, (I4) conflict among users, (I5) investment activities, and (I6) lobbying activities. Interactions are the “specific activities that mediate between the social and ecological elements of the broader SES.”²⁶ The SESF delineates outcomes as (O1) social performance measures, (O2) ecological performance measures, and (O3) externalities to the SES. The patterns of interactions and outcomes of

²⁴ Oran R. Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research," *Global Environmental Change* 16 (2006): 309.

²⁵ Berkes, Colding, and Folke, "Introduction."

²⁶ Redman, Grove, and Kuby, "Integrating Social Science into the Long Term Ecological Research (Lter) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change," 164.

different users, and historical patterns of interactions and outcomes, help explain why an SES exists in a particular state.²⁷

Fourth, through its emphasis on interactions and outcomes, the SESF illustrates how social and ecological systems impact each other, not simply how human decision-making impacts resources, capturing the reciprocal relationships between human/environment systems. An analysis of interactions includes how the depletion or other impacts of exploitation may affect communities economically, socially, politically, and normatively.²⁸

Lastly, the SESF treats globalization as “a phenomena whose elements can be disaggregated and analyzed one at a time.”²⁹ Globalization is a “transplanetary process or set of processes involving increasing liquidity and the growing multidirectional flows of people, objects, places, and information as well as the structures they encounter and create that are barriers to, or expedite, those flows.”³⁰ These multidirectional “flows” intensified under globalization, making the distant proximate.³¹ Globalization impacts all aspects of wildlife conservation in Africa through increased global flows of information, people, ideas, and money.

²⁷ Elinor Ostrom, "Twenty Years into the Future: The Challenge of the Common Pool Resources," in *Environment: Science and Policy for Sustainable Development* 50, no. 4 (2008), <http://www.environmentmagazine.org/Archives/Back%20Issues/September-October%202008/Brundtland-intro.html>. Redman, Grove, and Kuby, "Integrating Social Science into the Long Term Ecological Research (Lter) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change." "Cross-level" interactions refer to interactions among levels within a scale, whereas "cross-scale" means interactions across different scales, for example, between spatial domains and jurisdictions (see Fig. 2).

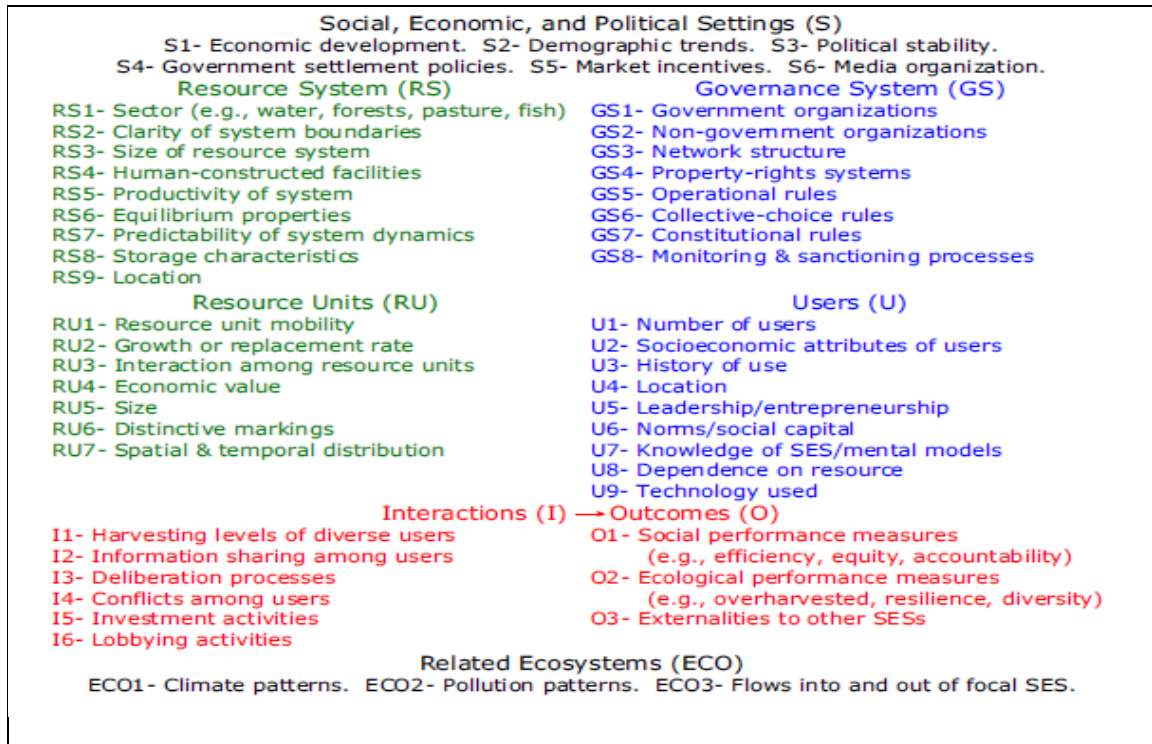
²⁸ Binder, "Comparison of Frameworks for Analyzing Social-Ecological Systems."

²⁹ Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research," 305.

³⁰ George Ritzer, *Globalization: A Basic Text* (Oxford: Wiley-Blackwell, 2009), 2.

³¹ *Ibid.*, 3. James N. Rosenau, *Distant Proximities: Dynamics Beyond Globalization* (Princeton: Princeton University Press, 2003).

Figure 2. Second-Tier Variables in Framework for Analyzing an SES



Source: Ostrom (2007)

Globalization is a central feature of SESs because of impacts on the resilience and vulnerability of systems.³² It is intimately linked to neo-liberalism, capitalism, and commodification. Global products, global markets and marketing, and global communications have facilitated the “expansion and intensification of commodification” and allowed for exponential growth in wildlife transactions.³³ Four aspects of globalization impact SESs; connectedness, speed, scale, and diversity. Each aspect operates on two planes, both positively and negatively. Greater connectedness in all the arenas of globalization- goods, people, finance, ideology, and information- both increases opportunities for exploitation of species

³² Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research."

³³ Scholte, *Globalization: A Critical Introduction*, 165.

and for the increased integration of large SESs. While larger more closely linked systems may be able to absorb changes with greater resilience overall, they can also spread disturbances widely and quickly through the system. Similarly, increased speed of interactions can allow for quicker response times to threats, but also allows for faster depletion of resources. This is particularly true in the wildlife sector. At the hyper-speed of globalization communities may not recognize the threats to resources until too late. Relatedly, the scale and impacts of interactions shifts under globalization. Local resource managers and users are linked to international institutions and the market without the protection of intermediary layers of management or control as “political, social, and economic processes and activities” stretch across local, national, regional, and global scales.³⁴ Individual and aggregated human actions can now impact global resources and can quickly deplete stocks as has been clearly seen in the recent explosion of ivory sales.³⁵ Globalization’s impacts on diversity relate to the tendency to eschew local knowledge in national and international level decision making, and in biodiversity, negatively impacting the resilience of resources systems.³⁶

Hypotheses

Based on the factors, which impact wildlife resources listed in the literature review, and based on the variables noted in the SESF, this study will examine

³⁴ Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research," 310.

³⁵ Folke, "Social–Ecological Systems and Adaptive Governance of the Commons."

³⁶ Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research."

the hypothesis listed below. Particular attention has been paid to the necessity to include cross scale and cross level interactions into the hypotheses in order to more accurately capture the complex nature of threats to social ecological systems:

Hypothesis 1: In SESs where more modes of authority exist, systems will be less resilient to perturbations.

Hypothesis 2: The imposition of rules from external organs increase the resilience of an SES.

Hypothesis 3: When local communities engage in the management of wildlife industries the SES will be more resilient to disturbances than in cases where communities engage in the management of wildlife industries.

Hypothesis 4: Resource stress or collapse is more likely to occur in states with weak wildlife crime legislation and/or poor enforcement of wildlife crime legislation than in states with strong wildlife crime legislation and effective enforcement.

Hypothesis 5: In areas where human wildlife conflict is not effectively addressed the SES will be less resilient than in areas where human wildlife crime is effectively addressed.

Hypothesis 6: An SES characterized by fragmentation is less resilient to disturbances than a contiguous SES.

Per Walker et al. this study will measure SES outcomes through the lens of resilience, adaptability, and transformability.³⁷

Measuring SES Outcomes

Interactions and outcomes between tiers of nested variables within an SES can be viewed through the lens of resilience, adaptability, and transformability (RAT). RAT specifically focuses on measuring vulnerability within a resource system and how an SES copes with change.³⁸ The RAT provides researchers a tool to evaluate interactions and outcomes across the nested tiers of an SES which could ultimately lead to the formulation of relevant and effective policy.

The RAT considers past regimes, current practices, and successes or failures in impacting outcomes to increase resilience, and the likelihood of shifting into a new stable state, to measure and assess a system's resilience, adaptability, or potential for controlled or uncontrolled transformation. While resilience theory stresses the utility of analyzing "slow" variables which push systems to shift, this study introduces fast variables, such as shifting global demand for wildlife

³⁷ B. Walker, C. S. Holling, S. R. Carpenter, and A. Kinzig, "Resilience, Adaptability and Transformability in Social–Ecological Systems," *Ecology and Society* 9, no. 2 (2004).

³⁸ Gallopin, "Linkages between Vulnerability, Resilience, and Adaptive Capacity."

products and the resulting exponentially increasing poaching rates, to highlight the speed of regime shifts.³⁹

RAT analysis locates the current state of an SES within the context of its stability domain in order to determine whether an SES has been irrevocably altered. The stability domain reflects the state of a system in the absence of major perturbation. Disturbance and perturbation involve major spikes or pressures on a system beyond the normal range of vulnerability. Systems might be vulnerable to certain disturbances and not to others.⁴⁰ Once certain thresholds are crossed in any SES structure, functions, and feedback loops change and undergo a “regime shift” or “flip,” to a new stability domain.⁴¹ These shifts may be unpredictable and occur very quickly, and “may be reversible, irreversible, or effectively irreversible, i.e., not reversible on time scales of interest to society.”⁴² Shifts can result from either human caused or natural phenomena.⁴³ Such shifts may be occurring in SESs in Gabon, Tanzania, DRC, Ethiopia, Chad, the Ivory Coast, Mozambique, Malawi, and Mali, among others, which have lost the majority of their elephants.

Resilience is the amount of disturbance or perturbation a system can absorb without shifting into a new stability domain.⁴⁴ More resilient systems can

³⁹ S. R. Carpenter et al., "From Metaphor to Measurement: Resilience of What to What?," *Ecosystems* 4 (2001).

⁴⁰ Gallopin, "Linkages between Vulnerability, Resilience, and Adaptive Capacity."

⁴¹ Berkes, Colding, and Folke, "Introduction."

⁴² Walker, "A Handful of Heuristics and Some Propositions for Understanding Resilience in Social-Ecological Systems." Berkes, Colding, and Folke, "Introduction."

⁴³ Carl Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability," *Ecology and Society* 15, no. 4 (2010).

⁴⁴ Walker, "A Handful of Heuristics and Some Propositions for Understanding Resilience in Social-Ecological Systems." Berkes, Colding, and Folke, "Introduction." Walker, "Resilience, Adaptability and Transformability in Social–Ecological Systems."

absorb larger shocks and withstand more disturbance. A resilient system can change and adapt while remaining within critical thresholds.⁴⁵ Long term SESs may have developed a tolerance to certain disturbances and can continue to absorb disturbances if they do not change too much over time.⁴⁶ Whether a system is considered resilient by policymakers and community members impacts resources use decisions and can be highly contested. As resilience declines, it takes progressively smaller disturbances to push the system a new stability domain, in which its structure and function are substantially different.⁴⁷ Interactions between endogenous and exogenous processes contribute to explanations of the resilience, or lack of resilience, of systems.⁴⁸

Adaptability is about the human management of resilience in the system. Adaptability refers to the ability of an SES to learn; adjust to both internal and external factors and processes; and to continue developing within the stability domain.⁴⁹ Because humans dominate SESs their actions both in terms of management and utilization determine the adaptability of a system and directly impact whether a system becomes an “undesirable” system, or not.⁵⁰

The ability of the social systems to manage resilience, or adapt to perturbations, depends on the ability of governance systems and resource users

⁴⁵ Carl Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability," *ibid.* 15, no. 4 (2010).

⁴⁶ Janssen, Anderies, and Ostrom, "Robustness of Social-Ecological Systems to Spatial and Temporal Variability."

⁴⁷ M. Scheffer and S. R. Carpenter, "Catastrophic Regime Shifts in Ecosystems: Linking Theory to Observation," *Trends in Ecology and Evolution* 12 (2003). B. H. Walker, N. Abel, J. M. Anderies, and P. Ryan, "Resilience, Adaptability, and Transformability in the Goulburn-Broken Catchment, Australia," *Ecology and Society* 14, no. 1 (2009).

⁴⁸ Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research."

⁴⁹ Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability."

⁵⁰ B. Walker, C. S. Holling, S. R. Carpenter, and A. Kinzig, "Resilience, Adaptability and Transformability in Social–Ecological Systems," *ibid.* 9, no. 2 (2004).

to control the trajectory of an ecological system, “change the ‘topology’ of the stability landscape, or change the processes in response to dynamics at other scales.”⁵¹ Different aspects of the social system and specific features of groups might constrain adaptability including norms, identity, and core values, or enhance or undermine SES resilience.⁵² SESs are vulnerable to changes in governance strategies, in particular those related to changes in socio-economic processes.⁵³ As the speed of global interactions increases the ability of SESs (i.e. their human managers) to adapt quickly is paramount.

Transformability refers to the capacity to create a new system.⁵⁴ Transformational change involves shifts in norms and values, patterns of interactions among actors, patterns of use and consumption, and shifts in organizational and political relationships. When stability domains shift beyond thresholds and ‘new’ systems emerge one may consider the SES to have ‘transformed,’ impacting both societies and environments.⁵⁵ It is important to note transformation does not have to be uncontrolled and may not necessarily be undesirable. Transformation may be required when shocks threaten to alter a system beyond repair.⁵⁶

⁵¹ Ibid., 5.

⁵² Carl Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability," *ibid.* 15, no. 4 (2010).

⁵³ Janssen, Anderies, and Ostrom, "Robustness of Social-Ecological Systems to Spatial and Temporal Variability."

⁵⁴ Gunderson L. H., C. S. Holling, and S. S. Light, *Barriers and Bridges to the Renewal of Ecosystems and Institutions*. (New York: Columbia University Press, 1995). Walker, "A Handful of Heuristics and Some Propositions for Understanding Resilience in Social-Ecological Systems."

⁵⁵ Walker, "Resilience, Adaptability, and Transformability in the Goulburn-Broken Catchment, Australia."

⁵⁶ B. Walker, C. S. Holling, S. R. Carpenter, and A. Kinzig, "Resilience, Adaptability and Transformability in Social–Ecological Systems," *ibid.* 9, no. 2 (2004).

Alternative stable states are possible.⁵⁷ In fact adaptation and transformation- social change- are required to maintain ecosystem resilience.⁵⁸ As Walker et al. argues there are many examples of SESs becoming locked in and unable to transform until it is too late (salinized agricultural systems; dams, floodplains and flood control; forest fire suppression at ever larger scales).⁵⁹ For example in Kenya in the 1980s the ability of SESs to transform and adopt new governance structures likely saved valuable wildlife populations, and contributed to a new relationship between community members, wildlife, and the national government.⁶⁰

Measurements and Variables

Resource Units

Following Ostrom's SESF, this paper defines elephants as a resource unit. Relevant variables include mobility growth and replacement rate, interaction among resource units, economic value, and spatial and temporal distribution.

Two types of elephant live in Africa, the savannah elephant (*Loxodonta Africana*) and the forest elephant (*Loxodonta cyclotis*). Larger savannah elephants can be found in 37 African countries with savannah zone habitats. Forest elephants, smaller and with round ears, live in the rainforests of West and

⁵⁷ Carl Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability," *ibid.* 15, no. 4 (2010).

⁵⁸ *Ibid.*

⁵⁹ B. Walker, C. S. Holling, S. R. Carpenter, and A. Kinzig, "Resilience, Adaptability and Transformability in Social–Ecological Systems," *ibid.* 9, no. 2 (2004).

⁶⁰ Western, *In the Dust of Kilimanjaro*.

⁵⁹ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

Central Africa. Elephant home ranges cross international borders and can stretch to nearly 6,000 square miles depending on habitat type.

Biological attributes of the elephant (as a resource unit) can affect the stability of the SES. Population dynamics occur over decades, not months or years. It may take elephant populations that suffer from overexploitation fifty years to recover, while others spiral into extirpation.⁶¹ The slow replenishment of elephants, which reach sexual maturity no earlier than ten years, and have calves only once every four or five years after, expose populations to perturbation and disruption. In a healthy SES, elephants can reproduce into their sixties, with healthy populations growing at a natural rate of around 7-8% per year. Populations under stress from environmental factors or poaching breed less frequently. In the absence of major disturbances elephants can live to be over seventy years of age in the wild.

Depending on its size an elephant can eat between 220-400 lbs of vegetation per day, and drink over 200 liters of water per day. Their dietary and migration habits can place elephants in direct competition with human populations and create what has become known as human-elephant conflict (HEC). Adult bull elephants can grow up to eleven feet high at the shoulder and weigh over eight tons. Female elephants are smaller and lighter, with an average height of over 8.5 feet and weight just over 7,000 pounds.

In some countries, such as Botswana and South Africa, elephants are abundant, possibly to the point of over-crowding and resource system depletion. In other areas such as Rwanda and Ivory Coast populations are tiny, isolated,

⁶¹ Dobson and Poole, "Ivory: Why the Ban Must Stay!."

and not biologically significant. Small pockets of elephants continue to exist in West Africa, though populations have little or no chance of interacting. Populations of elephants in the Republic of Congo, Cameroon, Gabon, Central African Republic, and the Democratic Republic of Congo are increasingly isolated in dense forests and difficult to reach areas.

Population surveys of forest elephants indicate a decline in populations between 50-62% in the past decade. In the DRC 95% of forest have almost no elephants.⁶² Savannah populations are similarly fragmented and isolated. Some limited interactions occur between elephants in Kenya and Tanzania and between Tanzania and Mozambique.

The economic value of elephants has shifted over the years as a result of international regimes and shifting norms over appropriate usage. Elephants were historically valued for their tusks, hide, hair, and meat. Tusks do not regenerate and can only be harvested by killing the animals. Ivory values range depending on which part of the value chain one examines. At kill sites ivory can fetch as little as \$40 per tusk, or be bartered for a few cheap trade goods like salt.⁶³ Middlemen receive higher prices, around 7-120\$ per lb. Tusks weigh on average 12 lbs each, though they can be much larger, and as populations decrease, much smaller. In end markets a large carved tusk can sell for more than \$50,000.

Economic value within the licit market generally relates to wildlife tourism, largely photo safaris, as well as limited hunting and trophy tourism, and limited

⁶² Ronald Orenstein, *Ivory, Horn, and Blood: Behind the Elephant and Rhinoceros Poaching Crisis* (Buffalo: Firefly Books, 2013).

⁶³ Gettleman, "In Gabon, Lure of Ivory Is Hard for Many to Resist."

legally sanctioned international ivory sales. The direct and indirect economic contribution associated with wildlife viewing in developing countries are an important source of revenue generation.

Resource Systems

The resource system(s) elephants interact in exist across Sub-Saharan Africa. The relevant variables to analyze are the sector, system boundaries, system size, human-constructed facilities, productivity, equilibrium properties, predictability of system dynamics, and location.

Savannah elephants range throughout Eastern and Southern Africa. Human encroachment and poaching have severely restricted the range of elephants, however the land in many areas could easily support more dense populations, in particular in forested areas of Central Africa and in the savannahs of east Africa. Difficult to coral, elephants move between national parks and private areas, and between states, depending on the availability of water, food, and security. Historically elephants migrated long distances, though in the past two centuries those migration patterns have been severely disrupted by poaching and habitat loss.

Users

Resource use includes consumptive and non-consumptive use. Consumptive users may be poachers or traffickers ranging across an array of communities from wildlife professionals, to impoverished indigenous peoples acting in the illicit realm, as well as end-market users who purchase and consume wildlife products both in legal and illegal markets. Key resource users and focus of this project are transnational criminal organizations.⁶⁴ Consumptive use also includes sanctioned sales of wildlife products between states. Non-consumptive users of wildlife include photo-tourists, as well as safari operators and local peoples in tourism related industries from handi-craft sellers to hoteliers, as well as NGOs and others who utilize animals as symbols for awareness and fund raising efforts. Other users are those living and working within a resource system, in particular African communities on the outskirts of parks, in wildlife management areas, and other protected areas, whose livelihoods are inextricably linked to wildlife either through community based conservation programs or as community members forced to endure the challenges of living near wildlife. In many ways, these resource users are the most crucial to the success or failure of wildlife management plans. At the national level, considering the significance of wildlife to GDPs across Africa, all citizens in a given country can be considered resource users as recipients of public services made possible through tourism receipts. And as Young, et al., point out, in a global resource system in which resources are considered to be a

⁶⁴ Ibid.

part of a common pool, the scope of resource users expands globally.⁶⁵ Relevant variables impacting outcomes and interactions for all of these resource users include the number of users, socio-economic attributes of users, history of use, location of users, leadership and entrepreneurship, norms/social capital, knowledge of SES, dependence on resource, and technology used.

Governance Systems

Governance systems as nested and decomposable can refer to local, national, and international systems of management, governmental and non-governmental. Relevant second-tier governance variables include government organizations and non-government organizations, network structure, property rights systems, operational rules, collective choice rules, constitutional rules and monitoring and sanctioning processes. The proliferation of governance types increases contests and competition over control of wildlife management policies, goals, and mechanisms for implementation.

As a resource elephant populations are managed at the national level through wildlife and land management departments, national legislation, and local and national enforcement mechanisms. States determine whether and how legal domestic markets for endangered species operate. At the international level the trade in elephants and elephant parts is managed through CITES.

⁶⁵ Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research," 309.

Why Case Studies

This paper adopts a case study methodology as the analytic frame best suited to explicating the potential causal factors degrading or improving SES resilience. The paper will examine poaching rates in Kenya, Tanzania, and Botswana, focusing on the parks with the largest elephant populations; Tsavo, the Selous Game Reserve, and the Okavango Delta, respectively. SESs in Tanzania and Kenya appear to be shifting into new stability domains as elephants are poached out, while the challenge to SESs in Botswana appear to relate to an over-abundance of elephants. The case studies include both temporal and spatial scales associated with poaching rates to determine the relative resilience of SESs.

To control for background conditions these cases were selected in part on the basis of their general similarities related to colonialism, wildlife and land management policies, and early attitudes towards wildlife. All three countries experienced a long association with Great Britain as protectorates and colonies of the empire. Botswana and Kenya came under Britain's sphere of influence after the 1885 'scramble for Africa.' Tanzania became a British protectorate after World War I and the transfer of German colonies to UN and subsequently British control. Colonial leadership initiated the park system in each country, later expanded under post-Independence governments.

The case study countries all initially adopted wildlife policies based on a model of state control of wildlife resources, later adjusted to include, (at least

nominally), community based natural resources management plans of one sort or another. These plans not only expand community involvement in wildlife management but also incorporate market based neo-liberal mechanisms to conservation. Similar plans were introduced in most other African countries during the same time frame.⁶⁶

All three states are heavily dependent on foreign tourism which accounts for a high percentage of GDP and significant employment figures. In Kenya the total contribution of travel and tourism dollars, generated primarily through wildlife tourism, accounts for 12.4% of GDP.⁶⁷ Similar figures are reported for both Botswana and Tanzania.⁶⁸ Most travelers to Africa visit for wildlife viewing.⁶⁹ Each of the three states discussed receive between one and two million visitors per year. All three states devote a large amount of their national territory to wildlife conservation and management. Tanzania protects the most land, over 40% of its total area. Botswana sets aside a third of its territory as parks or wildlife management areas. Kenya, a more populous state, sets aside just under 8% of its land in parks.

While Botswana, Kenya, and Tanzania share multiple similarities, the states diverge in key areas. Neither Kenya nor Tanzania has been able to effectively protect its wildlife. Several of the factors blamed correspond to those

⁶⁶ David Hulme and Marshall Murphree, "Communities, Wildlife, and the 'New' Conservation in Africa," *Journal of International Development* 11 (1999).

⁶⁷ "United Republic of Tanzania - Travel & Tourism Total Contribution to Gdp - Travel & Tourism Total Contribution to Gdp - % Share," Knoema, 2014 <http://knoema.com/atlas/United-Republic-of-Tanzania/topics/Tourism/Travel-and-Tourism-Total-Contribution-to-GDP/Total-Contribution-to-GDP-percent-share>.

⁶⁸ Ibid. "Strengthening Tourism Statistics and Formulation of an Experimental Tsa- 2005/2006," (Botswana: UNDP, Government of Botswana, UNWTO, 2007).

⁶⁹ "Wildlife Tracking and Poaching: Botswana," The Law Library of Congress, 2014 <http://www.loc.gov/law/help/wildlife-poaching/botswana.php>.

listed in the literature review above. These include corruption, mismanagement of the wildlife sector, uncoordinated land use policy, conflicting priorities for the use of land (agriculture vice conservation), lack of involvement of local communities, unsustainable growth, the influx of foreign workers, development in wildlife areas, and habitat destruction.⁷⁰ In both states enforcement is considered very weak, with corruption, ineffective and weak laws, poor investigative capacity, and lack of political will to dismantle poaching rings hamper efforts to stop illegal killings of elephants.

Weak government responses in both countries hampered or completely forestalled efforts to stop the onslaught. During the last poaching crisis in the 1980s Tanzania get poaching under control. However, during the current crisis the government in Tanzania has been slow to recognize the poaching crisis and to acknowledge the extent of the destruction of the country's wildlife.⁷¹ The primary initiative launched to fight the poachers, Operation Tokemeza, was halted by the government over alleged abuses before any ivory kingpins could be charged. In the midst of the poaching epidemic in 2010 Tanzania proposed down listing its elephant population to allow sales of ivory. They did not withdraw the proposal until 2012.⁷² In 2014 Tanzania agreed to not lobby CITES for at

⁷⁰ "The Wildlife Sector with Emphasis on Tourist Hunting," Tanzania Development Partners Group, 2014
<http://www.tanzaniagateway.org/docs/wildlifesectorwithemphasisontouristhunting.pdf>. Tanzania National resources Forum 2008 And "Wildlife for Communities in Tanzania: Taking Stock of Governance of Wildlife by Communities", (paper presented at the Wildlife for Communities in Tanzania: Taking Stock of Governance of Wildlife by Communities Conference, Dar es Salaam, 2011). Kahumbu et al.

⁷¹ "Tanzania Elephant Protection Society (Teps)," 2014.

⁷² Cites and the Ivory Trade: Fact Sheet 03, (Nairobi, Kenya: Kenya Elephant Forum, 2010), http://wildlifedirect.org/files/2009/11/KEF_Fact_Sheet_03c.pdf.

least the next ten years to honor the moratorium on sales. Their stockpile is worth over 50million dollars.⁷³

Kenya's record on battling poaching is similarly mixed. Kenyan wildlife suffered high losses in the last great poaching epidemic of the 1970s and 1980s when the country 90% of its elephant population was slaughtered from 1973-1987. The population stood at less than 10,000 in 1989 when Kenya led the campaign to ban the international sale of ivory.⁷⁴ Conservationists in Kenya advocated within Kenya and the international community to raise awareness about poaching and to pressure governments to support the CITES ban, achieving dramatic results.⁷⁵ Despite past successes, however, Kenya currently denies a poaching crisis exists within its borders, skewing the numbers of poached elephants down to obfuscate the linkages between official corruption and poaching. Recent changes in wildlife laws have yet to yield significant results. Their record on prosecuting wildlife cases is abysmal. Poachers, even when declared guilty, often go free. In what may be an effort to shift blame, both countries cite cross-border groups as driving poaching. In Kenya Somali terrorists are associated with poaching while in Tanzania the blame is often placed on Burundian or Mozambiquan criminals.

Tanzania and Kenya were both placed on the CITES "Gang of Eight" list in 2013 for their failure to control poaching or trafficking in their territory. Tanzania is

⁷³ Elaine Larson, "Tanzania's Ivory Stockpile: What Should Be Done with Stockpiles of Captured Elephant Ivory?," National Geographic, 2013

http://education.nationalgeographic.com/education/media/tanzanias-ivory-stockpile/?ar_a=1.

⁷⁴ Judie Kaberia, "Kenya Has Reason to Worry over Poaching - Expert," in *AllAfrica* (2014), <http://allafrica.com/stories/201404021186.html>.

⁷⁵ Western, *In the Dust of Kilimanjaro*.

both a major transit point and supplier of ivory to illegal markets. Estimates suggest that as much as one third of the ivory seized in Asia comes from or through Tanzania. Tanzania loses between 10,000-11,000 elephants per year to poachers, if not more. Poachers operate within park boundaries, and to an even greater extent outside of parks in communities.⁷⁶ Kenya may have lost one quarter of its elephant (and rhinoceros) population since 2009, contradicting official statistics which claim the loss of only 302 elephants in 2013.⁷⁷ The actual number may be ten times higher.⁷⁸ Kenya is a major exporter of ivory from Central and East Africa, most of which exists through Mombasa. The Kenyan Wildlife Service reports the current population of elephants to be around 38,000, while the African Elephant Database reports around 26,000 as of 2012.⁷⁹ Both estimates are likely over-estimates.

The trajectory for Botswana, on the other hand, has been one of recovery from past near decimation. Heavily hunted during the colonial period by the Boers and other settlers, Botswana had fewer than 8,000 elephants in 1960.⁸⁰ Today the country is considered a conservation success story with Africa's largest and most secure elephant herd of over 130,000 elephants. Ironically Botswana's elephant population is thought to have increased as a result of

⁷⁶ Sarah Morrison, "Times Is Running out Fast for Tanzania's Elephant Herds," in *The Independent* (7 January 2014), <http://www.independent.co.uk/voices/comment/time-is-running-out-fast-for-tanzanias-elephant-herds-9044727.html>.

⁷⁷ Judie Kaberia, "There's No Poaching Crisis in Kenya – Kws," in *Capital News* (2014), <http://www.capitalfm.co.ke/news/2014/03/theres-no-poaching-crisis-in-kenya-kws/>. "Kenya Has Reason to Worry over Poaching - Expert".

⁷⁸ "Poachers Kill Famous Kenyan Elephant Amid Warnings of 'Industrial Scale' Smuggling," in *Sabahi* (2014), http://sabahionline.com/en_GB/articles/hoa/articles/newsbriefs/2014/06/16/newsbrief-03.

⁷⁹ "Elephant Database," The International Union for the Conservation of Nature, 2014 http://www.elephantdatabase.org/preview_report/2013_africa/Loxodonta_africana/2012/Africa.

⁸⁰ "Namibia Nature Foundation," <http://www.nnf.org.na>.

conflict related poaching in neighboring states. High levels of poaching in Zambia and Zimbabwe and insecurity Namibia and Angola push so-called 'refugee' elephants into Botswana.⁸¹

The Botswana government considers poaching a threat to their national security and treat it as such, training special units of the country's defense force to combat poachers. They invoke stiff penalties and fines and have a good record of convicting those engaged in illegal hunts. The low levels of poaching that occur in Botswana are blamed on cross-border poachers coordinating with locals to kill wildlife.⁸² Botswana, a longtime supporter of international ivory sales, altered its position on sales in 2013 and no longer supports the ivory trade.

Other significant differences between Kenya, Tanzania, and Botswana exist which could be important to explain difference in SES resilience including the relative strength or weakness of their economies, levels of corruption, security factors, and demographics. Each of the countries, following African states generally, moved from state-led economies to a private sector led development in the 1990s and 2000s. However Kenya and Tanzania remain low income countries with high poverty rates while Botswana, on the other hand, is considered an upper middle income country.⁸³ The perception of corruption varies greatly between the states, with Kenya and Tanzania viewed as highly corrupt by their citizens. While Botswana is considered the least corrupt county in

⁸¹ Elephants Without Borders, "Homepage," <http://www.elephantswithoutborders.org/>.

⁸² "Poaching in the Chobe," in *Kutlwano* 51, no. 4 (2013), <http://www.kutlwano.gov.bw/kut-article-detail.php?aid=426&mid=40>.

⁸³ Data collected from World Bank, "Low Income Data," 2014 <http://data.worldbank.org/income-level/LIC>.

Africa.⁸⁴ Kenya, bordering Somalia, has faced numerous terrorist attacks by Somalis and homegrown terrorists in addition to mass violence associated with the 2008 elections. Somali terrorists are widely believed to be responsible for at least some of the elephant poaching in Kenya over the last decade.⁸⁵ While Tanzania and Botswana both border countries, which have experienced war in the last two decades threats to wildlife are not generally associated with terrorists or other large, organized non-state armed groups.

Demographically Kenya and Tanzania are heterogeneous societies with multiple competing ethnic/tribal/racial and linguistic identities. Strong political leadership in post-Independence Tanzania created a national identity and national unity through the adoption of Kiswahili, nationalist curriculum in school, and local empowerment, depoliticizing ethnicity and tribe.⁸⁶ Tanzania subsequently developed a strong “Tanzanian” national identity, and has experienced little interethnic conflict.⁸⁷ Kenyans, on the other hand, continues to relate more closely to their ethnic groups through the use of local languages, lack of universal curriculum, reliance on appointed ethnic/tribal leaders, ‘tribalist’ political leadership, and the allocation of public goods along ethnic lines (favoring ethnic Kikuyus over other groups). As a result Kenya continues to experience

⁸⁴ "Corruption Perceptions Index 2013," Transparency International, 2013
http://www.transparency.org/whatwedo/pub/cpi_2013.

⁸⁵ Vidhi Doshi, "Elephant Campaign: How Africa's 'White Gold' Funds the Al-Shabaab Militants.," *The Independent, UK*, 3 February 2014,
<http://www.independent.co.uk/voices/campaigns/elephant-campaign/elephant-campaign-how-africas-white-gold-funds-the-alshabaab-militants-9102862.html>.

⁸⁶ Christopher Tumwine, "National Identity Development: Reflections on the Cases of Uganda and Tanzania," (2009), <http://www.hivos.net/Hivos-Knowledge-Programme/Themes/Pluralism/Countries/Uganda/Resources/National-identity-development.-Reflections-on-the-cases-of-Uganda-and-Tanzania>. Edward Miguel, "Tribe or Nation? Nation-Building and Public Goods in Kenya Versus Tanzania," *World Politics* 56, no. 3 (2004).

⁸⁷ "Tribe or Nation? Nation-Building and Public Goods in Kenya Versus Tanzania."

political and social conflict, which breaks out along ethnic lines.⁸⁸ Botswana, dominated by one ethnic group, the Tswana, is considered the most homogenous country in Africa and outside of struggles between indigenous Basarwa (San people) bushmen and the central government over land use rights, little ethnic strife exists.⁸⁹

Case study analysis aligns with the SESF and RAT at multiple points. First, the case study methodology meshes with the SESF's emphasis on nested and tiered variables and sub variables, its inclusion of attributes of users and decision making processes, and their relationship with interactions and outcomes. Case studies focus on background conditions and the interactions of multiple actors and variables across levels, space, and time to explain current conditions. As the previous sections articulate, elephant SESs in Botswana, Kenya, and Tanzania operate as nested tiers of a global SESs. Elephant SESs are by definition transnational in terms of resource movement, resource users, and governance systems, shifting over time at varying speeds. An examination of the RAT in any elephant SES requires a multi-scale and multi-level approach, across time and space, which is possible through the application of case study analysis.

Second, case study analysis focuses on processes and patterns of interactions to determine which background conditions or combination of conditions are required to produce outcomes through 'process tracing,' which dovetails with the SESF applied in this study. Process tracing involves

⁸⁸ Ibid.

⁸⁹ Jacqueline S. Solway, "Navigating the 'Neutral' State: 'Minority' Rights in Botswana," *Journal of Southern African Studies* 28, no. 4 (2002).

examination of “the chain of events or the decision-making process by which initial case conditions are translated into case outcomes,” again aligning with the SESF.⁹⁰ The conditions of SESs shift and alter between geographies and across time and are the result of a long history of interactions which process tracing can reveal. By process-tracing the analysis can examine how the conditions within the case translate into outcomes.

Third, through process tracing, case study analysis allows the researcher to focus on multiple data points to establish the cause and affect links between the independent variables to reveal observable evidence and identify key background conditions feeding into interactions and outcomes. The SESF allows for multiple variables and encourages their study across scales and levels. In a study of complex systems such as an SES a research methodology that limits variables would inevitably lead to an analysis which flattens and oversimplifies problem sets to the point of meaninglessness. Lastly, case studies are a good vehicle for “inferring and testing explanations that define how the independent causes the dependent variables.”⁹¹ Given fairly uniform background conditions case studies can become a semi-controlled environment. If the case studies support a hypothesis than the researcher can explore the case further to deduce and test explanations detailing the operation of the hypothesis. Case studies can explain both that hypothesis hold, and why they hold. The case studies selected for this study share enough background conditions to qualify the study as ‘semi-controlled.’

⁹⁰ Stephen Van Evera, *Guide to Methods for Students of Political Science* (Ithaca: Cornell University Press, 1997), 64.

⁹¹ Ibid.

Through case study analysis this project will, in addition to exercising the SESF through qualitative analysis, test theories associated with the causes of poaching which rely on flattened, uncomplicated, monocausal variables. The project will also reveal key background conditions and test their importance. Lastly, it will explain cases of intrinsic importance in the study of poaching and transnational crime.

With the research design established, the study next turns to an examination of international factors that impact the elephant SESF in Chapter 4. This chapter identifies first level 'generic' variables- the resource system, resource users, governance system, and resource units- to unpack and relate variables across scales and levels to identify key interactions impacting tiers nested below which either contribute to ecological systems resilience or its degradation.

CHAPTER 4

THE INTERNATIONAL SOCIAL ECOLOGICAL SYSTEM

The purpose of this chapter is to examine how human action is shaping the African elephant ecosystem through over-harvesting of finite resources at the international level and range state level, nested immediately below. Per the analytic framework this study adopts, the social-ecological systems framework (SESF), the chapter identifies first level 'generic' variable interactions that can then be unpacked to understand how lower tier variables to explored in detail.¹ These are the resource system, resource users, governance system, and resource units, defined in Chapter 3. Shifts in the social-ecological system (SES) are linked to complex sets of local processes, and vice versa.²

This chapter begins to unpack and relate variables across scales and levels to identify key interactions impacting tiers nested below which either contribute to ecological systems resilience or its degradation. It focuses on reciprocal relationships and feedback loops between the international and range state level. As Ostrom notes, it is imperative to understand "how systems are progressively linked to ever larger systems and how upward and downward causation linkages occur within an SES as well as across diverse sectors and scales."³ In the African elephant global SES, governance failures and the actions of resource users at the range state level percolate up to the international level

¹ Binder, "Comparison of Frameworks for Analyzing Social-Ecological Systems," 26.

² Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World," 8.

³ Elinor Ostrom, "Frameworks and Theories for Environmental Change," *Global Environmental Change* 18 (2008).

with a corrosive effect on the ability of international institutions to manage resources in an efficient, effective, and sustainable manner. Similarly, the tendency towards specific usage patterns and knowledge systems resting at the international level reflect in patterns and practices at the range state level, with deleterious impacts on the health of the global SES.

This chapter serves as the first step in the process of tracking impacts and interactions across all levels of the SES. SESs involve groups of resource users linked to one another, and to other resources across scales and governance arrangements.⁴

Interactions

The sections below examine how the key generic variables- resource system, governance systems, resource users, and resource units- interact together to produce a system which is currently in crisis, potentially transforming from a system defined by relative resilience into one threatened with collapse.

Interactions between parts of the SES- resources, users, governance systems, and the system, have largely occurred in the context of an open-access system, leading to local extirpation of elephant resources and the transformation of the SES over time. In the current era this is occurring as a result of scale and level mismatches between governance, jurisdiction, and knowledge systems, in addition to other scale challenges relating to the ignorance of scale and level

⁴ Janssen, Anderies, and Ostrom, "Robustness of Social-Ecological Systems to Spatial and Temporal Variability."

dynamics and misunderstandings about the role heterogeneity in the SES.⁵ Scale challenges are defined as a “situation in which the current combination of cross-scale and cross-level interactions threatens to undermine the resilience of a human-environment system.”⁶ The three types of “scale challenge” Cash identifies are “the failure to recognize important scale and level interactions altogether; the persistence of mismatches between levels and scales in human environment systems; and the failure to recognize heterogeneity in the way that scales are perceived and valued by different actors, even at the same level.”⁷

Within governance institutions these scale challenges occur alongside of collective action dilemmas inherent in diverse organizations. Collective action dilemmas occur when there is “a divergence of what is in the interests of the individual and what is optimal for the community or larger group.”⁸ By definition CITES relies on the collective actions of parties to protect wildlife, sometimes resulting in compromise to create a large coalition and move legislation.⁹ The requirement to accommodate the variety of parties within CITES and their varying perspectives on the role of wildlife and the appropriate management scale for local wildlife conservation, affects the types of policies which can be

⁵ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

⁶ Ibid.

⁷ Ibid.

⁸ Acheson, "Institutional Failure in Resource Management," 119.

⁹ In 1989 Kenya, Tanzania, Somalia, Gambia, Hungary, the US, and Austria co-sponsored legislation to ban the international sale in ivory at the 1989 CoP. Southern range states opposed the ban. After intense debate and lobbying by both sides a compromise was struck. All African elephants were move to Appendix I, but criteria were identified by which states could lobby to have their populations down-listed. These included its population, anti-poaching controls, and its ability to control smuggling from or through its territory. See Orenstein, *Ivory, Horn, and Blood: Behind the Elephant and Rhinoceros Poaching Crisis*.

adopted within CITES.¹⁰ As a globally linked system the SES is not only large, stretching across dozens of international borders, but it involves institutions and people physically located and physically distant from the SES. The SES literature suggests that the lack of consensus among resource users on appropriate resource use or conservation strategies weakens ability of the governing authority to address perturbations in the SES.¹¹ These dynamics are evident within interactions between CITES and range states which differ on resource use policies and conservation goals.

The challenges of scale dynamics and collective action problems are increasing the vulnerability of the system and limiting its ability to adapt to perturbations and respond in a way that preserves the system's resilience. As Chapter 3 noted, resilience is "a measure of a system's capacity to cope with shocks and undergo change while retaining essentially the same structure and function." When resilience declines, as is occurring in the SES, progressively smaller disturbances will have a disproportionate affect on the SES, transforming it into a new system "in which its structure and function are substantially different."¹² In the case of the African elephant SES a new system would be smaller, fragmented, geographically isolated, and would lose many of the features of an international SES. These smaller systems would, in turn, be increasingly vulnerable to perturbations at every level and would likely not be able to achieve resilience.

¹⁰ Ostrom, "Twenty Years into the Future: The Challenge of the Common Pool Resources".

¹¹ "A Diagnostic Approach for Going Beyond Panaceas."

¹² Walker, "Resilience, Adaptability, and Transformability in the Goulburn-Broken Catchment, Australia," 12.

The international SES experiences the effects of all of these challenges, with impacts across the SES and inclusive of global resource users.

Jurisdiction/Geographic Mismatches and Collective Action Implications for Enforcement at the International Level

Scholars have illustrated that preservation of SESs require institutions whose scale of authority are appropriate to the geographic scale of the ecosystem. Perhaps more than any social ecological system on earth, by dividing a continent sized natural habitat among numerous states and jurisdictions, the rapid and continuing extirpation of elephants illustrates the costs of a mismatch in scales of resource systems and governing institutions. Large institutions may prove unwieldy and be too slow to quickly address shifts in usage patterns, while authorities with more limited geographic and jurisdictional reach lack the capacity to address perturbations closely linked with international markets and global resource users. Collective action dilemmas complicate management further, as states within the system attempt to exert their preferences on the entire system, or flout system requirements altogether. Other issues related to jurisdictional and geographic scale mismatches relate to how species are monitored and tracked, and levels of funding available for conservation. The performance of CITES in the management of the global elephant SES, as the following discussion illustrates, provides evidence to support this hypothesis. A more detailed

discussion of tiers nested below- primarily governance authorities resting at the range state level, will be developed in the case study chapters.

The notion of geographic/jurisdictional scale mismatch refers to “poor fit between the levels of authority and size of a system (state control of fisheries or ranges that extend across zones), and the scale of jurisdiction for solving that problem.”¹³ Problems associated with the management of fugitive species which move into and out of territories and across state boundaries often relate to scale mismatches.¹⁴ As resource systems increasingly operate on a global scale, shifts in usage patterns and utilization strategies amongst potentially millions of users, test the capability of large institutions to react and adapt quickly to avert uncontrolled and unplanned transformation.

Lacking an enforcement arm that operates below the international level, CITES relies on its ability to identify and sanction state level actors in response to overexploitation of the SES. However given the accelerated pace of change Ostrom identifies as a challenge to global SES, the slow pace of CITES’ bureaucracy creates difficulty in quickly identifying and addressing perturbations across levels of the SES.¹⁵ ¹⁶ Long periods between meetings allow populations

¹³ D. W. Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World," *ibid.* 11, no. 2 (2006).

¹⁴ Wamukoya Francesca Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks" (University of Nairobi, 2013).

¹⁵ Structurally CITES consists of five components- the Conference of Parties (CoP), the main decision making body of CITES, is comprised of the member states; the Standing Committee, which provides policy guidance and oversees the budget; two committees, one each for plants and animals, which provide scientific advice and guidance to the CoP; and the Secretariat which oversees the CoPs, conducts scientific and technical studies, produces annual reports on issues related to the convention, and makes recommendations regarding the implementation of the convention. See "What Is Cites," Convention on the International Trade in Endangered Species of Fauna and Flora, 2013 <http://www.cites.org/eng/disc/what.php>.

to continue to decline without action at the international level. Parties only meet to review policies and implementation of the convention every two to three years at the Conference of Parties (CoPs).¹⁷ The process of introducing an issue, lobbying, deciding to vote, and voting can take years. When decisions are made implementation is not necessarily immediate and relies heavily on Parties' willingness and ability to comply. States are often given years between mandates and implementation, leaving species to continue dwindling into extirpation. Moreover, even decisive actions by CITES, such as moving a species from Appendix III to Appendix II, may have little or no impact on trade levels.¹⁸

CITES' bureaucracy makes it difficult for the institution to quickly identify and engage with states of concern. It took CITES the better part of a decade to publicly name the "gang of eight" countries of concern, despite early indications of organized crime, government complicity, and high levels of poaching.¹⁹ The gang of eight includes the source countries Kenya, Tanzania and Uganda, transit countries, Malaysia, Vietnam and the Philippines, and destination countries, Thailand and China. These countries had come to CITES' attention for their role in the illegal ivory trade as early as 1998 and were cited every year as key

¹⁶ The African Elephant Specialist Group (AfESG), an organization under the IUCN, provides scientific advice and expertise to the CITES Secretariat.

¹⁷ Elephant Voices, "Kenya Elephant Forum Fact Sheets 2013," <http://www.elephantvoices.org/threats-to-elephants/ivory-trade-fact-sheets-2013.html>.

¹⁸ Despite at least a decade and a half of heavy poaching, at the international level African elephants only began receiving protection through CITES when Ghana requested an Appendix III listing in 1976. During the 1977 CoP the African elephant was moved to Appendix II, in theory allowing for greater protection. This movement had little impact on elephant populations and poaching, however, as populations continued to rapidly decline throughout the late 1970s and the entire decade of the 1980s.

¹⁹ T. Milliken, R. W. Burn, and L. Sangalakula, "The Elephant Trade Information System (Etis) and the Illicit Trade in Ivory," in *CITES* (14 October 2009), <http://www.cites.org/eng/cop/15/doc/E15-44-01A.pdf>.

players in the illicit trade in studies, however no action was taken.²⁰ It took CITES another year to recognize other key countries in their 'gang' of offenders, despite abundant evidence of their role in the international illicit trade including Gabon²¹ and Mozambique,²² important sources for ivory with confirmed severe population declines over the past five years, weak or unenforced laws, and clear government complicity in the trade. CITES slow response time enables transnational criminals who can swoop into an area, decimate resources, and move items to market quickly, before authorities can respond.²³

CITES commitment to regulating a sustainable trade is further undermined by its failure to ensure states remain in compliance with the treaty and do not create conditions conducive to the penetration of organized crime into the market. CITES can invoke sanctioning mechanisms for non-compliance with reporting; non-compliance with specific requirements under the Action Plan for the Control of Trade in African Elephant Ivory; and for inadequate domestic implementing legislation; but rarely does. These sanctions can include barring countries from trading in any listed species, an action with significant economic impacts to states.²⁴ ²⁵ CITES did not even call on these states to shut down

²⁰ Damian Carrington, "Stop Ivory Poaching of Face Sanctions, Nations Warned at Cites," in *The Guardian* (6 March 2013), <http://www.theguardian.com/environment/2013/mar/06/ivory-poaching-sanctions-cites>.

²¹ John R. Platt, "Poachers Have Killed 62 Percent of Forest Elephants in the Past Decade," in *Scientific American* (2 April 2013), <http://blogs.scientificamerican.com/extinction-countdown/2013/04/02/poachers-killed-62-percent-forest-elephants/>.

²² David Smith, "Elephant Killings in Mozambique Happening on 'Industrialised' Scale," in *The Guardian* (23 September 2014), <http://www.theguardian.com/environment/2014/sep/23/elephant-killings-industrialised-scale-illegal-ivory-trade>.

²³ Ostrom, "Twenty Years into the Future: The Challenge of the Common Pool Resources". 12.

²⁴ Peter H. Sand, "Enforcing Cites: The Rise and Fall of Trade Sanctions," *Review of European Community and International Environmental Law* 22, no. 3 (2013).

²⁵ Anna Willock, Administrative and Monitoring Implications of Listing and Down-Listing of Commercially Exploited Aquatic Species, Including the Implications of Annex 4 of Resolution

domestic markets, despite evidence that ivory is laundered through them.²⁶ CITES did not pass sanctions on any of the named countries, instead only requiring each state to deliver an action plan to address the issue.²⁷ At the Standing Committee Meeting on Animals in 2013 CITES only directly addressed China and Thailand after the official meetings had formally ended, despite their pivotal roles in the illicit trade. If applied, CITES sanctions could halt the international trade of over 35,000 plant and animal species to and from offending countries, a major economic and reputational blow.²⁸ CITES unwillingness to apply meaningful sanctions to states in contravention of the treaty's mandates contributes to non-compliance, limiting the treaty's effectiveness.

The most egregious example of this failure is the handling of the second "one-off" sale to China. CITES did not follow up on the Chinese market after the one-off sale and has not addressed evidence clearly illustrating the role of the sale in the rise in poaching or the level of illegal trade, and its rise, after the sale. Chinese continue to be implicated in ivory trafficking on a regular basis across

Conf. 9.24, (CITES), <http://www.cites.org/sites/default/files/eng/news/meetings/IFS-05/IFS05-TRAFFIC-paper.pdf>.

²⁶ Shruti Suresh, "Cites: Rhetoric and Tiptoeing around Elephant Poaching," in *Environmental Investigation Agency* (15 March 2013), <http://eia-international.org/cites-polite-rhetoric-and-tiptoeing-around-elephant-poaching>.

²⁷ Despite an acknowledgement by CITES authorities that Thailand took little or no action to rein in the domestic ivory trade in the preceding years, the country avoided sanctions at the 2014 meeting, and was allotted more time to affect change in the illicit ivory sector. This is despite the fact that TRAFFIC found triple the amount of ivory for sale in domestic markets in the year between the original 'gang or eight' designation and the 2014 assessment of action plans. See TRAFFIC, "Thailand Must Address Illegal Ivory Trade or Could Face Sanctions: Cites," (25 July 2014), <http://www.traffic.org/home/2014/7/25/thailand-must-address-illegal-ivory-trade-or-could-face-sanc.html>. In 2014 Kenya submitted their plan to CITES and was removed from the offender list, despite achieving little success in stopping poaching, and despite an ongoing effort within the government to minimize the level and impacts of poaching. See John Muchangi, "Kenya Escapes Cites Wildlife Sanctions," in *AllAfrica.com* (25 July 2014), <http://allafrica.com/stories/201407251100.html>.

²⁸ Jonathan Fowler, "Thailand Faces Trade Ban over Ivory Failings: Cites," in *Agence France Press* (12 July 2014), <http://www.nationmultimedia.com/national/Thailand-faces-trade-ban-over-ivory-failings-CITES-30238352.html>.

Africa, and the continuation of large scale seizures throughout 2014 indicate unsustainable trade to Asia continues.²⁹ The unwillingness or inability of CITES to hold China accountable for its role in the international trade in illicit ivory and for the transformation in the SES is repeated across other major consumer states in Asia and within African range states. At the time of publication CITES has not sanctioned any state for its failure to control the illicit ivory trade.

These failures are mirrored at tiers nested below the international level. Membership in CITES does not preclude states crafting harsher penalties for the illegal collection and trade of wildlife. Parties could implement voluntary moratoriums on trade in listed species within their borders, or enhance laws meant to protect species. However, across the resource system, laws and other controls on wildlife crimes at lower tiers of the SES do not typically reflect the gravity or scale of wildlife crime. Most states do not have strong laws proscribing the illegal killing or trafficking of wildlife, many do not enforce the laws that are on the books, and often lack the capacity or political will to identify criminal trafficking.³⁰ Changes to legislation to more closely link penalties with the scope and scale of crimes committed, has occurred slowly, if at all.³¹ While most range states are parties to CITES and have agreed to abstain from trading elephant ivory at the international level they have failed to create or enforce anti-poaching

²⁹ Wittemyer et al., "Illegal Killing for Ivory Drives Global Decline in African Elephants."

³⁰ Kahumbu et al.

³¹ Gabon, for example, has promised and failed to change its legislation in response to the massive increase in poaching on its forest elephant population since at least 2013. Kenya stands out as one of the few states that have updated and implemented harsher laws and penalties for wildlife crimes.

and trafficking laws at the state level where poaching and trafficking occurs before it becomes transnational.³²

Challenges to Resource Monitoring across Geographic and Jurisdictional Scales

Governance of the SES relies on effective monitoring of resources and resource use patterns within the system, challenged by its existence across dozens of international borders and jurisdictions. Ineffective monitoring of wildlife resources can lead to 'information problems.'³³ Essentially, information problems can include assuming an individual population exemplifies population dynamics at large; ignoring variability between populations; and ignoring the viability of remaining stocks, all of which can lead decision makers to prescribe policies incompatible with sustainability.³⁴ However, CITES leaves some of the most burdensome and technically difficult aspects of monitoring the illegal trade to states with little capacity or political will to meet the challenge.³⁵ The resulting data is often faulty, incomplete, or inaccurate resulting in underestimates of illegal sales and kills in most countries. The Monitoring the Illegal Killing of

³² Parties designate a CITES Scientific Authority and CITES Management Authority to oversee data collection and law enforcement to ensure compliance. Management Authorities ensure trade provisions under CITES are met and creates a licensing system to track and control trade. Scientific Authorities makes determinations on the effects of trade on a species, monitor exports, and provide advice on trade levels to Management Authorities.

³³ Dietz, Ostrom, and Stern, "The Struggle for the Commons," 1908.

³⁴ Ibid.

³⁵ TRAFFIC, the Trade Records Analysis of Flora and Fauna in Commerce, manages ETIS on behalf of CITES and produces analyses of patterns and drivers of illegal trade for presentation at each CoP. See CITES, "Memorandum of Understanding (Mou) Concluded between Traffic International, on Behalf of the Traffic Network, 219c, Huntingdon Road, Cambridge, Cb3 0dl, United Kingdom and the United Nations Environment Programme, Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (the Cites Secretariat), 15, Chemin Des Anémones, 1219 Châtelaine, Geneva, Switzerland," (1 November 1999), <http://www.cites.org/common/disc/sec/CITES-TRAFFIC.pdf>.

Elephants program, commonly known as MIKE, measures trends in illegal killings and identifies factors related to the trends. The program operates in sixty sites across 30 African range states. These sites hold between 30-40% of the continent's elephants. The proportion of illegally killed elephants (PIKE) is measured at each site through carcass examinations and is used to indicate regional levels of poaching³⁶ and produce analysis on trends in illegal killing.³⁷ Obtaining reliable data across sites is problematic for a number of reasons. First, the sites do not represent a random sample of elephant range sites. The second concern relates to the difficulty analyzing and comparing the data provided. Because patrols vary on areas covered or methods and intensity of patrols, the chances of finding carcasses vary greatly even within sites. Because sites exist in countries with a range of resources devoted to wildlife conservation the level of effort and capacity within staffs can vary greatly across MIKE sites.³⁸ Resulting analysis of MIKE and PIKE data conducted by CITES underestimated the level of illegal killing across Africa and influenced decision maker within the body to continue pursuing avenues to expand the legal trade in ivory. Information released by CITES using its MIKE program often contradicts that released by scholars and other wildlife authorities.³⁹ Seizures of data of trafficked ivory captured through the CITES Elephant Trade Information System (ETIS) is similarly wanting. ETIS reports contain information on seizures relating to countries either directly

³⁶ Wittemyer et al., "Illegal Killing for Ivory Drives Global Decline in African Elephants."

³⁷ CITES, "Sixty-Fifth Meeting of the Standing Committee: Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Elephant Conservation, Illegal Killing and Ivory Trade," (Geneva, Switzerland: CITES, 7-11 July 2014).

³⁸ Robert W. Burn, Fiona M. Underwood, and Julian Blanc, "Global Trends and Factors Associated with the Illegal Killing of Elephants: A Hierarchical Bayesian Analysis of Carcass Encounter Data," *PLoS ONE* 6, no. 9 (2011).

involved in the ivory trade or that have been identified as a source, transit, or destination country for illegal ivory, or whose nationals are considered to be involved in the illicit trade. Recommendations contained in ETIS reports are used to mandate assessments of ivory trade controls in countries of concern.⁴⁰ However, as currently compiled, ETIS reports do not accurately reflect the level of illicit international trade or even accurately record seizures. Six African elephant range states have never submitted elephant product seizure records despite being implicated in seizures.⁴¹ Records may not specify the weight of seizures, but merely pieces of ivory, making quantification difficult.⁴² Despite the information problems evident CITES's statistics governance mechanisms rely heavily on this data to inform decision making bodies, impacting the ability of Parties to make the type of informed decisions on levels of trade necessary to ensure the responsible management of species at the international level.

⁴⁰ "Cites 1973-2013: The Elephant Trade Information System: What Is Etis?," Convention on the International Trade in Species of Wild Fauna and Flora, <http://www.cites.org/eng/prog/etis/index.php>.

⁴¹ (Benin, Equatorial Guinea, Guinea-Bissau, Liberia, Senegal and Somalia), and three Asian elephant range States (Bangladesh, the Lao People's Democratic Republic and Myanmar). CITES, "Sixty-Fifth Meeting of the Standing Committee: Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Elephant Conservation, Illegal Killing and Ivory Trade."

⁴² A good example is Tanzania, which has emerged as a major point of origin and transit route for ivory, yet reports few seizures. The 2009 reports to CITES demonstrated Tanzania was implicated in 15 of the 55 largest seizures reported to ETIS. Further, even the licit trade statistics gathered through CITES are rife with errors and discrepancies. According to Blundell, despite the fact that these numbers are used to regulate the flow of trade, "CITES figures and state export figures can be widely divergent and, in fact, rarely equate, even in states with higher levels of enforcement and regulating capacity." Arthur G. Blundell and Michael B. Mascia, "Discrepancies in Reported Levels of International Wildlife Trade," in *Conservation International Center for Applied Biodiversity*.

Challenges to Funding Conservation across a Geographically Expansive SES

In an SES a significant institutional mismatch related to the levels of funding for conservation activities and the funds available for those activities can undermine the ability of even well formulated policies to positively impact wildlife populations and trade levels. Within the African elephant SES such a funding mismatch occurs across levels of governance within the SES, meaning while the burden of enforcement measures and conservation initiatives are forced down to lower tiers in the SES, implementation funds are lacking. At every level of the international SES funding available for conservation is “a fraction of the hundreds of billions in annual expenditures which would be required to reduce biodiversity loss significantly.”⁴³ This is despite the fact that African range states within the SES are deeply dependent on the survival and health of the SES for significant portions of their national GDPs.

CITES lacks the funds to invest in even core programs and initiatives. CITES has the power to urge, but not to require, parties to provide funding to implement recommendations. The institution relies on a trust fund and contributions from parties to fund the organization and its activities making it vulnerable to chronic and significant shortfalls. Parties consistently fail to pay dues to CITES, and often do not contribute to special funds. CITES expected contributions of nearly \$6 million for operations in 2014, but reported less than \$3 million received by October 2014. Some states contribute less than \$100 per

⁴³ C. Mora, Sale, P.F., "Ongoing Global Biodiversity Loss and the Need to Move Beyond Protected Areas: A Review of the Technical and Practical Shortcoming of Protected Areas on Land and Sea," *Marine Ecology Progress Series* 434 (2011).

year while others pledge high amounts and fail to deliver.⁴⁴ Lack of funding hampers the ability of CITES to enforce decisions. For example, at the 14th CoP in 2007 CITES mandated that African elephant range states create an Action Plan to provide “coordinated and immediate action.”⁴⁵ The Fund was not launched until 2011, with the goal of raising \$100 million over three years for law enforcement programs.⁴⁶ It raised less than \$100,000 the first year.⁴⁷ The chronic lack of funds impedes the ability of CITES’ programs to improve enforcement mechanisms for African elephant range states.

Despite heavy dependence on environmental resources, in particular wildlife viewing tourism, for GDP growth, range states fail to invest in conservation proportionally either to the scale of the threat the environment faces, or the level of return possible on investments. This dynamic will be more closely examined in the follow-on case studies, which examine cross-level interactions at the range state level and below. Most range states similarly fail to

⁴⁴ CITES, "Cites Trust Fund: Status of Contributions as of 25 March 2015," 2015 http://www.cites.org/sites/default/files/eng/disc/funds/ct_en.pdf. "Cites Trust Fund: Scale of Contributions for the Triennium 2014-2016," 2015 <http://www.cites.org/sites/default/files/eng/res/16/E-Res-16-02-A4.pdf>.

⁴⁵ "Fifteenth Meeting of the Conference of the Parties: African Elephant Action Plan," (13-25 March 2010), <http://www.cites.org/common/cop/15/inf/E15i-68.pdf>. "African Elephant Meeting: The African Elephant Fund: Innovative Financing Mechanisms for the African Elephant Action Plan - First Analysis and Recommendations for Next Steps," (23-25 June 2008), http://www.cites.org/sites/default/files/eng/prog/mike/reg_meet/AEM1/EN-The%20African%20Elephant%20Fund.pdf.

⁴⁶ "African Elephant Fund Launched at Cites Meeting," 19 August 2011 http://www.cites.org/eng/news/pr/2011/20110819_SC61.php.

⁴⁷ The plan recommends Parties build capacity in law enforcement, strengthen laws, coordinate and harmonize wildlife policies, commit to preservation of habitats, restore connectivity between habitats within and between states, strengthen multilateral and bilateral support for wildlife, coordinate land management planning across state borders, and reduce human elephant conflict, increase awareness of wildlife issues within stakeholder communities, monitor elephant status and discover populations, disseminate information, integrate elephant action plans into national priorities, use existing frameworks to promote conservation, improve local community cooperation and participation. See "Fifteenth Meeting of the Conference of the Parties: African Elephant Action Plan". Carrington.

invest in wildlife programs or fund conservation efforts beyond monies earned through entrance fees and other use fees at parks, despite the potential for wildlife tourism to boost national GDPs and introduce foreign currency into the market. The estimated tourist viewing value of an elephant is \$1.6 million over its lifetime. In just one year an elephant is expected to contribute nearly \$23,000 to local and national economies through non-consumptive wildlife viewing.⁴⁸ In some countries tourism receipts generate as much as 50% of GDP,⁴⁹ while elephant tourism alone can account for as much as 20% of wildlife tourism receipts.⁵⁰ Including knock-on effects, tourism has impacts construction, transportation, telecommunication, financial services, restaurants, agriculture fisheries, food processing, light manufacturing, handicrafts, and other goods and services available in the informal sector.⁵¹ Range states lose millions of dollars and future economic value when wildlife is poached, and yet consistently fail to adequately fund conservation and enforcement programs or to strengthen laws to protect wildlife. Law enforcement capacity and capacity within ranger forces, as stated elsewhere in this document, are undermined by weak investment and lack of material resources by governments.⁵² Because CITES rarely and weakly sanctions states for their inadequate controls, improvements are not forthcoming.

⁴⁸ "Dead or Alive: Valuing an Elephant " (2014), <http://iworry.org/wp-content/uploads/2013/09/Dead-or-Alive-Final-LR.pdf>.

⁴⁹ Kingsley Ighobor and Aissata Haidara, "Tourism in Africa Is Slowly Coming of Age," in *UN Africa Renewal Online* (2012), <http://www.un.org/africarenewal/magazine/august-2012/tourism-africa-slowly-coming-age>.

⁵⁰ IRAS, "Elephant: Significance-Economic".

⁵¹ Iain Christie et al., "Tourism in Africa: Harnessing Tourism for Growth and Improved Livelihoods," (2013), <http://www.worldbank.org/content/dam/Worldbank/document/Africa/Report/africa-tourism-report-2013-overview.pdf>.

⁵² Kahumbu.

Uncontrolled transformation of the SES could have devastating consequences in Africa and irreparably damage its tourism industry.

Regional organizations largely consist of weak and poorly funded institutions that in many cases only began addressing (ineffectively) poaching in the later stage of the crisis. NGOs, acting independently or in partnership with states, are not equipped either through legislation or in terms of funding levels to conclusively address illegal hunting and the complex problems associated with the practice. The largest NGOs operate with huge annual budgets in the tens or hundreds of millions of dollars, operating programs in countries across the globe while reaching millions of individual members.⁵³ For example, the most well recognized international wildlife NGO, the World Wildlife Fund (WWF), operates on an annual budget of over \$228 million.⁵⁴ While significant and necessary across all tiers of the resource system, NGO funding cannot fill the gap left by the failure of formal governance structures to invest in conservation.

Cultural Diversity Challenge and Heterogeneity in the SES

What is referred to by Cash as heterogeneity in the system, and by Ostrom as cultural diversity, challenge management of the SES in two ways. Both scholars are referring to the challenge of managing resource users and governance authorities nested in tiers below the international level who may not agree either on the scale of a perturbation, or its significance. Heterogeneity in

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how actors perceive perturbations facing the SES relates to how they perceive the scale of the SES. They may choose to shape a problem as local, national, or global depending on the response they hope to shape.⁵⁵ Cultural diversity between resource users and governance authorities in the system can create deep cultural divides, making it more difficult for institutions to identify perturbations or solutions in a cross-culturally relevant manner. This gap results from a lack of cross-level interactions in the knowledge systems and a misunderstanding of how different actors perceive the value of resources.⁵⁶

Differences in how parties perceive the scale of perturbations in the system directly impact their pattern of usage of resources. Range states within Africa continue to disagree over how best to secure elephant populations, through a trading regime or conservation and preservationist regime, because Southern African states shape the problem of poaching as localized geographically to other segments of the SES. They treat their populations as separate from the global whole and argue that local abundance can be sustained even in the face of a massive uptick in poaching. Actors at different levels are motivated differently and may be compelled or motivated to strengthen or weaken linkages between scales for political purposes. The drive to shape a problem as local or global, or at another level, can be understood as way for governance authorities at tiers below the international level to both simplify the

⁵⁵ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

⁵⁶ Ibid.

problem, and control solutions, which in the case of range states interested in exploiting their elephant resources is a trade model of conservation.⁵⁷

Southern African states have consistently argued that a legal ivory trade is both compatible with conservation and necessary to maintain healthy populations in the long term. South Africa, Botswana, Namibia, Zimbabwe, and Zambia have all tabled proposals aimed at reopening a regulated trade, though Botswana changed its position in 2013.⁵⁸ In 2010 Tanzania and Zambia submitted proposals to down-list their elephant populations in order to sell stockpiled ivory and trade in live animals, despite their inability to demonstrate appropriate enforcement controls and mounting evidence of a poaching crisis, in particular in Tanzania.⁵⁹ Considerable dissent surfaced amongst the African range states and other parties over the proposal. Kenya and India, in collaboration with international NGOs, lobbied at CoPs and among member states to reject any opening of the ivory trade, including one-off sales.⁶⁰ A coalition of range states voted against the measure and it was defeated.⁶¹ Congo, Ghana, Kenya, Liberia, Mali, Rwanda, Sierra Leone and Togo proposed extending the

⁵⁷ L. Lebel, P. Garden, and M. Imamura, "The Politics of Scale, Position and Place in the Management of Water Resources in the Mekong Region," *Ecology and Society* 10, no. 2 (2005).

⁵⁸ Rosaleen Duffy, "Global Environmental Governance and North–South Dynamics: The Case of the Cites," *Environment and Planning C: Government and Policy* 31, no. 2 (2013). Other states, like Gabon and Tanzania, have waffled back and forth on the issue, in turns proposing trade and later denouncing it.

⁵⁹ Kenya Elephant Forum, "Cites and the Ivory Trade," (March 2013), <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0CCUQFjAB&url=http%3A%2F%2Fwww.elephantvoices.org%2Fthreats-to-elephants%2Fivory-trade-fact-sheets-2013.html%3Fdownload%3D216%3Afact-sheet-3-cites-and-the-ivory-trade&ei=yhUPVeGbDYKwggTfyYDICA&usg=AFQjCNFvDNG9C9e9QmHr1QclqZZuaRQt4w&bv m=bv.88528373,d.eXY>. "Proposals on the African Elephant for Cites Cop15," (January 2010), http://wildlifedirect.org/files/2009/11/KEF_Fact_Sheet_04c.pdf.

⁶⁰ These include IFAW, Humane Society of the US (HSUS), the Environmental Investigation Agency (EIA), and Care for the Wild International.

⁶¹ Erik Stokstad, "Big Battle Brewing over Elephants at Upcoming Cites Meeting," *Science* 327 (5 February 2010).

moratorium on sales during the same CoP, illustrating the vast gulf between states lobbying for expanded sales and those seeking to support the ban.⁶²

Heterogeneity/Cultural Diversity Challenges In Resource Use Patterns

The heterogeneity/cultural diversity challenge helps explain user behavior in the face of systemic crisis. While globalization facilitates the flow of goods and people and connects users and markets, even in the context of global interconnectedness values do not easily transfer wholesale across cultures or levels. The lack of conservation norms or a deep understanding of SES dynamics, either in terms of elephant biology or the weakness within nested tiers of the governance system, partly explains Chinese policies to promote utilization over conservation. Issues facing the SES are framed and shaped according to political, cultural, and economic expedience by the most voracious resource users, creating a disconnect between how the system is valued by local users as opposed to distant users. The governing institutions have not been able to halt the over-exploitation of the system or to mitigate or control illicit resource users.

Because of the global nature of the ivory trade, the physical distance between resource users and the absence of cultural norms surrounding conservation, consumers in China and across Asia have a weak or nonexistent understanding of SES dynamics, which undermines sanctioning and policymaking to preserve the SES. They typically couch the issue as an African issue not related to Chinese behavior, defining the problem as local and bounded

⁶² Kenya Elephant Forum, "Proposals on the African Elephant for Cites Cop15".

to African countries, removing the need to respond.⁶³ The most lucrative segments of the illicit ivory trade are dominated by resource users, primarily Asian, who have not historically interacted within the SES on a large scale but are deeply connected through tradition and culture to the consumption of ivory. They view ivory as simultaneously a cultural symbol and as an investment.⁶⁴

Most Mainland Chinese, far from the African elephant resource system, do not understand the relationship between ivory and poaching, assuming that tusks simply fall out of an elephant's mouth, like teeth, without harming the animal. Their lack of knowledge contributes to a willingness to consume ivory.⁶⁵ Traditionally, cultural norms in China have not conveyed protections on wildlife. Chinese have viewed wild animals as sources of food, clothing, and medicine for millennia.⁶⁶ ⁶⁷ Considering the rise in prices for ivory and the seemingly endless expansion of the market, harvesting or purchasing ivory to the point of destruction of the SES can be considered a desirable and rational strategy to maximize both short and long term gains for illicit users. Once elephants become extinct trade restrictions become unnecessary, allowing for unlimited price rises on a finite resource.⁶⁸

In areas where Chinese do interact with the resources system their proximity-in the context of weak laws and weak capacity within range states, lack

⁶³ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

⁶⁴ Vira, Ewing, and Miller.

⁶⁵ Gabriel.

⁶⁶ TRAFFIC, "What's Driving the Wildlife Trade? A Review of Expert Opinion on Economic and Social Drivers of the Wildlife Trade and Trade Control Efforts in Cambodia, Indonesia, Lao Pdr and Vietnam".

⁶⁷ Zhang Li, Ning Hua, and Shan Sun, "Wildlife Trade, Consumption and Conservation Awareness in Southwest China," *Biodiversity Conservation* 17 (2008).

⁶⁸ Acheson, "Institutional Failure in Resource Management."

of conservation norms, lack of understanding of elephant SESs, and economic motivations-drives consumption. Improvements in infrastructure and transportation, increased wealth, recent opening of borders between China and its neighbors in Southeast Asia, and a general lack of wildlife trade monitoring in China all contribute to the growth of the wild animal market in China.⁶⁹ One estimate suggests as much as 80% of the world's wildlife crime is trafficked through or to China.⁷⁰

For individual Chinese, and the transnational criminal networks who control the trade in ivory, ivory acts as yet another resource to be extracted from Africa for processing and value addition in China. The values of ivory shifts significantly depending on its location along the supply chain. At the point of collection in remote areas in Africa ivory prices vary between \$50-100/kg ivory, though the value can be far less. Poachers may kill elephants for as little as a bag of salt, a share of the meat, or small cash remunerations.⁷¹ At consolidation points where ivory begins its journey overseas the price rises to \$250-400/kg. Chinese markets value ivory at around \$2100/kg. In the retail market a large or intricately carved piece can sell for millions of dollars.⁷² Based on an average weight of 5kg per tusk, raw elephant ivory from an average sized set of tusks is valued around \$21,000 at the final point of sale.⁷³ These high values do not accrue to range states.

⁶⁹ Zhang Li, Hua, and Sun, "Wildlife Trade, Consumption and Conservation Awareness in Southwest China."

⁷⁰ <http://www.independent.co.uk/environment/nature/conservation-must-stop-wasting-money-and-energy-on-giant-panda-and-other-cute-animals-warns-chris-packham-8877739.html>

⁷¹ Gettleman, "In Gabon, Lure of Ivory Is Hard for Many to Resist."

⁷² Vira, Ewing, and Miller.

⁷³ iworry, "The Campaign," <http://iworry.org/campaign/>.

The rise in Asian demand for trafficked wildlife can be linked directly to poaching increases in Africa.⁷⁴ Within the ivory trade transnational organized crime primarily consists of Asian lead, Africa run operations which move large quantities of ivory from Africa to points in Asia, in particular China. Following the model, Africans dominate the networks until ivory reaches the stage for containerization, recruiting poachers and killing and consolidating wildlife, after which Asian transnational organized crime syndicates take over.⁷⁵ African segments of these networks consist of a variety of actors including state security forces, rebel groups, political officials, businessmen, indigenous people, and members of the conservation community, in addition to cross-border insurgents and terrorist, covered separately below.

While other nationalities take part in the Asian segments of the trade, Chinese have been implicated in ivory-related offenses in almost all African range states, and in every part of the ivory chain other than the actual animal killing.⁷⁶ As globalization has made international travel and trade easier, more and more Chinese have moved to Africa, directly connecting consumers to the resource system. Chinese are the primary buyers of ivory in domestic markets across Africa, contributing to a significant 'ant trade' in ivory back to China as well as to the facilitation of industrial level trading.⁷⁷ The diaspora links local markets with international ivory markets through direct trade and facilitation of

⁷⁴ CITES Secretariat, "Elephant Conservation, Illegal Killing and Ivory Trade."
46.1) CITES, Geneva, Switzerland.

⁷⁵ Vira, Ewing, and Miller.

⁷⁶ Ibid.

⁷⁷ Ibid.

criminal networks. NGO reporting links both Chinese diplomatic and military missions to Africa with increases in local ivory trade volumes and prices.⁷⁸

The UNODC estimates two-thirds of the global ivory goes to Asian markets, dominated by China.⁷⁹ Wealthy Chinese buyers view ivory as a smart investment, responding to media hype that ivory investments are ‘risk free’ particularly in light of quickly escalating prices.⁸⁰ In a renewed market Chinese buy ivory as an investment, for its social value as a status symbol, for its art value, as jewelry or ornament, for religious objects, and for medicinal purposes.⁸¹

The knowledge scale mismatch goes hand in hand with a mismatch between the resource available and resources required to satisfy the market. The fast-paced rise in demand in China cannot be met by available stocks whether restricted to natural mortality of elephants, use of state stockpiles for sales, or through targeted harvesting of problem animals.⁸² As Cumming notes, “growing a resilient landscape depends heavily on finding an appropriate match between the scales of demands on ecosystems by human societies and the scales at which

⁷⁸ Dan Levin, "Chinese President's Delegation Tied to Illegal Ivory Purchases During Africa Visit," in *New York Times* (5 November 2014).

⁷⁹ UNODC, "Transnational Organized Crime in Eastern Africa: A Threat Assessment," (September 2013), http://www.unodc.org/documents/data-and-analysis/Studies/TOC_East_Africa_2013.pdf. "Globalization of Crime," (2010), http://www.unodc.org/documents/southeastasiaandpacific/indonesia/forest-crime/Globalization_of_Crime_-_Environmental_Resources.pdf; IFAW, "Our Work: Reducing Demand for Wildlife Products," <http://www.ifaw.org/international/our-work/wildlife-trade/reducing-demand-wildlife-products>.

⁸⁰ Chinese began investing heavily in art and antiques after the global recession began. Ivory became a preferred investment choice for those interested in art because of its low price point relative to other fine objects and the ease of identification, allowing investors to avoid fakes. Importantly, media hype surrounding the possibility of a “risk free” investment in ivory further drove purchases.

⁸¹ Gao and Clark, "Elephant Ivory Trade in China: Trends and Drivers."

⁸² Alejandro Nadal and Francisco Aguayo, "Legalizing Ivory Trade: Taking to New Heights a Dangerous Policy Proposal," in *National Geographic: A Voice for Elephants* (22 October 2014), <http://voices.nationalgeographic.com/2014/10/22/legalizing-ivory-trade-taking-to-new-heights-a-dangerous-policy-proposal/>.

ecosystems are capable of meeting these demands.”⁸³ This has not occurred within the global African elephant SES. The large number of resource users with conflicting norms on wildlife usage undermines the development of non-consumptive use conservation norms. The sheer number of resource users entering the system who lack conservation norms threaten to transform the system irrevocably.

Under a pro-trade regime the Chinese government views ivory as a source of revenue and as a vehicle to preserve Chinese ‘identity’ in a crowded global media sphere.⁸⁴ While the Chinese have long had a cultural affinity for ivory its popularity had waned after the 1989 trade ban. When the government declared ivory carving as an intangible cultural heritage worth preserving in 2006, it revived the industry.⁸⁵ The designation allowed the ivory carving industry to access state resources and was the primary rationale behind Chinese requests to purchase ivory in the second ‘one-off’ CITES auction.

The CITES sale provided China 62 tons of ivory, expanding the domestic market for ivory and the structures to support that market. In 2004, 17 companies were licensed to process raw ivory and an additional 87 retailers the right to sell ivory.⁸⁶ By 2014 the number of carving factories and retailers grew to 37 and 145, respectively. Three-quarters of ivory factories are state owned enterprises, meaning inflated prices and high demand directly benefit the government.⁸⁷

⁸³ Graeme S. Cumming et al., "Resilience, Experimentation, and Scale Mismatches in Social-Ecological Landscapes," *Landscape Ecology* 28 (3 March 2012).

⁸⁴ Gao and Clark, "Elephant Ivory Trade in China: Trends and Drivers."

⁸⁵ This designation occurred in response to the adoption of UNESCO's 2003 Convention for the Safeguarding of Intangible Cultural Heritage.

⁸⁶ Vira, Ewing, and Miller.

⁸⁷ Ibid.

Some of the failures of the Chinese government to provide adequate protections to the African elephant relate to the mismatch in knowledge scales and the heterogeneity in value systems across resource users. The Chinese government has failed to demonstrate commitment to elephant conservation and enforcement of CITES mandates. The government control of the ivory trade remains lax as measures put in place to manage it are widely subverted.⁸⁸ China failed to secure its ivory stockpile, an important responsibility under CITES meant to keep ivory from poached elephants out of the market. In 2008 the EIA reported over 110 tons of ivory- equivalent to 11,000 dead elephants-was missing from government controlled stocks as early as 2002. The theft was not investigated and no arrests were ever made. To reiterate points made above, under lax Chinese controls up to 90% of ivory in China is illegal, and more than half of legal ivory factories launder illegal ivory.⁸⁹ The Chinese arrest few traffickers, do not regularly investigate illegal activities within ivory carving or retail outlets, and do not publicly acknowledge a link between the purchase of ivory at the CITES auction, the rise in demand, or the increases in poaching across Africa.⁹⁰

Both the aggregated decisions of individual Chinese to consume, and the policies of the government to promote the ivory trade and consumption of ivory, are contributing to the transformation of the global SES.

⁸⁸ Ibid.

⁸⁹ Ibid. "Blood Ivory- Exposing the Myth of a Regulated Market".

⁹⁰ "Blood Ivory- Exposing the Myth of a Regulated Market".

The Precautionary Principle and CITES' Failure to Recognize Scale and Level Dynamics

The actions and preferences of range states, including their governance systems and use patterns, impact the ability of the international governance structure to operate effectively. Disagreements amongst range states and the inability to achieve consensus among them on the desirability and consequences of ivory sales facilitate CITES' position on sales. CITES has consistently left the door open to trade and continues to insist that a legal trade is possible. The organization does not acknowledge any link between the one-off sales and either an increase in demand or poaching. Ignoring scale dynamics entirely, CITES has not recognized its own role in the growth in the illicit trade in ivory.⁹¹ CITES has failed to acknowledge any links between the one-off sales and the increase in poaching.⁹² These failures not only weaken the norm against consumption of ivory but legitimize discussions around use of other wildlife products, in particular rhino horn, and the feasibility of legalizing sales.

In the 1980s when trade controls were first established CITES put up few barriers to continued trade. As currently, they relied heavily on states to set trade levels and monitor and control ivory sales to maintain sustainable off-takes. The Ivory Trade Control System established through CITES in 1985 was replete with corruption and mismanagement. Only states with scientifically based

⁹¹ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

⁹² CITES, "Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Monitoring the Illegal Killing of Elephants," (Bangkok: CoP16 Doc. 53.1 3-14 March 2013).

management programs were technically allowed to export ivory; however countries without adequate management programs simply moved their ivory to neighboring states for export. The quotas established, reported to the Secretariat and the Ivory Control Unit, consisted of a report of expected tusk export numbers per year. States were required to mark ivory for identification purposes.⁹³ The system did not establish or enforce maximum volumes of trade, relying instead on range states to determine quotas and their sustainability.⁹⁴ In 1987 the IUCN reported to CITES that nearly 80% of the 'legal' ivory in the world market was from poached elephants. The monitoring system had failed and populations plummeted further.⁹⁵ Moreover, to induce more states to join CITES, the body provided amnesties allowing states to sell massive stockpiles of illegally ivory on the international market. Half of Africa's elephants perished under CITES failed trading and ivory control regime in the 1980s.⁹⁶ Despite this, the CITES Secretariat actively opposed any ban on ivory trading and "lobbied heavily for continued trade."⁹⁷

CITES and range states' failure to recognize scale dynamics as impacting the viability of elephants as a species amounts to an abandonment of the precautionary principle which was put in place to guide decisions in the

⁹³ Orenstein, *Ivory, Horn, and Blood: Behind the Elephant and Rhinoceros Poaching Crisis*.

⁹⁴ T. Princen, "The Ivory Trade Ban: Ngos and International Conservation," *Environmental Ngos In World Politics* (Ipswich: Routledge, 1994), http://samples.sainsburysebooks.co.uk/9781134821631_sample_517835.pdf.

⁹⁵ Orenstein, *Ivory, Horn, and Blood: Behind the Elephant and Rhinoceros Poaching Crisis*.

⁹⁶ *Ibid.*

⁹⁷ *Ibid.*, 61. Iain and Oria Douglas-Hamilton, *Battle for the Elephants* (New York: Viking Press, 1992).

international body.⁹⁸ The precautionary principle states that in the case of “uncertainty regarding the status of a species or the impact of trade on the conservation of a species, the Parties shall act in the best interest of the conservation of the species concerned and, when considering proposals to amend Appendix I or II, adopt measures that are proportionate to the anticipated risks to the species.”⁹⁹ The principle reflects a commitment to usage strategies aimed at sustainable use within resilient SESs and conservation in circumstances of overexploitation.

Since the early 1980s CITES has consistently underplayed the threats to elephants related to trade, and has over-estimated the ability of states to protect wildlife and regulate and control trade.¹⁰⁰ Trade in ivory has been allowed to continue despite mounting evidence that trade is unsustainable, cannot be controlled by existing mechanisms (or those anticipated in the near future), and threatens elephants in most of their range. CITES clearly did not apply the precautionary principle in its decision to allow China to purchase ivory, despite reports from CITES research arm, TRAFFIC, as early as 2004 indicating “a new emerging consumer market in China was the principal driving force behind the upward trend” in ivory seizures from 1998.¹⁰¹ Unable to achieve consensus,

⁹⁸ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

⁹⁹ <http://cites.org/eng/res/09/09-24R16.php>

¹⁰⁰ CITES actions reflect member states collective decisions to provide protections, or not, to wildlife. Deliberations consider information gathered through CITES organs, testimonials of states, and the input of conservation NGOs.

¹⁰¹ T. Milliken et al., "The Elephant Trade Information System (Etis) and the Illicit Trade in Ivory: A Report to the 13th Meeting of the Conference of the Parties to Cites," (20 August 2004), <http://www.cites.org/sites/default/files/common/cop/13/inf/E13-29-2A.pdf>. In a nod to the precautionary principle, the second sale was accompanied by a nine year moratorium on ivory trading to determine the effects on the illegal trade and to allow states the opportunity to improve

CITES continues to facilitate the exploration of legalized ivory sales. In 2007, in the midst of the current poaching crisis, CITES commissioned a study to explore a decision-making mechanism for a process to regularly trade in ivory. The study, released in 2012, determined trade was sustainable from Appendix II countries using only natural mortality, despite clear evidence by the time of publication that elephants face a major poaching crisis in most of their range. It also provided an outline of how a regulated trade would function under CITES.¹⁰² CITES will take up the proposal at the CoP in 2016.

Short Term Gains to Resource Utilization

While some states have consistently advocated for a resource use strategy bolstered by consumption, ivory sales as a resource use strategy provide only short term gains and little economic benefit for range states or local resource users. Longer term strategies which emphasize resource conservation, on the other hand, allow range states to benefit from constant and accruing gains to wildlife resources.

enforcement. However, the moratorium only restricted sales from the four countries included in the 2008 sale, leaving a loophole allowing other states to petition for sales. At the same CoP CITES did not address whether or not poaching levels were serious enough to threaten the survival of the species throughout most of Africa. See Samuel Wasser et al., "Elephants, Ivory, and Trade."

¹⁰² R.B. Martin et al., Decision-Making Mechanisms and Necessary Conditions for a Future Trade in African Elephant Ivory: Final Report, (Consultancy for the CITES Secretariat 24 May 2012). Kenya Elephant Forum, "The Cites "Decision-Making Mechanism", (February 2013), <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCgQFjAB&url=http%3A%2F%2Fwww.elephantvoices.org%2Fthreats-to-elephants%2Fivory-trade-fact-sheets-2013.html%3Fdownload%3D220%3Afact-sheet-7-the-cites-decision-making-mechanism&ei=XhcPVbL7JYnCggSqo4CYBQ&usg=AFQjCNFbRzP1arYHLxjTYgLZVEs6BmpLqW&bvm=bv.89060397,d.eXY>.

Range states continue to lose out on the full economic value of their elephant resources as a result of the illegal harvesting of elephant ivory. While legal ivory sales not only fail to bring states significant economic value, they contribute to the increase in demand for ivory, met primarily through illicit channels. Harvesting increases, as a result, negatively impact states' abilities to fully realize the potential of wildlife tourism as a revenue generator.

Following patterns, which remain relevant, in the pre-ban era most states did not realize significant profits from the sale of ivory, even during periods of intense harvesting. African states exported from 600 to 1,160 tons of ivory per year from 1979-1986, however all but seven states reported merchandise export earnings related to ivory as less than 2 per cent of total receipts.¹⁰³ The latest ivory sales coordinated through CITES continued the trend of low profits for range states and big benefits for consumer states and criminal organizations. African range states earned \$15 million from the sale of 152 tons of ivory in the two CITES auctions.¹⁰⁴ Traders and collectors, in addition to transnational criminal groups, in China and Japan continue to reap the profits.¹⁰⁵

At the same time states lose current and future economic values associated with elephant viewing, the criminal killing of wildlife reduces security and stability in already weak states. In areas impacted by cross-border poaching

¹⁰³ Only the Central African Republic and the Democratic Republic of Congo earned more than 5% of merchandise export earnings from ivory during this period. Most states sold ivory at 10 to 20 per cent of the retail sales price, receiving a fraction of the \$50 million gross ivory revenue per annum. Asian exporters and stockpiles captured the most of the profits. See Princen.

¹⁰⁴ Vidhi Doshi, "The Film That Stopped the Ivory Trade," in *The Independent* (22 January 2014), <http://www.independent.co.uk/voices/comment/the-film-that-stopped-the-ivory-trade-9076494.html>.

¹⁰⁵ Pairs of chop sticks could fetch 200\$, while a small polished tusk could be priced as high as 35,000\$. See "Blood Ivory- Exposing the Myth of a Regulated Market".

gangs- insurgents, terrorists, and other dangerous non-state armed actors, populations suffer multiple forms of violence including kidnapping, sex slavery, forced labor, torture, and murder.¹⁰⁶ Poaching and other organized crimes committed by these groups lengthen conflict, destroy local environments, severely restrict licit economic growth, and sow insecurity across regions. They contribute to the development and perpetuation of 'war economies' and trading networks which trade all manner of illicit natural resources from coal to diamonds, to ivory, connecting conflict zones to regional political economies and licit and illicit actors in government and business.¹⁰⁷ Where ivory trafficking is controlled by members of the political and/or security establishment already weak institutions are further diminished, contributing to the general breakdown in the rule of law.¹⁰⁸ The concentration of illegal power that accrues to illicit actors undermines government effectiveness and legitimacy and increases corruption.¹⁰⁹

In 2010 the United Nations Office of Drugs and Crime (UNODC) estimated 120 tons of ivory entered the market each year illegally, totaling \$228,610,200 million wholesale, dwarfing state revenues from the legal 'one-off' ivory sales.¹¹⁰ The inability of governance systems to protect ivory resources means poachers and traffickers essentially operate in an open access system with few effective rules or regulations to limit their resource usage strategies.

¹⁰⁶ Davis, "Non-State Armed Actors, New Imagined Communities, and Shifting Patterns of Sovereignty and Insecurity in the Modern World."

¹⁰⁷ Le Sage, "Non-State Security Threats in Africa: Challenges for US Engagement." Kasper Agger and Jonathan Hutson, "Kony's Ivory: How Elephant Poaching in Congo Helps Support the Lord's Resistance Army," *The Enough Project* 6 (2013).

¹⁰⁸ Gastrow.

¹⁰⁹ Williams, "Crime, Illicit Markets, and Money Laundering."

¹¹⁰ UNODC, "Globalization of Crime".

The SES as an Open Access System

Through most of its history the SES essentially operated as a de facto open access system in which “everyone is permitted to harvest a resource” with no restrictions on resource use until local governance structures emerged in the late 19th and early 20th century.¹¹¹ Open access systems typically experience two forms of ‘free-riding,’ “overuse without concern for the negative effects on others, and a lack of contributed resources for maintaining and improving” the system.¹¹² These patterns are evident across the African elephant SES. Resource use patterns for elephant products, both ivory and meat, have been largely dominated by market driven resource maximization strategies since the earliest periods of (non-African) human/elephant interactions. These strategies consistently resulted in over-harvesting and exploitation of elephant resources, in some areas to the point of extirpation- local extinctions. As a result, after centuries of heavy hunting for ivory, only 4 million elephants remained in SES at the turn of the 20th century, where historically tens of millions of elephants had roamed.¹¹³

The earliest extirpations of elephants occurred within the context of the Roman Empire. The Romans sought out elephants for their ivory, for entertainment, and for their ability to provide services to humans, driving their

¹¹¹ Acheson, "Institutional Failure in Resource Management," 120.

¹¹² Ostrom et al., "Revisiting the Commons: Local Lessons, Global Challenges," 279.

¹¹³ Western, *In the Dust of Kilimanjaro*.

local extinctions in North Africa and in the Middle East.¹¹⁴ European expansion into Africa from the 1600s onwards drove local population crashes first in Southern Africa and then in West Africa. For centuries the ivory trade tracked closely with the international slave trade, as both goods travelled the same trade routes from remote areas to coastal trading zones where they were sold to international buyers.¹¹⁵ During this period European and American markets dominated the trade, importing millions of tusks per year in the 1800s during an age of industrial ivory production. European markets alone imported 1,000 tons of ivory per year during the 1800s.¹¹⁶ Ivory acted as a commodity for harvest and export to the industrialized West for manufacture into billiard balls, piano keys, hair combs, and other trinkets.¹¹⁷ Then as now the aggregated decisions of individuals to consume ivory drove the market while international institutions facilitated the trade. The current demand in Asian markets similarly drives the trade, and the patterns of use, evident within SESs across Africa, threatening to permanently transform the SES at the global scale.¹¹⁸

Resource utilization strategies began shifting around the turn of the 20th century, transforming interactions between resource users and resources from consumptive utilization to non-consumptive utilization. Governance mechanisms emerged to create laws and regulations protecting remaining elephant

¹¹⁴ Raymond Bonner, *At the Hand of Man: Peril and Hope for Africa's Wildlife* (New York: Knopf, 1993).

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

¹¹⁸ Wittemyer et al., "Illegal Killing for Ivory Drives Global Decline in African Elephants."

populations.¹¹⁹ Changing fashion trends, the Great Depression, and the two World Wars further reduced ivory consumption in the West, easing pressure on elephant populations. In the 1970s Japan emerged as a major international market, reinvigorating demand.¹²⁰ In the 1980s public awareness raising campaigns greatly reduced demand in the West. After the 1989 trade ban was adopted international sales of ivory plummeted almost immediately, and the international market for ivory “went into rapid collapse.”¹²¹

In the late 1980s and 1990s usage patterns shifted as the international community drove African governments to adopt neoliberal community based conservation models. After the massive poaching epidemic of the 1970s and 1980s, the international community, NGOs, and African governments recognized that fortress style conservation was inadequate to meet the requirements to protect a fugitive resource, in particular in light of quickly growing human populations which inevitably conflict with wildlife.¹²² Community based natural resource management (CBNRM) became the preferred strategy to address poaching and improve management of wildlife outside of parks, where most wildlife lives.¹²³ Wildlife resources within CBNRM programs in many parts of the

¹¹⁹ Martin Meredith, *Elephant Destiny: Biography of an Endangered Species in Africa* (New York: Public Affairs, 2001). Brown, *Blood Ivory: The Massacre of the African Elephant*.

¹²⁰ Meredith, *Elephant Destiny: Biography of an Endangered Species in Africa*.

¹²¹ Duffy, "Global Environmental Governance and North–South Dynamics: The Case of the Cites." Orenstein, *Ivory, Horn, and Blood: Behind the Elephant and Rhinoceros Poaching Crisis*, 63.

¹²² Dan Brockington, *Fortress Conservation: The Preservation of the Mkomazi Game Reserve, Tanzania* (Oxford: James Currey, 2002).

¹²³ Kadzo Kangwana & Christine Brown-Nunez, “The human context of the AMboseli elephants,” in *The Amboseli Elephants: A long term perspective on a long lived mammal*. EDS Cynthia J. Moss, Harvey Croze, and Phllis C. Lee. University of Chicago Press: Chicago and London, 2011.

SES became targets for elite predation and rent seeking as values to wildlife and land increased with liberalization.¹²⁴

Utilization strategies shifted again in the 2000s as markets expanded in Asia with preferences oriented towards consumption. Following earlier trends, market driven exploitation began threatening to transform the SES around 2002 before heating up in 2006 and 2009, and exploding from 2010.¹²⁵ As much as 5-7% of the elephant population is being slaughtered annually, and the rate is increasing, “shrinking the timeframe for elephant survival across most of the species’ range to within 10-15 years.”¹²⁶ Since 2010, when poaching rates first outstripped birth rates, elephant populations have been in net decline.¹²⁷ Pressure from the massive international market continue to shrink the SES across the continent, transforming some local SESs. The SES has not adapted in response to these perturbations, degrading resilience, which will, if unchecked, decrease the ability of the SES to “reorganize in the wake of change.”¹²⁸

With the exception of the brief period following the international trade ban from 1989 to the early 2000s when poaching rates had declined, the governance system and licit resource users have not been able to protect African elephants

¹²⁴ Fred Nelson and Arun Agarwal, "Patronage or Participation? Community Based Natural Resource Management Reform in Sub-Saharan Africa," *Development and Change* 39, no. 4 (2008).

¹²⁵ CITES, "Sixty-Fifth Meeting of the Standing Committee: Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Elephant Conservation, Illegal Killing and Ivory Trade."

¹²⁶ Wittemyer et al., "Illegal Killing for Ivory Drives Global Decline in African Elephants." Vira, Ewing, and Miller. 13.

¹²⁷ CITES, "Sixty-Fifth Meeting of the Standing Committee: Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Elephant Conservation, Illegal Killing and Ivory Trade."

¹²⁸ Walker, "Resilience, Adaptability and Transformability in Social–Ecological Systems."

from market demand for ivory.¹²⁹ The governance system has consistently failed to “establish rules curtailing resource use in the interest of long-term sustainability” throughout the SES.¹³⁰

Roving Bandits in the Open Access African Elephant SES

What Ostrom refers to as “roving bandits,” in this case transnational organized criminals trading in ivory, operate across the SES with impunity, linking resource users across the global SES with wildlife products.¹³¹ In a globalized SES, markets develop so quickly that illicit actors can move in, exploit a resource, then move out of an area at an accelerated clip before authorities can mount a response.¹³² Ostrom identifies ‘accelerating rates of change’ as a key challenge to the management of global SESs. Accelerating rates of change refers to how quickly environmental thresholds are passed compared to how long it takes governance authorities or others to notice. The speed with ivory

¹²⁹ Since 1970 animal populations have been reduced by 50%, part of an alarming biodiversity decline that includes the degradation of corals, mangroves, and sea grasses, deforestation, desertification, and acidification of the oceans (Julian Jowit, "International Failure to Meet Target to Reduce Biodiversity Decline: Pressures on the Natural World Have Risen since the 2002, Convention on Biological Diversity, Say Conservation Groups," *The Guardian*, 29 April 2010 2010, <http://www.theguardian.com/environment/2010/apr/29/international-failure-biodiversity-decline>. Andrew Soergel, "Wildlife Populations Half of What They Were in 1970," in *US News & World Report* (2014), <http://www.usnews.com/news/blogs/data-mine/2014/09/30/worlds-wildlife-down-by-half-since-1970-report-says>.) Flagship species like elephants, rhinos, pandas, tigers and polar bears have all experienced precipitous population declines, despite their visibility on the world stage and supposed importance as charismatic species. Black rhinos, which topped the WWF's agenda since its founding in the 1960s, have seen populations decline by 90%. The panda, the symbol of the WWF, have lost half their population since 1970. See Rypke Zeilmaker, "Worldwide Government Fund: Part 2," (2012), http://climategate.nl/wp-content/uploads/2012/08/World-Wide-Government-Fund-_2_.pdf.

¹³⁰ Acheson, "Institutional Failure in Resource Management," 119.

¹³¹ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

¹³² "Twenty Years into the Future: The Challenge of the Common Pool Resources". 12.

traffickers are able to exploit resources challenges the ability of governance authorities across levels to react in time to halt the transformation of local SESs.¹³³ In a largely open access system, these criminal poachers adopt a resource maximization strategy meant to realize gains as quickly as possible through whatever means necessary.¹³⁴ Criminal networks trafficked as much as 170 tons of ivory between 2009-2014, representing as many as 229,729 elephants illegally killed.¹³⁵

The United Nation's Convention against Transnational Organized Crime defines transnational organized crime in terms of *crime groups*. Crime groups include more than three people, operating for a period of time, with the intention to commit criminal actions for profit.¹³⁶ Crimes become transnational when:

their activities take place in more than one country;

are planned in one country and executed in another; involves an organized crime group that engages in activities in more than one state; and

when the effects are felt in more than one state.¹³⁷

TOC involving wildlife is often referred to as wildlife crime or environmental crime. Environmental crime involves five areas including the illegal trade in endangered species and wildlife; illegal trade in ozone depleting substances; illegal dumping, trade and transport of waste and hazardous substances; illegal,

¹³³ Ostrom et al., "Revisiting the Commons: Local Lessons, Global Challenges," 279.

¹³⁴ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

¹³⁵ Vira, Ewing, and Miller.

¹³⁶ United Nations General Assembly, "Resolution Adopted by the General Assembly: United Nations Convention against Transnational Organized Crime," (New York: A/Res/55/25, 8 January 2001).

¹³⁷ Ibid.

unregulated, and unreported commercial fishing; and illegal logging and trade in protected woodlands.¹³⁸ Wildlife crimes cost the world economy between \$70 and \$213 billion per year.¹³⁹

The large scale of ivory seizures, complex shipping routes, expense related to organizing and carrying out hunts, the sophisticated weapons used, and the organizational capacity to coordinate, containerize, and move large amounts of ivory clearly point to the involvement of transnational organized crime. Since 1989 authorities seized at least 55 large shipments of ivory (over 2.3 tones).¹⁴⁰ Between 1989 and 2010 approximately 21 tons of ivory were seized each year, with some spikes in 2002, 2006, and 2009. From 2011-2014 the rates approximately doubled to around 40 tons per year.¹⁴¹ As a low-risk, high-profit enterprise transnational criminals use ivory to generate hundreds of millions of dollars in revenue per year. While in some areas illicit ivory syndicates have operated for decades, transnational organized crime became most heavily involved in the illegal trade in ivory in the 2000s.¹⁴²

Transnational ivory trafficking illustrates how globalization can impact resilience and vulnerability of SESs. Criminal networks cross state boundaries in the SES and operate as global multinational businesses, connecting local

¹³⁸ Reece Walters, "Dirty Collar Crime and the Environment" (paper presented at the Proceedings of Crime, Justice and Social Democracy: An International Conference, Queensland University of Technology, Brisbane, QLD, 2012).

¹³⁹ United Nations Environment Programme, "Illegal Trade in Wildlife and Timber Products Finances Criminal and Militia Groups, Threatening Security and Sustainable Development," in *UNEP News Centre* (24 June 2014), <http://www.unep.org/newscentre/default.aspx?DocumentID=2791&ArticleID=10906&l=en>.

¹⁴⁰ UNODC, "Globalization of Crime".

¹⁴¹ Vira, Ewing, and Miller.

¹⁴² UNODC, "Environmental Resources," http://www.unodc.org/documents/data-and-analysis/tocta/7.Environmental_resources.pdf. Vira, Ewing, and Miller.

resources to global markets through complex and interlinked networks. They penetrate institutions in the business community and in government, including those tasked with protecting wildlife. They coordinate through harvesting, trading, and transporting networks to subvert national and international laws and move the ivory and other wildlife products to market.¹⁴³ Harvesting networks are directed by a financier who can supply weapons and material to poaching parties. These individuals are often well connected politically, as evidenced by the near complete lack of trafficking convictions across Africa or Asia.¹⁴⁴ Harvesting networks can include poor villagers, park rangers, professional hunters, conservation authorities as well as large poaching gangs such as rebel groups or insurgents working under the direction of a financier.¹⁴⁵ Involvement by the political elite in poaching syndicates greatly increases the number of illegal kills and can directly contribute to high rates of poaching.¹⁴⁶

Once harvested, ivory enters one of many sophisticated transportation networks. Ivory is typically trucked to points of debarkation for consolidation and for containerization for shipment to the Far East. Transportation networks encompass a range of licit and illicit actors including professionals in the travel industry, 'conservation' professionals, attorneys, border agents, shipping clerks, businessmen, and government officials. These individuals provide services to criminal and terror networks to move illicit ivory from its point of origin to

¹⁴³ Julie Ayling, "What Sustains Wildlife Crime? Rhino Horn Trading and the Resilience of Criminal Networks," *Journal of International Wildlife Law & Policy* 16, no. 1 (2013).

¹⁴⁴ Vira, Ewing, and Miller.

¹⁴⁵ Ayling, "What Sustains Wildlife Crime? Rhino Horn Trading and the Resilience of Criminal Networks."

¹⁴⁶ Rosaleen Duffy and Freya A.V. St. John, "Poverty, Poaching and Trafficking: What Are the Links?," in *Evidence on Demand* (2013). Gao and Clark, "Elephant Ivory Trade in China: Trends and Drivers." Kahumbu et al.

destination.¹⁴⁷ These networks move ivory through the blackmarket as they would other illicit goods such as weapons, drugs, minerals, or counterfeits.¹⁴⁸ Trading networks further involve a wide range of actors, intersecting with other illicit networks including weapons, human smuggling, and the illicit traffic in minerals. Criminal gangs trade weapons and cash with insurgents and terrorists for ivory.¹⁴⁹ ¹⁵⁰ ¹⁵¹ In this way they supply armed groups with more weapons and material used both to sustain conflict and poaching activities.¹⁵² The emergence of armed groups as players in the international SES further complicates solution sets by adding a national security dimension to governance challenges. At the consumer end in China and other Asian destinations illicit ivory may be laundered into the legal system through trading networks or carved in black-market factories owned and operated by ivory trafficking networks.¹⁵³

Organized criminal networks are the physical manifestation of conceptual linkages between remote landscapes and wildlife in Africa and the international markets decimating them.

¹⁴⁷ John Rollins and Lian Sun Wyler, *Terrorism and Transnational Crime: Foreign Policy Issues for Congress*, (Washington, DC: United States Congressional Research Service, 2013), <http://www.fas.org/sgp/crs/terror/R41004.pdf>.

¹⁴⁸ Vira, Ewing, and Miller.

¹⁴⁹ IFAW, "Criminal Nature: The Global Security Implications of the Illegal Wildlife Trade".

¹⁵⁰ Ibid.

¹⁵¹ Elliot, Lorraine. 2012. "Fighting transnational environmental crime." *Journal of International Affairs*, 66:87-104.

¹⁵² Jasparro.

¹⁵³ Vira, Ewing, and Miller.

Shifts in Governance and Usage Patterns

After years of inaction, threats at the international level of the SES have begun to drive change in both usage patterns and governance systems across the SES, with impacts trickling down to lower tiers across the system. Shifts in governance reflect what may be a movement towards new management structures, which more closely combine and coordinate governance authority across a variety of actors at multiple levels.¹⁵⁴ These shifts can be attributed to greater awareness of SES dynamics and the global scale over which these dynamics occur.

Non-Governmental Organizations and the Management of Wildlife Resources

International NGOs play an increasingly important role in the governance of wildlife resources, augmenting formal governance structures across levels of the SES. NGOs play a key role in raising awareness on wildlife issues and in establishing an agenda at the international level focused on coordinated action to halt the transformation of the international SES and to protect specific local SESs. Their efforts are gaining in momentum and achieving important goals, in particular as regards Chinese consumption of ivory and attitudes embedded within the Chinese government.

¹⁵⁴ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

International conservation NGOs provide further physical manifestations of the global interconnectedness of wildlife areas and international consumers and users of wildlife resources. They connect international consumers (non-consumptive) of wildlife resource users with the local populations across the global elephant SES through fund raising initiatives, local programming, and awareness raising campaigns. They exert influence both on state wildlife policies and on communities living near wildlife, holding a unique position of authority in the international community to set and shape wildlife agendas.¹⁵⁵ They coordinate internationally, join coalitions, and attempt to impact public opinion, shape international institutions, and influence international and national laws.¹⁵⁶

International wildlife NGOs shape awareness on wildlife issues by regularly conducting serious studies of wildlife populations and factors threatening them which are shared with states, released to global media outlets and are available freely online. NGOs conduct research and investigation, provide expert scientific and legal interpretations, perform monitoring services, and publish regular reports on environmental issues and surrounding circumstances to 'name and shame' authorities at multiple levels.¹⁵⁷ NGOs widely publicize important scholarly works focused on wildlife population dynamics, using hard data and science to underlie arguments for conservation. Some international conservation NGOs conduct surveys of elephant populations

¹⁵⁵ David Hewitt, "The Earth Times Asks: Are Conservation Groups Right to Prioritize 'Iconic' Species?," *Earth Times* (2012).

¹⁵⁶ Princen.

¹⁵⁷ Ibid.

to accurately report figures. Others examine ivory markets and explore drivers of the wildlife trade.¹⁵⁸

NGOs have successfully framed wildlife crime and the ivory trade as an important issue at the international level. For the past three decades NGOs have lobbied CITES to provide further protections for elephants and to reject bids for further one-off sales.¹⁵⁹ NGOs were instrumental in instituting the ivory trade ban in 1989. The lobbying efforts of EIA and the US based African Wildlife Foundation (AWF) brought attention to the elephant poaching crisis in the late 1980s and were instrumental in shifting public attitudes away from ivory purchasing.¹⁶⁰ A consortium of NGOs played a critical role in the Ivory Trade Review Group (ITRG) and its report on the devastating impact on poaching, submitted to CITES prior to its formal decision to halt the international trade.¹⁶¹ The report had a major impact on decisions by the US, the European Community, Switzerland, Australia, Canada, and the UK, which all announced full or partial ivory bans after its release.¹⁶² During the latest poaching crisis

¹⁵⁸ For example, the Amboseli Trust for Elephants in Kenya conduct surveys on elephant populations to determine the size of populations and to monitor the killing of elephants and other wildlife. The Born Free Foundation supports research into trade dynamics and factors which drive poaching. Barcode of Life provides expertise to investigate wildlife crime by conducting DNA analysis on seized animal parts. See www.elephanttrust.org, <http://www.bornfreeusa.org>, and <http://www.barcodeoflife.org>.

¹⁵⁹ Save the Elephants, Annual Report 2009-2010, (2010), http://savetheelephants.org/wp-content/uploads/2014/01/STE_2010%20DONOR%20REPORT%20FINAL%20Save%20the%20Elephants.pdf.

¹⁶⁰ Duffy, "Global Environmental Governance and North–South Dynamics: The Case of the Cites."

¹⁶¹ CITES, "Interpretation and Implementation of the Convention: Trade in Ivory from African Elephants: Ivory Trade Studies," (9-20 October 1989), <http://www.cites.org/sites/default/files/eng/cop/07/doc/E07-22.pdf>.

¹⁶² Duffy, "Global Environmental Governance and North–South Dynamics: The Case of the Cites."

NGOs spotted trends in wildlife crime before CITES or range states recognized either the scope or the scale of the crisis, in some cases as early as 2000.¹⁶³

In recent years investigative reporting by NGOs uncovered the link with terrorism and insurgency, the militarization of poaching, and the role corruption plays in facilitating the trade.¹⁶⁴ In many cases without NGO reporting to supplement CITES reports little substantive research would exist. Key international wildlife scholars and NGOs began raising the alarm about the increase in elephant poaching while CITES research and analysis arms continued to claim poaching had not increased as a result of the first one-off sale. For example in 2007 scholars argued ivory from over 37,000 elephants was entering the market each year, years before a poaching crisis was acknowledged by CITES.¹⁶⁵ According to Princen, “NGOs appear to be key actors in moving societies away from current trends in environmental degradation and toward sustainable economies.”¹⁶⁶

Increased Awareness of the Globality of the SES

Increased awareness of the interconnected nature of the SES and the “planetary consequences” of resource use decisions is beginning to influence Chinese governance policies on the utilization of ivory resources as well as the

¹⁶³ Environmental Investigation Agency, "Back in Business: Elephant Poaching and the Ivory Black Markets of Asia," (2012), <http://www.eia-international.org/wp-content/uploads/Back-in-Business-2002.pdf>.

¹⁶⁴ Vira, Ewing, and Miller.

¹⁶⁵ Morell, "Elephants Take Center Ring at Cites."

¹⁶⁶ Princen, 11.

actions of individual resource users.¹⁶⁷ Ostrom argues that communities no longer need to be small or physically co-located to monitor each other's activities, that the internet, communications technology, and other aspects of globalization, has not only created larger communities but also contains the mechanisms by which individuals can hold others within the SES accountable for overusing resources.¹⁶⁸ Until this period, resource users and the governance system had failed to recognize or acknowledge important scale and level interactions, i.e. the link between increased demand and the impacts of over-harvesting at a high rate over a short period.¹⁶⁹

Evidence suggests Chinese government and consumer attitudes may be changing away from a preference for utilization and consumption of ivory, due in large part to the work of international NGOs which have been increasingly successful in linking transnational environmental crime and its lasting impacts on wildlife and communities with government policies and individual decisions to consume wildlife products. After intense lobbying by IFAW and other international wildlife NGOs in 2011, China adjusted laws on the illegal wildlife trade, and shut down live auctions of raw ivory,¹⁷⁰ thought to be a major market for poached

¹⁶⁷ Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research," 310.

¹⁶⁸ Ostrom et al., "Revisiting the Commons: Local Lessons, Global Challenges," 279.

¹⁶⁹ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

¹⁷⁰ Grace Ge Gabriel, "Chinese Trading Ban Sees Huge Decrease in Endangered Species Auction Sales," (4 September 2013), <http://www.ifaw.org/united-states/news/chinese-trading-ban-sees-huge-decrease-endangered-species-auction-sales>.

tusks, in addition to participating in some international level law enforcement actions aimed at illicit wildlife trafficking.¹⁷¹

In light of the global nature of the ivory market, and the unsustainable level of demand demonstrated by users in China and other Asian states, international NGOs place a particular focus on reducing demand for wildlife products. Demand reduction strategies in China attempt to link iconic African species with iconic Chinese species to alert consumers of the impact of their choices through familiar imagery. Wild Aid is spreading their ivory demand reduction message- “When the buying stops, the killing can, too” across China, reaching a billion people per week.¹⁷² The International Fund for Animal Welfare’s (IFAW) “Mom, I got teeth” campaign, which depicts a baby elephant telling his mother about his tusks, was seen by 75% of urban Chinese.¹⁷³ Strong and effective demand reduction programs can create a norm against use and inculcate a zero tolerance norm for any consumption. These campaigns clearly link Chinese consumer behavior with the survival, or disappearance, of iconic species. Evidence suggests Chinese attitudes are shifting on ivory as a result of such campaigns.¹⁷⁴

NGO appeals aimed at the Chinese government are two pronged, at once highlighting China’s role as an emerging world leader and focusing attention on the immediate impact the Chinese can make in stopping poaching and shaming

¹⁷¹ CITES, "Operation Cobra II Press Release: African, Asian and North American Law Enforcement Officers Team up to Apprehend Wildlife Criminals," (10 February 2014), http://cites.org/sites/default/files/eng/news/sundry/2014/operation_cobra_ii_pr.pdf.

¹⁷² WildAid, Annual Report 2013, (San Francisco: WildAid, 2013), http://www.wildaid.org/sites/default/files/resources/WildAid_Annual_Report_2013_Final_Low-Res.pdf.

¹⁷³ Grace Ge Gabriel, "Promoting Animal Welfare in China," (11 August 2010), <http://www.ifaw.org/united-states/node/2485>.

¹⁷⁴ "With a New Year in China Comes a New Campaign".

the country in the international media for failure to take substantive action.¹⁷⁵ After intense lobbying and local recruitment of Chinese elites, NGOs have been successful in pushing the government to enforce some laws against trading in endangered species which appear to have impacted levels of poaching in Africa, though poaching continues to occur at unsustainable levels.¹⁷⁶ In 2011 China began strictly enforcing sales of ivory at 'grey market' auctions. This action had an immediate impact on sales and prices of ivory, which dropped by 20-30%. The ban limited liquidity in the ivory market, removing some incentive to invest and speculate in ivory.¹⁷⁷ In 2014 the government implemented changes in its wildlife protection laws to make it illegal to knowingly consume or purchase poached wildlife.¹⁷⁸

Prosecutions for wildlife crimes, though still low, are increasing in China, with the maximum penalty of life in prison for wildlife crimes. China increased local enforcement through the National Inter Agency CITES Enforcement Collaboration Group (NICECG) of China, which mobilized over 100,000 enforcement officers specifically focused on wildlife crime. It initiated both Operation COBRA I and COBRA II, large scale international efforts, to bust wildlife trafficking rings. The operations resulted in hundreds of arrests.¹⁷⁹

¹⁷⁵ Ibid.

¹⁷⁶ Wittemyer et al., "Illegal Killing for Ivory Drives Global Decline in African Elephants."

¹⁷⁷ Gao and Clark, "Elephant Ivory Trade in China: Trends and Drivers."

¹⁷⁸ Kathryn Myskens, "Pangolins, Tigers & Bears, Oh My! China Has a New Policy on Poaching," (6 May 2014), <http://www.elephantjournal.com/2014/05/pangolins-tigers-bears-oh-my-china-has-a-new-policy-on-poaching-kathryn-muyskens/>.

¹⁷⁹ Shannon Van Sant, "Operation Succeeds at Cracking Down on Illegal Wildlife Trade," in *Voice of America* (18 February 2003), <http://www.voanews.com/content/operation-succeeds-at-cracking-down-on-illegal-wildlife-trade/1605698.html>. CITES, "Operation Cobra li Press Release: African, Asian and North American Law Enforcement Officers Team up to Apprehend Wildlife Criminals".

Following an international trend, the Chinese government burned six tons of illegal ivory in January 2014. China has also stepped up aid to African governments battling poachers and increased efforts to educate Chinese migrant workers in Africa.¹⁸⁰

New Institutions to Address Segments of the SES

The efficacy of governance systems shifts over time. As Young notes, an institution that at one time operated effectively may later no longer serve the needs of the SES.¹⁸¹ Range states are adapting to weaknesses in the current governance mechanism by creating new institutions and adapting existing institutions to address wildlife issues. Shifts in how range states are interacting to adapt to perturbations in the SES are a reflection of the need to bolster governing authorities and perhaps realign jurisdictional scales to more closely correspond to regions and areas. These adaptations are meant to address a fundamental challenge of the global SES- the mismatch between levels of jurisdictional authority and enforcement capabilities inherent in a large international system. By scaling down governance structures from the entire international SES to discrete regional sections range states can focus not only on illegal trafficking of wildlife but on long term conservations strategies to sustain

¹⁸⁰ Fredrick Nzwili, "China Pledges \$10 Million in Support of Wildlife Conservation in Africa," in *National Geographic: A Voice for Elephants* (13 May 2014), <http://voices.nationalgeographic.com/2014/05/13/china-pledges-10-million-in-support-of-wildlife-conservation-in-africa/>.

¹⁸¹ Oran B. Young, "Institutional Dimensions of Global Environmental Change," vol. II, *Public Administration and Public Policy* (1999).

wildlife resources. Increasingly supra-state coordination on wildlife management within the resource system occurs through regional intergovernmental bodies, transfrontier park management authorities, and issue specific regional bodies focused on anti-poaching. These organizations do not provide further authority on the trade in species, but do play a role in promoting sustainable management practices of shared resources.

Range states are turning to existing bodies to enforce governance agreements on the conservation of the SES. The Southern African Development Community (SADC), the Economic Community of West African States (ECOWAS), and the Economic Community of Central African States (ECCAS) also encompass broad mandates to coordinate environmental policies within a framework of regional integration. These bodies generally establish common approaches to wildlife and land management across a region.¹⁸² Supra-state management authorities with specific mandates to conserve and protect wildlife resources are also emerging across the SES. Gabon, Cameroon, and the Republic of Congo coordinate in the TRIDOM, the Tri-national Dja–Odzala–Minkébé landscape, of the Western Congo Basin Moist Forest Ecoregion (WCBMFE). Cooperation in TRIDOM, formalized in 2005, includes a tri-national governance structure over seven total protected areas and over 20 million people.¹⁸³ A transfrontier park operates between Burkina Faso, Niger, and

¹⁸² Southern African Development Community, "Protocol on Wildlife Conservation and Law Enforcement," (1999), http://www.sadc.int/files/4813/7042/6186/Wildlife_Conservation.pdf. "Tanzania Calls for Intl' Ban on Ivory, Rhino Trade," in *World Bulletin* (16 October 2014), <http://www.worldbulletin.net/world/146364/tanzania-calls-for-intl-ban-on-ivory-rhino-trade>.

¹⁸³ World Tourism Organization, "Report of the Donors Conference for the Funding of the "Regional Project for Sustainable Tourism Development in a Network of Cross Border Parks and

Benin.¹⁸⁴ Greater Virunga Transboundary Collaboration, made up of parks in three countries, spans Uganda, Rwanda, and the DRC.¹⁸⁵ Tanzania and Kenya share the Amboseli- West Kilimanjaro and Natron- Magadi landscape where they coordinate to conduct periodic aerial censuses.¹⁸⁶ The Tanzania-Kenya borderlands span 16 protected areas ranging from Serengeti-Mara to Tsavo-Mkomazi and support the largest bushed savanna elephant population in Africa. Further, in 2012 the East African Community Transboundary Ecosystems Management Act sets up a commission to oversee the conservation and sustainable development of important East African trans-border ecosystems.¹⁸⁷ Several trans-frontier parks exist in Southern Africa, the largest being the Greater Limpopo Trans-Frontier Park stretching between South Africa, Mozambique, and Zimbabwe.¹⁸⁸ Other trans-frontier parks exist across the continent. Cross-border agreements include strategies to address environmental degradation, anti-poaching, tourism development, land use strategies, and other issues which transcend physical borders and threaten SES performance.¹⁸⁹

Protected Areas in West Africa", (2011),

http://www2.unwto.org/sites/all/files/pdf/report_of_the_donors_conference__eng.pdf.

¹⁸⁴ Adam Ive, "W National Park: The 3 Nations Trans-Border Park," in *Goista.com* (2 December 2013), <http://goista.com/w-national-park-the-3-nations-trans-border-park/>.

¹⁸⁵ Wildlife Conservation Society, "Greater Virunga Landscape," <http://www.wcs.org/saving-wild-places/africa/greater-virunga-landscape.aspx>. Simon Musasizi, "Greater Virunga up for Cross-Border Tourism," in *The Observer* (19 October 2011), http://www.observer.ug/index.php?option=com_content&view=article&id=15520%3Agreater-virunga-up-for-cross-border-tourism&Itemid=96.

¹⁸⁶ "Kenya and Tanzania Start Joint Wildlife Census in Amboseli," in *Kenya Wildlife Service* (8 October 2013), <http://www.kws.org/info/news/2013/8jointcensus2013.html>.

¹⁸⁷ African Conservation Centre, *Conserving Elephants in the Tanzania-Kenya Borderlands: Forging a Collaborative Approach - Workshop Report*, (Arusha, 16-17 February 2012: African Conservation Centre, 2012), <http://www.conservationafrica.org/index.php/news/126-conserving-elephants.html>.

¹⁸⁸ "Great Limpopo Transfrontier Park Collaboration to Counter Poaching," in *Peace Parks Foundation* (18 December 2014), <http://www.peaceparks.org/tfca.php?pid=19&mid=1005>.

¹⁸⁹ Republic of South Africa Department of Environmental Affairs, "South Africa and Mozambique Sign Memorandum of Understanding in the Field of Biodiversity, Conservation and Management,"

Other important international initiatives instituted by range states revolve specifically around the increased threats to wildlife and poaching. The 1996 Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora, includes states in Central, East, and Southern Africa.¹⁹⁰ The agreement facilitates cooperation amongst the states for investigations of wildlife crimes and was integral to the success of the international police action, COBRA II.¹⁹¹ In 2013 Botswana hosted the *African Elephant Summit* to gather leaders of African states and wildlife experts to discuss urgent measures required to stem the growing illegal ivory trade and its impacts on elephant populations in Africa. Attending states adopted 14 'urgent measures' to contribute to elephant survival. The measures presented ivory poaching as a national security priority.¹⁹² That same year ECCAS adopted an Extreme Emergency Anti-poaching Plan (PEXULAB) to combat poaching.¹⁹³ Under the plan member states created an inter-state coordination mechanism for the fight against poaching and urged individual countries to create national units

https://www.environment.gov.za/legislation/international_agreements/sa_mozambique_sign_mou. "Agreements Signed to Strengthen Anti-Poaching Efforts," in *Peace Parks Foundation* (22 April 2014), <http://www.peaceparks.org/news.php?pid=1365&mid=1400&lid=1021>. Global Environment Facility, "Project Brief: Conservation of Transboundary Biodiversity in the Minkebe-Odzala-Dja Inter-Zone in Gabon, Congo, and Cameroon," (2004), http://www.thegef.org/gef/sites/thegef.org/files/gef_prj_docs/GEFProjectDocuments/Biodiversity/Regional%20-%20Conservation%20of%20Transboundary%20Biodiversity-%20%20Minkebe%20zone/4-9-04%20Project%20Brief%20TRIDOM%20v60404.pdf.

¹⁹⁰ The agreement is between the Republic of Congo, Kenya, Liberia, Tanzania, Uganda, Zambia, Lesotho, South Africa, Ethiopia and Swaziland.

¹⁹¹ Lusaka Agreement Task Force, "Ivory Smuggler Arrested During Operation Cobra II to Serve 20 Years in Tanzania," (21 March 2014), <http://lusakaagreement.org/?p=604>.

¹⁹² International Union for Conservation of Nature, "African Elephant Summit, Gaborone, Botswana, 2-4 December 2013: Urgent Measures," (3 December 2013), https://cmsdata.iucn.org/downloads/african_elephant_summit_final_urgent_measures_3_dec_2013_2.pdf.

¹⁹³ The 10 signatories to the PEXULAB are Burundi, Cameroon, Chad, Central Africa Republic, Equatorial Guinea, Republic of Congo, Democratic Republic of Congo, Gabon, Rwanda and São Tomé e Príncipe.

involving all the administrations involved in wildlife criminality. Cameroon, Central African Republic and Chad agreed to develop a mixed operational unit to fight poaching, conduct joint patrols, focus more on investigations, improve intelligence gathering and utilization.¹⁹⁴ In 2014 Tanzania hosted the Regional Summit to Stop Wildlife Crime and Advance Wildlife Conservation, a forum primarily focused on transnational wildlife crime in the region.¹⁹⁵

In most instances cooperative agreements are in the nascent stages of development and have not yet proven effective at stemming the illegal ivory trade or poaching, or in achieving consensus amongst states on the viability or desirability of a legal ivory trade. However, they signify a willingness and interest in addressing perturbations holistically and in coordination in the near term outside of CITES mechanisms, an important shift not evident in other international institutions. These organizations offer the potential to operate as an important vehicle to address perturbations at the regional trade level where policies can be crafted to address specific threats on an appropriate time-scale.

¹⁹⁴ Godlove Bankong, "Cameroon: Eccas Gets Emergency Combat Strategies for Elephant Massacre," in *AllAfrica.com* (24 March 2013), <http://allafrica.com/stories/201303252000.html>. Gaia Vince, "Central African Nations Launch Joint Initiative to Tackle Poaching," in *The Guardian* (26 July 2012), <http://www.theguardian.com/environment/2012/jul/26/central-african-nations-poaching>. Extreme Emergency Anti-Poaching Plan (PEXULAB) operates in the northern region of Cameroon, Chad and the northern and north-western regions of the Central African Republic and in the forest zone.

¹⁹⁵ "Tanzania: Regional Summit to Stop Wildlife Crime and Advance Wildlife Conservation Ongoing in Arusha," in *AllAfrica.com* (7 November 2014), <http://allafrica.com/stories/201411071469.html>.

Social-Ecological System Performance

Ostrom notes the social performance of an SES can be described through a variety of terms such as accountability, efficiency, and equity. In the African elephant SES the social performance- the performance of the human components of the SES- can be described as lacking accountability and equity. The system is inefficient and slow, and operates as a de facto open access system.

Accountability refers to whether “the central actors can to some extent be held responsible” for actions impacting the SES.¹⁹⁶ At the international level the primary resource users, states and transnational criminals, have not been held accountable by CITES for the transformation of the global SES. CITES has not held itself accountable for its failure to uphold the precautionary principle and the increase in poaching across Africa related to the increased demand and the ‘one-off sales.’ As an international authority on wildlife trade, CITES retains the institutional authority to shape international opinion on the ethics and viability of international trade in species. However, the organization has not asserted that authority to effectively shift norms around elephant conservation, instead opting to defer to technical definitions and mandates in the treaty.¹⁹⁷

At tiers nested below the international level range states and consumers cannot agree on the existence of an existential threat to elephants within the SES

¹⁹⁶ M. A. Janssen et al., "A Network Perspective on the Resilience of Social-Ecological Systems," *Ecology and Society* 11, no. 1 (2006).

¹⁹⁷ "Cites and Confiscated Elephant Ivory and Rhino Horn - to Destroy or Not Destroy?," in *African Indaba* (December 2014), <http://www.africanindaba.com/2014/11/cites-and-confiscated-ivory-and-rhino-horn-to-destroy-or-not-destroy-december-2014-volume-12-6/>.

and have failed to craft a plan of action. Even in the midst of a poaching crisis range states fail to bolster or enforce laws protecting wildlife, invest in wildlife conservation and in measures to protect future economic gains related to wildlife viewing. While range states have expressed a willingness to create and join regional organizations devoted to coordinated action to protect wildlife, and have participated in the organization and running of conferences devoted to raising awareness on threats to wildlife, few concrete outcomes can be tracked. Consumer states in Asia have begun to address wildlife crime as a serious issue, however continue to value cultural interpretations of the utility of wildlife and rely on range states to bare the greatest burden of enforcement. Of the stakeholders identified within the governance system, international NGOs have accepted the greatest responsibility in investigating wildlife crimes and shifting consumer and government behavior.

The governance system and licit resource users have proven inefficient in addressing threats to the SES. Coordinated action at the international level only rarely occurs and does so on a slow schedule not accordant with the pace of destruction within the ecosystem. Information is not effectively gathered or shared across the SES, limiting the ability of policy makers to scope perturbations in the system or to craft policies to address effectively the perturbations. Funding to protect wildlife consistency fails to reach needed levels. CITES' seeming acephalous organization, political wrangling in the CoPs, over-reliance on unreliable scientific metrics, and inability or unwillingness to enforce sanctions on states not in compliance with the treaty limit the Convention's ability

to fulfill its mandate and quickly address wildlife crime. The Convention has not adequately addressed the increase in illicit trade, and has even continued to pursue the development of a mechanism to regulate a legal trade in ivory. African range states, despite the development of cross-border mechanisms, also fail to address international trade and have not effectively addressed the illegal trade outside of Southern Africa. And even there, poaching rates have increased and are expected to increase further in the coming years in the absence of more meaningful controls put in place, and as resources are poached out in the rest of the continent.

As currently functioning the SES is not equitably structured in terms of apportioning benefits or costs. The range states bear the greatest cost in both economic, environmental, and security costs related to the loss of wildlife. The removal of elephants and other wildlife limits the ability of states to attract tourism, a major income earner and job creator. Impacts on the environment may be far reaching as elephants play an important role in dispersing seeds, excavating waterways for other animals, and checking the expansion of forest into grasslands and savannahs. Aside from reputational costs, consumer states and individuals within them enjoy the continuation of cultural traditions which left unhindered may have died out along with high pecuniary returns.

Ecological performance measures relate to how the resource system and resource units react to interactions with the governance system and resource users. Overharvesting, the unsustainable off-take of wildlife, characterizes the ecological performance of the African elephant global SES. The resource system

could easily support more dense populations, in particular in forested areas of Central Africa and in the savannahs of eastern Africa.

The inability to adequately control trade at the international level through CITES, and the attendant increase in demand that accompanied the 'one-off' sales in 2002 and 2008, are transforming the global SES. Without adaptation at the international level, begging to occur, elephants will be locally extirpated across much of their range.

Conclusion

This chapter demonstrates that interactions between endogenous and exogenous processes contribute to explanations of both vulnerability and resilience of the African elephant SES. Both actions of international resource users and range states weaken the ability of an essentially open access system to combat illicit resource use. The chapter identifies important scale and level dynamics impacting the ability of the system to respond to perturbations at the international level, as well as revealing how collective action dilemmas impact the ability of the SES to effectively respond to perturbations.

Several scale challenges are identified. First, as Cash notes, is the jurisdictional/geographical mismatch between levels and scales in the SES.¹⁹⁸ Mechanisms at the international level lack enforcement capabilities, these deficiencies are mirrored at the tiers nested below in state enforcement systems.

¹⁹⁸ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

As a result, the scale of criminal activity has not been met with an attendant increase in capacity for enforcement. Again, these failures are mirrored and repeated at tiers below the international SES. Laws restricting trade are essentially unenforced at all levels. A second scale challenge emerges from institutional challenges over the funding required to fully address the illicit trafficking in ivory and the funds available. Neither the governance systems involved nor non-consumptive resource users adequately fund measures to protect wildlife from the current scale of exploitation. Third, the value/knowledge mismatch, what Ostrom refers to as a cultural diversity challenge, create conditions in which actors' favor their own preferences for usage despite outcomes to the system.¹⁹⁹ As a result CITES as an international governance authority is limited in its ability to protect species by lack of consensus amongst parties on the political, economic, and cultural valuations of endangered species. Related is the mismatch between scale of resources required to satisfy the market and those available. The ecosystem is clearly not capable of meeting the demands of the market and remaining resilient, or possible even extant.²⁰⁰ These scale mismatches are complicated by the collective action dilemmas apparent within CITES and amongst range states. Their inability to achieve consensus on the desirability and viability of a continued ivory trade impact the ability to identify or address problems of illicit resource use and overexploitation of resources. In the absence of effective rules and regulations the system operates as an open access system, with the potential for transformation.

¹⁹⁹ Ostrom et al., "Revisiting the Commons: Local Lessons, Global Challenges," 279.

²⁰⁰ Cumming et al., "Resilience, Experimentation, and Scale Mismatches in Social-Ecological Landscapes."

This chapter demonstrates how globalization acts as a central feature of SESs because of impacts on the resilience and vulnerability of systems.²⁰¹ As concatenations increase between the SES and global markets the system has become larger, includes more resource users with varying norms and history of use, adding uncertainty and complexity to the system.²⁰² Globalization, increasing speed of interactions, increasing the flow of information, facilitating global travel and trade, allows for the faster depletion of resources and the amplification of 'mismatches' between levels of governance and scope and scale of resource use across the system. As in the past, the current SES, at every level of analysis, exists within the context of the global political economy and cannot be conserved without reference to dynamics at play at multiple levels.

In the absence of effective mechanisms to adapt to the increased level of perturbations across the system, the international African elephant SES could transform uncontrolled, shrinking and shifting to a more geographically limited space in Southern Africa. Currently the level of harvesting and the decimation of local SESs nested below the international level are severally impacting the resilience of local systems and that of the whole. Adaptation in response to these threats has not occurred on the temporal scale necessary to halt the change at the international level.

Because human actions dominate SESs, adaptability in a system is a function of the individuals and groups managing that system across levels. As a nested and tiered system, governance authorities below the international level

²⁰¹ Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research."

²⁰² Ibid.

affect both local SESs and the international SES. The following case studies will examine how three states- Kenya, Tanzania, and Botswana- are adapting their SESs' to meet the challenges facing their national SESs in the context of perturbations across the entire social-ecological system.

CHAPTER 5

KENYA

Problem Statement

In 2014 after multiple gruesome poaching incidents within Kenya, the nation's media and international NGOs called on the Kenyan government and wildlife management authorities to declare poaching a national disaster.¹ Conservationists shaped the issues facing Kenya's social-ecological system (SES) as a poaching crisis on par with what Kenya experienced in the 1980s, when continent wide about 100,000 elephants were poached each year.² This simplistic assessment of perturbations facing Kenya's SES ignores entirely other key factors transforming Kenya's SES, as well obfuscates Kenya's role as a trafficking hub in the international level social ecological system. Applying the social ecological systems framework (SESF) reveals that Kenya's SES is exposed to "multiple, interacting perturbations,"³ facing threats across levels and scales of the SES and from various users and practices. Combined these threats, if not addressed, could transform the Kenyan SES in an uncontrolled fashion while continuing to degrade the international level SES.⁴ These perturbations relate not only to Kenya's position within global ivory markets as a

¹ Gilbert Koech, "Kenya: Declaring Poaching National Disaster 'Won't Kill Tourism'," in *AllAfrica.com* (12 September 2014), <http://allafrica.com/stories/201409121220.html>.

² Agence France Press, "Kenya Elephant and Rhino Poaching Crisis a 'National Disaster'," in *RawStory.com* (19 March 2014), <http://www.rawstory.com/rs/2014/03/kenya-elephant-and-rhino-poaching-crisis-a-national-disaster/>.

³ Gallopin, "Linkages between Vulnerability, Resilience, and Adaptive Capacity."

⁴ Walker, "Resilience, Adaptability and Transformability in Social–Ecological Systems."

trafficking hub and source for ivory, but also stem from legacy conservation and land management laws and policies which have proven inadequate to address threats, and in some cases exacerbated threats, to the SES.

Kenya's primary role in the international SES relates to its emergence as an international ivory trafficking hub. Criminal networks link SESs in Central Africa to global markets through Kenya. Mombasa is considered the continent's most important ivory trafficking hub.⁵ Kenya's weak laws, lack of enforcement, and connectivity to global shipping enable illicit traffickers and users.⁶ Corruption and mismanagement within the KWS exacerbate the problem further, allowing criminals within the wildlife establishment, in the political sphere, and powerful businessman deeply involved in the wildlife trade to continue operating even in the face of growing international scrutiny.⁷ Poaching of wildlife within Kenya creates another layer of threat to the SES. Reportedly, around 500 elephants are officially reported poached each year, though the number could be far higher.⁸ However illegal killing has not reached the scope or scale which could threaten SES transformation outside of other factors, as in Central Africa or Tanzania.

The greatest threat to Kenya's national SES likely resides at tiers below the international and national level SES, with deep roots in colonial era conservation and land use policies. Local resource users within the system are in

⁵ Vira, Ewing, and Miller.

⁶ Kahumbu et al.

⁷ Vira, Ewing, and Miller.

⁸ Paula Kahumbu, "Kenya's Biggest Elephant Killed by Poachers," in *The Guardian* (13 June 2014), <http://www.theguardian.com/environment/africa-wild/2014/jun/13/kenyas-biggest-elephant-killed-by-poachers>.

the process of shifting livelihood strategies, pursuing short term goals of resource maximization, which contribute to the fragmentation, degradation, and potential destruction of large swaths of the SES.⁹ In the absence of adaptive strategies, this transformation could lock the SES into new patterns. SESs shift into new systems when fundamental change occurs, like desertification, salination, or forest fire suppression at a large scale, or as in this instance, fencing, intensive agricultural practices, and intensive pastoralism.¹⁰ Current usage patterns are driven by the absence of national land use policies and effective wildlife management mechanisms which include participation of local communities in decision-making, undermining the resilience and adaptability of the Kenyan SES. Centralized national policy and postcolonial institutions have marginalized stakeholder participation in efforts to manage the SES and combat poaching. Since the colonial era, government policies have excluded local communities from the decision-making process and from the ability to enjoy economic gains from wildlife, undermining the development of conservation norms, and contributing to land use practices incompatible with conservation.¹¹ The open access nature of trust lands in particular have increased human-animal conflicts and undermined efforts to combat poaching. Subdivision of communal lands has further weakened ties between stakeholders as well as the ties of stakeholders to the SES. This undermines norms of caretaking for the SES. Together, these

⁹ Roselyn K. Okech, "Wildlife-Community Conflicts in Conservation Areas in Kenya," *African Journal on Conflict Resolution* 10 (2010).

¹⁰ Walker, "Resilience, Adaptability and Transformability in Social–Ecological Systems."

¹¹ Yeager and Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa*.

factors create strong incentives for stakeholders to overexploit the SES rather than conserve it.

Kenya has responded to perturbations in the resource system, both those related to long-term trends of land use, and shorter term upticks in poaching related to rising demand for ivory, by adapting resource governance through state mechanisms, primarily the Kenya Wildlife Service; revision of land use policies and land tenure regimes; and through the integration of non-governmental organizations (NGOs) across the spectrum of conservation. By updating wildlife laws and adopting land use reforms at the national level, the Kenyan government put in place structures to address all aspects of the challenge to Kenyans resources from overuse to illegal exploitation. Operating independently and in tandem with the government, NGOs bolster community support for conservation initiatives by acting as a force multiplier within wildlife dispersal areas, augmenting most of the services provided by the government. Through both the government's deliberative approach and the more ad hoc nature of NGO involvement, the SES may be able to avoid uncontrolled transformation. Adaptation of the governance system in Kenya has the further potential to impact the international SES by disrupting illicit trade routes and complicating the international traded decimating Central African elephant populations.

Following the SESF, this chapter first describes Kenya's resource system and units, highlighting the small size of Kenya's protected areas and the unique nature of its system, which depends on the ability of human and wildlife

populations to coexist. The following section examines the governance system in Kenya and key interactions between the state and resource users, which have, over time, contributed to the development of livelihood strategies not conducive to conservation. The following section examines the steps the governance system has undertaken to address threats to the SES, which, if successful, could guide the transformation of the SES at the national and local levels and decrease the role Kenya plays in degrading the international SES. The conclusion highlights the utility of the SESF in tracing patterns and processes that contributed to the development of the SES.

The Resource System and Resource Units

The small size of Kenya's protected areas, the fugitive nature of wildlife resources, and the unproductive character of the landscape in general present challenges to the management of the SES.¹² Compared to most other African countries, Kenya sets aside a relatively small portion of its landscape for conservation. Kenya's parks and game reserves occupy 7.5% of the country's landmass, a total of 43,673 km, almost entirely within areas known as arid and semi-arid landscapes (ASALs). Protected areas include 22 national parks, 28 national reserves, and five national sanctuaries, in addition to four marine national parks and six marine national reserves. At the same time, most of Kenya's wildlife exists outside of protected areas, in communally held lands and

¹² Patricia Kameri-Mbote, *Land Tenure, Land Use, and Sustainability in Kenya: Towards Innovative Use of Property Rights in Wildlife Management*, (Geneva: International Environmental Law Research Centre, 2005), <http://www.ielrc.org/content/w0504.pdf>.

private property, creating conditions under which conflicts between wildlife and humans are inevitable.¹³ Between 80-85%, live outside of the park system in wildlife dispersal areas within the ASALs, along with approximately 10 million people.¹⁴

The competition between human and wildlife populations is made more intense by the poor quality of the landscape. The ASALs are fragile environments, experience low and erratic rainfall, periodic droughts, and low organic content.¹⁵ Despite the poor quality of the land, human population densities remain high in the ASALs at 49.7 per sq/km, increasing each year through high birth rates and migration.¹⁶ This landscape is important to Kenya's indigenous people and communal landholders, in particular the Maasai, who depend on the landscape to preserve their livelihoods and culture.¹⁷

While nearly half of Kenya's total land area could sustain elephant populations fragmentation of habitats is increasing and accelerating as more people move into the ASALs, reducing the available resources for elephants and other wildlife.¹⁸ Habitat fragmentation is "the process by which habitat loss

¹³ Edmund Barrow, Helen Gichohi, and Mark Infield, "The Evolution of Community Conservation Policy and Practice in East Africa," in *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation*, ed. David Hulme and Marshall Murphree (Oxford: Oxford University Press, 2001). Redman, Grove, and Kuby, "Integrating Social Science into the Long Term Ecological Research (Lter) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change," 168.

¹⁴ Barrow, Gichohi, and Infield, "The Evolution of Community Conservation Policy and Practice in East Africa."

¹⁵ Kenya Land Alliance, "Land Use in Kenya: The Case for a National Land Use Policy," http://www.mokoro.co.uk/files/13/file/lria/kla_land_use_in_kenya_case_for_policy.pdf.

¹⁶ M. Norton-Griffiths, "The Survival of Wildlife on Kenya's Rangelands," in *National Symposium Wildlife Policy Legislation Review Process* (Nairobi2006).

¹⁷ Western, *In the Dust of Kilimanjaro*.

¹⁸ Moses Litoroh et al., "Conservation and Management Strategy for the Elephant in Kenya: 2012-2021," in *Kenya Wildlife Service* (2012),

results in the division of large, continuous habitats into smaller, more isolated remnants.¹⁹ These smaller and more isolated parcels, even with ideal localized conditions, are not as efficient as larger areas of contiguous habitats where elephants are free to roam. Elephants cannot successfully exist in small or confined areas because they will, with population growth, negatively impact resource availability.²⁰ Elephant habitat decreases and fragments everywhere human habitation increases.²¹ Intensive human use of the SES is also resulting in the loss of wildlife dispersal areas and migration corridors to agriculture and development, degradation, commercial and subsistence poaching, and human-wildlife conflict (HWC).²²

The primary contiguous elephant ranges still in existence include the northern coast, the Tsavo-Chyulu-Amboseli-Kilimanjaro complex, the Aberdare-Mt Kenya-Laikipia-Samburu-Northern Area complex, the Nguruman-Mara-Serengeti complex, and Nasolot-Romoi-Kerio Valley. Tsavo is Kenya's most famous wildlife area, home to the country's largest population of elephants.²³ Amboseli boasts the continent's longest studied elephant populations and is considered one of the best places in Africa to view elephants. The park was

http://www.kws.org/export/sites/kws/info/publications/strategies/Conservation_and_Management_Strategy_for_the_Elephant_in_Kenya_2012-2021.pdf.

¹⁹ Raphael K. Didham, "Ecological Consequences of Habitat Fragmentation," *eLS* (2010).

²⁰ Litoroh et al.

²¹ *Ibid.*

²² Okech, "Wildlife-Community Conflicts in Conservation Areas in Kenya."

²³ Catrina Stewart, "Elephant Appeal: Few Are Willing to Say Just How Bad the Poaching Crisis Is," in *The Independent* (2 January 2014),

<http://www.independent.co.uk/voices/comment/elephant-appeal-few-are-willing-to-say-just-how-bad-the-poaching-crisis-is-9035157.html>.

declared a UNESCO Man and the Biosphere Reserve in 1991.²⁴ Three key trans-frontier populations exist along Kenya's borders with Tanzania, Uganda, and Somalia.²⁵ The Tanzania-Kenya borderlands span 16 protected areas ranging from Serengeti-Mara to Tsavo-Mkomazi and support the largest bushed savannah elephant population in Africa.²⁶

The current poaching crisis is the second one to hit Kenya in the past forty years. From the 1970s until 1990 Kenya's elephant herds declined from 167,000 elephants to less than 20,000. In some areas the poaching epidemic depleted populations by as much as 85 percent.²⁷ The current crisis is not thought to include anywhere near the volume or proportion of illegally killed elephants, though actual numbers of both extant populations and the levels of poaching are in dispute. Kenyan government estimates place the current population of elephants at around 35,000 total, with only around 500 poached yearly. Conservationists argue the population hovers around 25,000, with potentially thousands killed in recent years.²⁸ Individual elephants in Kenya, some of the largest in the world, are targeted by organized gangs for their massive tusks, some operating transnationally and potentially connected with terrorist groups. Two of Kenya's most iconic elephants, Mountain Bull and Satao, were killed by poaching gangs within months of one another in 2014. Another elephant with

²⁴ Environment News Service, "Kenya's High Court Restores Amboseli to National Park Status," (15 November 2010), <http://www.ens-newswire.com/ens/nov2010/2010-11-15-01.html>.

²⁵ Litoroh et al.

²⁶ Amboseli Conservation Program, "New Threats to Amboseli and Mobilizing Responses," <http://www.amboseliconservation.org/uploads/3/7/4/8/3748244/newthreatsreport.pdf>.

²⁷ Stewart.

²⁸ Kahumbu, "Kenya's Biggest Elephant Killed by Poachers".

over 100 pounds of ivory so far has survived four separate attacks.²⁹ In one of the worst poaching incidents in the current epidemic, a Somali gang killed 11 elephants in Tsavo East national park in one episode.³⁰ Despite these events, the KWS has denied there is any wildlife decline, either through poaching or otherwise, despite clear evidence that as much as 30% of its wildlife in total has disappeared since 1985.³¹

In Kenya the domestic and international trade in elephant parts are proscribed, meaning the economic value to Kenya of its elephant population relates primarily to its tourism viewing value. Tourists travel to Kenya specifically to view the large free-flowing populations of animals, in particular elephants.³² At least 12 “hundred pounders,” elephants with tusks weighing over 100 pounds per side, live in Kenya.³³ Individual elephants can be major tourist attractions whose loss extends beyond the individual and can impact the community and the tourism industry generally.³⁴

²⁹ "Passing of a Giant: Death of an Elephant," in *The Guardian* (8 March 2014), <http://www.theguardian.com/environment/africa-wild/2014/mar/08/elephant-poaching-passing-of-a-giant>.

³⁰ Antonia Molloy, "Pregnant Elephant Speared to Death by Poachers in Kenya," in *The Independent* (22 March 2014), <http://www.independent.co.uk/news/world/africa/pregnant-elephant-speared-to-death-by-poachers-in-kenya-9209698.html>.

³¹ Jeremy Hance, "Kenya's Pain, Part Two: Decades of Wildlife Decline Exacerbated by Drought," in *Mongabay.com* (20 October 2009), http://news.mongabay.com/2009/1020-hance_kenya_two.html#ixzz3Prmva4Vm.

³² M. M. Okello, B. E. L. Wishitemi, and B. Lagat, "Tourism Potential and Achievement of Protected Areas in Kenya: Critical and Prioritization," *Tourism Analysis* 10 (2005).

³³ Tsavo Trust, "Kwaheri Satao - Saying Goodbye to a Tsavo Icon," (13 June 2014), <http://tsavotrust.org/news/2014/6/13/kwaheri-satao-saying-goodbye-to-a-tsavo-icon>.

³⁴ Daniel Muteti Kyale et al., "Modeling Poached Elephants Hotspots in Tsavo East National Park, Kenya," in *Recent Advances in Satellite Research and Development*, ed. Samuel Gardiner and Kenneth P. Olsen (Hauppauge, NY: Nova Science Publishers, 2013).

The Social System: Governance System and Resource Users

As the SESF literature suggests, examination of the social and political history of a resource system can reveal underlying dynamics, which drive current processes and patterns of governance and resource use.³⁵ The laws, rules, regulations, and investments a state makes for its resource system reflect the values held by decision makers and resource users within the system, with rippling impacts over time.³⁶ These dynamics are clearly illustrated in this case study. The governance system and resource users in Kenya interact within a system shaped and defined by colonial era policies centralizing state control of wildlife and restricting and limiting community input on wildlife utilization. These policies continue to inform local norms on wildlife as well as state legislation. In Kenya, the SES has been shaped by the interactions between the local indigenous Kenyans and colonial leadership; the post-Independence leadership; the conservation community, largely white and Western; and nongovernmental conservation organizations. These interactions have taken place over time within the context of a waxing and waning global ivory trade, currently on an upswing. The social systems have been slow to adjust, within formal structures, to changes within the SES related to social interactions including demographic shifts, changing land use and livelihood strategies, and increased illicit resource use. Colonial era policies and politics of conservation continue to impact

³⁵ Berkes, Colding, and Folke, "Introduction."

³⁶ Walker, "Resilience, Adaptability, and Transformability in the Goulburn-Broken Catchment, Australia."

conservation norms and the development of land use strategies, impeding adaptation of the SES to threats, natural and human.

Two primary legislative areas, wildlife conservation and land use, influence the decisions on conservation and development strategies within the SES which state and non-state organizations must either reconcile or work around to protect wildlife and habitats.³⁷ This section first narrates early conservation strategies in Kenya which continue to influence policies and norms on wildlife. It then briefly discusses concepts of land tenure and land use policy, central aspects of SES governance which impact both development and conservation decisions amongst Kenya's resource users. It also examines the governance structures, resource users, and important interactions impacting the health of the SES.

Colonial Era Governance

Kenya's current governance structure is rooted in colonial era wildlife policies, which ignored local SES dynamics in favor of central control of wildlife and wildlife management and the exclusion of local communities. From the earliest period of British colonial rule, government policies on wildlife operated from the notion that wildlife populations could be best preserved in the absence of human populations. Under colonial authority, wildlife was initially viewed as a nuisance not compatible with large scale agricultural enterprises. Wildlife, including now nearly extinct species, was regularly cleared from land prior to

³⁷ Kameri-Mbote. 2.

development. Colonial policies eventually developed to adopt a preservationist stance on wildlife which valued preserving species over economic utilization. In the late 1800s Kenya created its first wildlife reserve with the goal of protecting wild animals for future hunting.³⁸ These game reserves were created by removing indigenous peoples from their traditional rangelands. Maasai, Kikuyu, Kalenjin, Smaburu, and Pkot peoples, among others, suffered mass displacement as they were shifted onto their own “reserves” to make space for wildlife, as well as for large-scale European agriculture ventures.³⁹ Policies and practices established by the colonial authorities in the indigenous reserve system were incompatible with livelihood strategies and cultural practices, resulting in degradation of the landscape and chronic resource deficiencies for both human and wildlife populations.⁴⁰ Under British rule, all wildlife became the property of the Crown. All hunting by indigenous people was proscribed and no mechanism was created for local communities to utilize wildlife resources through non-consumptive means.⁴¹

By establishing the state as sole owner of wildlife, colonial authorities removed responsibility for conservation from local communities, ignored local epistemologies, including indigenous methods of conservation or conceptualizations of the relationships between wildlife and human communities, and damaged indigenous norms for conservation. These policies of exclusion

³⁸ Yeager and Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa*.

³⁹ Focus on Land in Africa, "Rise and Fall of Group Ranches in Kenya," <http://www.focusonland.com/countries/rise-and-fall-of-group-ranches-in-kenya/>. Lotte Hughes, "Rough Time in Paradise: Claims, Blames and Memory Making around Some Protected Areas in Kenya," *Conservation and Society* 5, no. 3 (2007).

⁴⁰ Yeager and Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa*.

⁴¹ Mungumi Bakari Chongwa, "The History and Evolution of National Parks in Kenya," *The George Wright Forum* 29, no. 1 (2012).

and displacement were continued in the post-independence period and removed important connections to wildlife, the sense of local responsibility to protect, and any potential to sustainably exploit wildlife within relevant local contexts.⁴²

At the end of the colonial period parks were the exclusive haunt of Europeans and settlers. Locals were excluded from decision-making and were not allowed to utilize wildlife resources. Early post-Independence policies sought to alter these realities, however, policies of centralization, state ownership of wildlife, and exclusion of local communities continued.⁴³

Land Use Legislation

Because Kenya's parks and reserves cover only a fraction of wildlife habitats, the land use strategies of those living in wildlife dispersal areas and government policies to guide those strategies have important implications for conservation. Two aspects of land use are relevant for wildlife management and conservation; land policy, and land use policy. Land policy relates to issues of legal ownership and tenure. Land use policy refers to rules and regulations established to protect land and water resources from degradation as a result of development or other utilization.⁴⁴

Land tenure in Kenya is rooted in colonial era policies and the indigenous reserve system, set up to remove indigenous people from more productive

⁴² Yeager and Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa*.

⁴³ Ibid. Hughes, "Rough Time in Paradise: Claims, Blames and Memory Making around Some Protected Areas in Kenya."

⁴⁴ Kameri-Mbote.

agricultural zones and wildlife areas. In Kenya, land tenure is classified as either public, private, or communal. Public land is held by the government and includes Kenya's protected wildlife parks and game reserves. Private land is held individually as property. By far, most land in Kenya is communally held Trust Land in areas formerly set aside as indigenous reserves under the colonial authority.⁴⁵ Nearly all of Kenya's protected areas and wildlife exist within Trust Lands.⁴⁶

Trust Lands consist of group ranches and conservancies as well as unincorporated and unregistered lands.⁴⁷ Nearly all of the pastoralists living in Northern and Eastern Kenya live on Trust Lands.⁴⁸ Group Ranches are the only legally recognized mechanism to manage land communally. Group ranches exist primarily in Maasai areas in Kajiado, Narok, and Amboseli, though they have spread to Laikipia and Samburu.⁴⁹ All of Kenya's communally held group ranches and about 50% of the total livestock population, representing millions of cattle, sheep, goats, and camels,⁵⁰ exist in the trust lands abutting Kenya's parks and game reserves.⁵¹ Conservancies can refer to a sanctuary on either private land

⁴⁵ Ibid.

⁴⁶ Barrow, Gichohi, and Infield, "The Evolution of Community Conservation Policy and Practice in East Africa."

⁴⁷ In Kenya membership in a group ranch is based on kinship and traditional land rights. See J. C. Ng'ethe, "Group Ranch Concept and Practice in Kenya with Special Emphasis on Kajiado District," <http://www.fao.org/wairdocs/ilri/x5485e/x5485e0t.htm>. Trust Land consists of areas occupied by native peoples in the pre-colonial and colonial era which have not been consolidated or registered under either individual or groups names and native lands not taken over by the government. Kameri-Mbote.

⁴⁸ Fred Nelson, *An Analysis of International Law, National Legislation, Judgements, and Institutions as They Interrelate with Territories and Areas Conserved by Indigenous Peoples and Local Communities: Report 3: Kenya*, (Bangladesh: Natural Justice, 2012).

⁴⁹ Kameri-Mbote.

⁵⁰ Ng'ethe.

⁵¹ Kenya Land Alliance.

or within a group ranch or trust land area managed for the purpose of wildlife conservation.⁵²

Over time trust lands have evolved into “open access” systems difficult to protect from predatory elites or to manage in a way conducive to conservation. Trust Land is managed by County Councils with legal requirements to consult communities in decisions dealing with land allocation. However, in practice these bodies exclude community members from decisions on resource and land management choices. As a result, communities possess “no rights to exclude outside users, to make and enforce land governance or allocation decisions, or to enter into third-party agreements pertaining to land use.”⁵³ Additionally, as noted below, no provisions within the wildlife law outline a framework for communities within trust lands to collectively develop wildlife conservation areas, limiting the potential for economic development related to wildlife tourism. The lack of protections for community rights and challenges associated with developing conservation programs drives land use practices that are often incompatible with wildlife conservation.⁵⁴

The second concept relates to land use policy. Land use policy deals with the management of land and natural resources aimed towards sustainable use, with tenure issues as secondary concerns. In Kenya, no national land use policy existed until 2009, leaving a multitude of statutes and acts to govern resource

⁵² Kenya Wildlife Service, "Policy on Establishment of Conservancies, Training and Management of County Reserve, Private and Community Rangers," (2010), http://www.kws.org/export/sites/kws/info/publications/community_wildlife_publications/ESTABLISHMENT_OF_CONSERVANCIES_TRAINING_OF_COMMUNITY_RANGERS_POLICY.pdf.

⁵³ Nelson. 18.

⁵⁴ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks." Nelson. Kamari-Mbote.

management through provisions in legislation dealing with agriculture, forestry, water, and other areas of land use. These statutes and acts are not only disparate, identifying multiple authorities across government to address land use practices in an uncoordinated fashion, but additionally often lack provisions on sustainable use of the environment or minimum requirements for biodiversity preservation. Where such provisions exist for sustainable use practices, they are largely ignored and/or unenforced.⁵⁵

In the absence of protections for communal land owners, or a national policy creating universally applicable standards and usage guidelines for environmental resources, protections for the SES are piecemeal and subject to arbitrary change.⁵⁶

Post-Colonial Wildlife Management

Post-colonial wildlife legislation attempted to redress past grievances and create a more inclusive governance authority. The first attempt in post-colonial Kenya to codify a national wildlife policy was a 1975 Sessional paper outlining a comprehensive wildlife management strategy.⁵⁷ The document moved away from solely preservationist policies of colonial Kenya, identifying the primary goal of

⁵⁵ Kenya Land Alliance.

⁵⁶ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks." Kimeri-Mbote.

⁵⁷ See Mona Doshi et al., "Land and Environmental Governance Related to Redd+ Implementation in Kenya," (2014), <http://www.4cmr.group.cam.ac.uk/filecab/redd-law-project/20140819%20BP%20Land%20and%20environmental%20governance%20related%20to%20REDD-%20implementation%20in%20Kenya.pdf>. "Sessional papers can be reports, or other documents that reflect on either the government's strategy, administrative guidelines or policy. While sessional papers are not law, they reflect what the government intends to create and implement as law."

wildlife conservation to optimize returns from wildlife through aesthetic, cultural, scientific, and economic gains. Economic gains were to accrue both from tourism and hunting. The policy noted the importance of the equitable disbursement of wildlife returns, and the provision of compensation for losses due to human wildlife conflict.⁵⁸ It identified the state and wildlife authorities as partners with communities abutting parks and reserves in the development of compatible land use strategies. In practice, however, the state retained central control of wildlife and largely excluded local communities from either decision making or revenue sharing.⁵⁹

The Wildlife Conservation Management Act (WCMS) passed in 1976 to implement the policy, creating the Wildlife Conservation and Management Department (WCMD) under the Ministry of Tourism to manage the state's parks.⁶⁰ Though initially it issued hunting licenses and allowed some limited trade in wildlife on private lands, that right was rescinded in 1977 under pressure from the international community concerned about uncontrolled poaching. The state again became solely responsible for the management of wildlife and all costs related to wildlife conservation.⁶¹ The WCMD managed the country's wildlife during the massive poaching epidemic of the 1970s and 1980s when Kenya lost 85 percent of its elephants and 97 percent of its rhinoceros. With

⁵⁸ Ibid., 60.

⁵⁹ Western, *In the Dust of Kilimanjaro*. Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks."

⁶⁰ Doshi et al. 60.

⁶¹ Kameri-Mbote.

revision to the 1976 wildlife law, the Kenya Wildlife Service (KWS) replaced the WCMD in 1989.⁶²

Current Governances Structures

Kenya's current governance structures, consisting of the Kenya Wildlife Service (KWS) and hundreds of non-government organizations, operate across the SES to protect the country's wildlife and promote sustainable development and conservation practices. However structural weaknesses in the KWS, weak wildlife laws, corruption and mismanagement within the KWS, structural barriers to the inclusion of local communities in conservation, and lingering distrust of conservation NGOs impact the effectiveness of conservation efforts. These issues are exacerbated by the continuing legacy of colonial wildlife policies, which relied on exclusion of local communities and a strict preservationist philosophy to create the nation's parks.⁶³

The KWS is the lead agency for the implementation of international conventions and domestic legislation aimed at conserving, protecting, and managing the country's wildlife across all lands, whether held publically, within the trust land system or privately.⁶⁴ The KWS carries out wildlife policies to include all functions related to running the country's protected wildlife areas, from manning gates and marketing Kenya's wildlife attractions to running community

⁶² Edmond Maloba Were, "The Domain of Authority and Sphere of Influence of Wildlife Conservation and Management Policy in Kenya," *Journal of Third World Studies* 22, no. 2 (2005): 232.

⁶³ Western, *In the Dust of Kilimanjaro*.

⁶⁴ Kenya Wildlife Service, "Overview - Partners," <http://www.kws.org/partners/index.html>.

education and development programs to enforcing wildlife crime legislation.⁶⁵ The service consists of multiple departments focused on conservation and management within protected areas; conservation and management in areas outside of protected areas; public awareness and education; regulation of the wildlife industry; and establishment, managing, and marketing of economically viable wildlife-based enterprises.⁶⁶ Their primary responsibility is the management of the country's parks and reserves, with important law enforcement functions including the reduction of poaching; security personnel and conservancy ranger training; and securing park borders, infrastructure, personnel, and visitors.⁶⁷

The KWS also plays a role in intelligence gathering, investigation and prosecution of wildlife crimes, and analysis of poaching and trafficking trends.⁶⁸ They work with other law enforcement agencies, including Customs, the national police, INTERPOL, the Lusaka Agreement Task Force, Kenya Airports Authority and Kenya Ports Authority, in addition to NGOs, conservancies, and community governments to enforce wildlife laws.⁶⁹ They monitor wildlife populations through PIKE and MIKE mechanisms as well as through independent research projects and biodiversity and habitat assessments.⁷⁰ Initiatives aimed at the reduction of poaching also involve large-scale operations to remove illegal grazers from parks

⁶⁵ Were, "The Domain of Authority and Sphere of Influence of Wildlife Conservation and Management Policy in Kenya."

⁶⁶ Kenya Wildlife Service, "Overview - Parks and Reserves," <http://www.kws.org/parks/index.html>.

⁶⁷ David Karanja, "The Role of the Kenya Wildlife Service in Protecting Kenya's Wildlife," *The George Wright Forum* 29, no. 1 (2012).

⁶⁸ *Ibid.*

⁶⁹ Kenya Wildlife Service, "Kenya Wildlife Service Statement on Status of Wildlife Conservation," (16 January 2013), <http://www.kws.org/info/news/2013/16jan2012wildlifesecuritypress.html>.

⁷⁰ "Overview - Parks and Reserves".

and wildlife dispersal areas, placing KWS rangers in situations of armed conflict.⁷¹ The KWS considers itself a strong advocate for wildlife issues generally. The organization lobbied the government for stronger laws and greater capacity within the judiciary and across agencies to bolster penalties for wildlife crime. It maintains a firm stance against the ivory trade and support the CITES ban.⁷²

Park management further includes all administrative functions, from manning gates to booking safaris and marketing wildlife programs and amenities. Community development projects, public awareness raising, and educational initiatives are core functions of the KWS.⁷³ KWS engages in community building projects both as a donor and as partner in revenue generating enterprises in tourist areas.⁷⁴ It is charged with addressing issues of human wildlife conflict.⁷⁵ It further bear responsibility for managing critical water catchments which provide the country's drinking water as well as its hydroelectric power. The KWS is responsible for 90 percent of safari tourism to Kenya and approximately 75 percent of the total tourism receipts. Tourism accounts for nearly 10 percent of Kenya's GDP and is the third largest earner after agriculture and manufacturing.⁷⁶

⁷¹ "Kenya Wildlife Service Statement on Status of Wildlife Conservation".

⁷² Julius Kipng'etich, "Laying the Foundation for Conservation of Kenya's Natural Resources in the 21st Century," *The George Wright Forum* 29, no. 1 (2012).

⁷³ Paul Mbugua, "Wildlife Conservation Education," *ibid.*

⁷⁴ Munira Anyonge-Bashir and Paul Udoto, "Beyond Philanthropy: Community Nature-Based Enterprises as a Basis for Wildlife Conservation," *ibid.*

⁷⁵ Paul Mbugua, "Wildlife Conservation Education," *ibid.*

⁷⁶ Paul Udoto, "Wildlife as a Lifeline to Kenya's Economy: Making Memorable Visitor Experiences," *ibid.*

Wildlife NGOs in Kenya, both native and international, are some of the strongest in Africa, and operate across the spectrum of conservation. The KWS lists over 100 other organizations at the local, regional, and international level as partners in caring for Kenya's wildlife. Reflecting more general international trends in the last two decades NGOs in Kenya moved from service delivery to "direct action, advocacy and involvement with setting government policy agendas and other political decision-making."⁷⁷ NGOs engage in a range of activities from awareness raising, education, monitoring of wildlife, intelligence gathering, anti-poaching, and infrastructure support. These groups augment the KWS by conducting education and awareness raising programs; funding emergency wildlife veterinarians; patrolling areas adjacent to parks; removing snares; and other services to aid wildlife and enforcement.⁷⁸ Some specialized NGOs focus on tracking wildlife criminals; assist with prosecutions; study trends in illegal killing; and contribute to investigation, intelligence, emergency management and data management.⁷⁹ NGOs operating outside of parks and reserves contribute to poaching arrests in addition to monitoring the landscape for snares, poison, and other illegal trapping and killing mechanisms.⁸⁰ NGOs are deeply involved in driving the development of community based natural resource management (CBNRM) schemes, in particular conservancies, over the past two decades. Conservancies operate in communal areas for the purpose of setting aside land

⁷⁷ M. Norton-Griffiths, "The Growing Involvement of Foreign Ngos in Setting Policy Agendas and Political Decision-Making in Africa," *Economic Affairs* 30, no. 3 (2010).

⁷⁸ Sheldrick Wildlife Trust, "A Monthly Report from the Dswt's Anti-Poaching Teams," (21 November 2014), <http://www.sheldrickwildlifetrust.org/updates/updates.asp?ID=749>.

⁷⁹ Karanja, "The Role of the Kenya Wildlife Service in Protecting Kenya's Wildlife."

⁸⁰ Some examples include the Amboseli Trust for Elephants and the David Sheldrick Wildlife Trust.

for wildlife conservation.⁸¹ Increasingly NGOs engage in direct payments to local peoples to augment human wildlife conflict compensation funds to conservation.⁸² NGOs link the local and national SES to the international information landscape, influencing opinion leaders in Kenya and internationally.⁸³

Challenges within Governance Authorities

Multiple issues challenged the ability of the governance system, both the KWS and NGOs, to react to perturbations within the SES including weak and largely unenforced wildlife crime laws; the lack of legislation supporting community conservation; structural weaknesses within the KWS; and distrust of conservation NGOs. Failures within the Kenyan governance system affect not only the health of the local SES and its subsystems, but also impact the ability of the international SES to respond to perturbations in the system.

Wildlife Legislation Failures

Until recent revisions, Kenya relied on the Wildlife Conservation Management Act (WCMA) passed in 1976 as the basis for all wildlife polices, including penalties to address illicit resource use and community management of

⁸¹ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks."

⁸² Jerome Starkey, "Kenya Finds Beef Recipe for Saving Wildlife," in *The Times* (14 February 2015), <http://www.thetimes.co.uk/tto/news/world/africa/article4353838.ece?shareToken=2c932fb04ac295033c8071de2bddd44a>.

⁸³ Norton-Griffiths, "The Growing Involvement of Foreign Ngos in Setting Policy Agendas and Political Decision-Making in Africa."

resources. The WCMA proved to be a weak mechanism for addressing the numerous threats to the SES in Kenya, with further implications for the health of the international SES as Kenya developed into a major trafficking hub for Central African ivory

Before revision to the wildlife law took effect in January 2014, in Kenya wildlife crime legislation was weak or unenforced, creating an environment of impunity for traffickers and poachers as well as opportunity for corrupt officials. Under the WCMA the application of penalties and fines for wildlife crime was not commensurate with the value of wildlife products.⁸⁴ Wildlife trafficking and other wildlife crimes were treated like low-level offenses or misdemeanors.⁸⁵ Few perpetrators served time in prison for wildlife crimes, including those involving high-value elephant and rhinoceros products. The law did not levy financial penalties commensurate with the value of wildlife products. Most arrests centered on low-level offenders and did not include kingpins, allowing for powerful players in the international trafficking of ivory to go unpunished.⁸⁶ In this climate of impunity, wildlife officials involved in poaching avoided all criminal penalties despite evidence of complicity in poaching and trafficking. Lack of investigative capacity and official acts of corruption hindered the ability of law enforcement or the judiciary to address adequately the scope or scale of wildlife crime.⁸⁷ Weak laws undermined actions by the KWS and NGOs working to

⁸⁴ Kahumbu et al.

⁸⁵ Save the Elephants, "Judging Wildlife," <http://savetheelephants.org/protection/judging-wildlife/>.

⁸⁶ Paula Kahumbu, "My Offer to Help Kenyan Authorities Catch an Ivory Kingpin Is Spurned," in *National Geographic: A Voice for Elephants* (13 August 2014), <http://newswatch.nationalgeographic.com/2014/08/13/opinion-my-offer-to-help-kenyan-authorities-catch-an-ivory-kingpin-is-spurned/>.

⁸⁷ Kahumbu et al.

safeguard wildlife in Kenya, and allowed the international trade through Kenya to flourish largely unhindered.⁸⁸

Though not at the level apparent in neighboring countries, both wildlife officials and law enforcement officials in Kenya engage in poaching and trafficking of wildlife. Considerable evidence suggests that high-level officials, including in the KWS, are tied to poaching and regional trafficking rings.⁸⁹ One ring is thought to control the entire rhino horn trade in Kenya and to be responsible for the mass killing of 11 elephants in Tsavo.⁹⁰ Members and former members of the KWS have been implicated in poaching rhino and elephants, hiring killers who use inside information to target animals. KWS officials have been accused of framing conservationists with the possession of ivory.⁹¹ Though not reflective of the numbers of officials involved, at least 17 KWS officials have been arrested for involvement in wildlife crimes since 2009,⁹² while other security forces are thought to take bribes to cover up illegal trophy hunting.⁹³ Police

⁸⁸ Ibid. Vira, Ewing, and Miller.

⁸⁹ Jason Straziuso, "Cartel inside Kenya Fueling Rhino, Poaching Deaths," in *Associated Press* (19 March 2014), <http://news.yahoo.com/cartel-inside-kenya-fueling-rhino-poaching-deaths-130559373.html>.

⁹⁰ Dann Okoth and Dennis Onsarigo, "Civil Servant Behind Rhino, Elephant Slaughter" in *The Standard Digital News* (27 March 2014), <http://www.standardmedia.co.ke/lifestyle/article/2000107970/civil-servant-behind-rhino-elephant-slaughter>.

⁹¹ Capital FM, "Kenya: Ivory Charges against Amboseli Conservationist Dropped," in *AllAfrica.com* (11 March 2014), <http://allafrica.com/stories/201403110608.html>.

⁹² John Muchangi, "Kenya: Kws to Probe Private Ranches over Poaching," *ibid.* (28 March 2014), <http://allafrica.com/stories/201403280441.html>.

⁹³ George Sayagie, "Private Resorts 'Aiding' Illegal Ivory Trade," in *Daily Nation* (27 March 2014), <http://www.nation.co.ke/counties/Narok-Poaching-Ivory-Trade-Wildlife-Security-Taskforce/-/1107872/2260426/-/kquchiz/-/index.html>.

officers have been arrested with ivory,⁹⁴ and have obstructed and interfered with arrests and investigations.⁹⁵

Another key weakness in the legislation was its failure to map out a framework to promote and protect community-based natural resource management (CBNRM) programs.⁹⁶ While recognizing community participation as a goal, and economic utilization as a key component of conservation, the legislation did not outline a clear path for community groups or private business owners to create conservation-based businesses on private land.⁹⁷ There is no legal definition for what a conservancy is in Kenya.⁹⁸ The KWS and conservation organizations could encourage community conservation of wildlife but offer no guarantees of state support.⁹⁹ In what Didi refers to as “silent devolution” communities created conservancies and sanctuaries in communal areas in the

⁹⁴ "Two Nairobi Police Officers Arrested with Ivory at a Thika Roadblock," in *The Standard Digital News* (3 May 2014), <http://www.standardmedia.co.ke/thecounties/article/2000110848/two-nairobi-police-officers-arrested-with-ivory-at-a-thika-roadblockc>.

⁹⁵ In one instance nearly three tons of ivory was seized in Kenya- police officials were accused of withholding the name of the owner to help him avoid persecution. In other instances police refused to raid ivory stashes. "Bosses' Protecting Ivory Smugglers, Claims Officer," in *Daily Nation* (6 June 2014), <http://mobile.nation.co.ke/news/Bosses-protecting-ivory-smugglers-claims-officer/-/1950946/2339818/-/format/xhtml/-/gioglj/-/index.html>. Police are accused of removing evidence against Faisal Mohammad, a notorious international wildlife trafficker based in Nairobi More cops summoned to court for evidence tampering. Mohammad was arrested in Tanzania after being placed on INTERPOLs most wanted list. "More Cops Summoned to Court for Evidence Tampering," in *Capital News* (24 December 2014), <http://www.capitalfm.co.ke/news/2014/12/more-cops-summoned-to-court-for-evidence-tampering/>.

⁹⁶ Kameri-Mbote.

⁹⁷ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks," 20.

⁹⁸ Nelson. 11.

⁹⁹ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks."

absence of any wildlife or protected area policy or law as not for profit companies, trusts, and community based organizations.¹⁰⁰

Other limitations of the wildlife legislation include a lack of compensation for victims of human wildlife conflict, with limits both on the levels of payments and restrictions on the circumstances under which individuals could request compensation. Human-wildlife conflict (HWC) refers both to injuries to humans caused by wildlife and to threats wildlife face during interactions with humans. Wildlife, in particular elephants, threaten human populations through crop raiding; environmental degradation; general insecurity to people; property destruction; injury and death to livestock; and injury and death to people.¹⁰¹ Human-wildlife conflict also refers to the opportunity costs to conservation or development, borne respectively by both humans and wildlife.¹⁰² The WCMA did not allow payments for infrastructure or crop loss, stoking the animosity of populations towards wildlife and feeding into the perception that the KWS and other conservation authorities cared more for wildlife than people.¹⁰³ The law failed to reduce human wildlife conflict.¹⁰⁴

Weak laws protecting wildlife and the lack of coordinated land tenure and land use policies limit the potential of state and non-state actors to coordinate

¹⁰⁰ Nelson. Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks," 20.

¹⁰¹ M. M. Okello et al., "Prevalence and Severity of Current Human-Elephant Conflicts in Amboseli Ecosystem, Kenya: Insights from the Field and Key Informants," *Natural Resources* 5 (2014).

¹⁰² The greatest threat to elephants from humans in Kenya is competition for critical resources, blocking of migration routes, harassment by people, poaching, and retaliatory killings. See: *ibid.*

¹⁰³ F. Lamarque et al., *Human-Wildlife Conflict in Africa: Causes, Consequences and Management Strategies*, (Rome: Food and Agriculture Organization of the United Nations, 2009), <http://www.fao.org/docrep/012/i1048e/i1048e00.pdf>.

¹⁰⁴ Republic of Kenya Ministry of Forestry and Wildlife, "The National Wildlife Conservation and Management Policy," (2012).

responses to perturbations in the SES. Instead, the absence of coordination has allowed for ad hoc responses to land use challenges to develop. The increased levels of poaching; clear mismatch between the level and number of wildlife crimes committed and convictions achieved; and the inability of the government to integrate, harmonize, and enforce land use policies to conserve wildlife and habitats necessitated revisions to the law.¹⁰⁵ While legislation passed to address land tenure and land use issues and to strengthen wildlife laws since 2009, as discussed below, the impacts of these shifts are not yet known.

Structural Weakness in the KWS

The wide range of responsibilities, which fall to the KWS stretch the ability of the service to ensure conservation goals are met. Poor management, weak capacity, and corruption within the KWS have at times limited the effectiveness of the service, with impacts for the domestic and international SES.

In its own publications the KWS identify problems in the organization to include high leadership turnover; corruption; loyalty to a person and not to the organization; poor reporting; information suppression; low staff morale; low revenue; tribal divisions among staff; low investment; lack of implementation of recommendations; low donor support as a result of mismanagement; lack of strategic leadership; poor governance systems; negative corporate image; lack of structure; and a feeling that NGOs have too much influence on the

¹⁰⁵ Kameri-Mbote.

organization.¹⁰⁶ Despite some initial success slowing the rate of illegal hunting in the 1990s, the KWS experienced a decade of high turnover and poor management at the highest levels, with 13 directors in 14 years, in addition to “low staff morale, lack of clear direction and a poor public image... (and) political interference, poor governance, inadequate management systems and structures, and low revenue occasioned by fraud.”¹⁰⁷ KWS rangers often lack basic necessities such as food, boots, fuel, weapons, and ammunition. In many cases poachers are far better equipped.¹⁰⁸ The KWS is supported almost entirely by ticket sales and foreign donations, despite its wide ranging mandate and contribution to the economy. KWS rangers are expected to patrol vast landscapes; monitor wildlife; address illegal grazing; and initiate and coordinate community development projects in addition to performing menial duties such as manning park entrances and performing administrative duties.¹⁰⁹ As noted above, KWS officials and others in the wildlife establishment have been involved in the domestic and international trafficking of ivory and elephant poaching.

A major failure of the Kenyan government and the KWS relates to their unwillingness to collect and share important information on the health of wildlife populations, or to publicly acknowledge the scope and scale of elephant population decline. Governance of the SES relies on effective monitoring of resources and resource use patterns within the system. Without effective

¹⁰⁶ Kenya Wildlife Service, "Capacity Building: A Case of Kws," <http://www.peopleinaid.org/pool/files/hhr/NGO%20Staff%20capacity.pdf>. John Muchangi, "Kenya: Nothing Short of Radical Overhaul of Kws Will Save Wildlife - Rotich," in *AllAfrica.com* (11 July 2014), <http://allafrica.com/stories/201407110728.html?viewall=1>.

¹⁰⁷ Kipng'etich, "Laying the Foundation for Conservation of Kenya's Natural Resources in the 21st Century."

¹⁰⁸ Stewart.

¹⁰⁹ Ibid.

monitoring, decision-making at the local, national, and international level of the SES are challenged.¹¹⁰ Public officials are loath to reveal the actual level of illegal killings or to declare poaching a national emergency.¹¹¹ They deny a poaching crisis exists in Kenya. The last comprehensive summary of the status of Kenya's national herd of elephants dates to 2002 and is likely inaccurate. Other trend data is only reliable for a few well studied populations in Tsavo, Amboseli, Meru, Masai Mara and Samburu/Laikipia. The KWS relies on statistics dating to 2008, at the latest, to determine elephant populations in the country's parks.¹¹² The KWS tightly controls information on poaching incidents within the state's parks, leading to questions about the veracity of collected data and limiting the ability to craft effective policy.¹¹³ Despite publishing statistics from an elephant census in Tsavo which indicated a decline of 1,500 elephants in three years in one park/ecosystem, the KWS continues to publish figures stating that country-wide only between 300-400 elephants are poached each year.¹¹⁴

Distrust and Criticism of Conservation NGOs

Distrust of conservation NGOs further hampers the ability of organizations to collaborate to protect wildlife and participate in conservation initiatives. Distrust stems from racial imbalances within early conservation structures, both

¹¹⁰ Dietz, Ostrom, and Stern, "The Struggle for the Commons," 1908.

¹¹¹ Sam Kiplagat and Gilbert Koech, "Kenya: Poaching Not out of Control - Ps," in *AllAfrica.com* (4 September 2014), <http://allafrica.com/stories/201409040492.html>.

¹¹² Litoroh et al.

¹¹³ Personal Communication (E-Mail) with Amboseli Trust for Elephants, Phyllis Lee, 4 December 2014.

¹¹⁴ Straziuso.

under colonial authorities and post-Independence, and how those racial imbalances played out in relation to the development of the park system.

For decades, conservation in Kenya was generally viewed as the purview of white Europeans. Early wildlife policies built the parks by excluding local peoples and creating preservation zones for the use and enjoyment of wildlife by non-Africans. Conservation professionals showed little sympathy for Africans displaced by wildlife. Through the 1980s most conservationists were scientists with little interest in the people and communities living near wildlife areas. White Kenyans and expats continue to exert a heavy influence on the conservation community in Kenya, and while many are sympathetic to African causes, they are accused of lacking understanding of local culture and politics. As the park system became more popular with tourists and developed into an important economic resource, the politics of race with white conservationists, white tourists, and white beneficiaries of wildlife preservation juxtaposed against black Africans receiving little economic development mirrored earlier policies under colonialism of exclusion from land and marginalization in decision-making processes.¹¹⁵

Other criticisms relate to the development of conservancies, largely pushed by NGOs over the past two decades. Conservancies are owned by indigenous people and leased to managers, often from old colonial families who run lodges and safari operations to accommodate foreign tourists. They may be not-for-profit ventures or operate as for-profit concerns. At their best CBNRMs employ local people, provide development, educational, and other social services

¹¹⁵ Yeager and Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa*.

while protecting wildlife and habitats.¹¹⁶ At their worst conservancies are accused of all of the ills associated with wildlife and land management in Kenya more generally. Multiple examples illustrate the tendency of conservancies to leave out local stakeholders in primary decision-making processes, and the failure to take into account indigenous conservation norms,¹¹⁷ mirroring the exclusionist policies of the central government. They can exacerbate ethnic conflicts if not managed properly.¹¹⁸ Despite promises of economic gain, revenue sharing schemes and direct payments promised by conservancy founders are often small, inequitably distributed, viewed as hand-outs, and are subject to manipulation by community councils.¹¹⁹ It is unclear if the livelihoods of Kenyans have been improved by participation in CBNRM programs.¹²⁰ Conservancies are increasingly criticized as being elite vehicles with poor track records for sharing revenue or conserving wildlife.¹²¹

Challenges within the governance structures impact the ability of those structures to react to interactions between licit and illicit resource users within the resource system. As a result, those interactions have proven to be detrimental to the system and incompatible with long-term conservation of habitats or wildlife.

¹¹⁶ Richard Madden, "Bush Telegraph: Can Tourism Save Kenya's Magnificent Wildlife?," in *The Telegraph* (2 January 2015), <http://www.telegraph.co.uk/travel/activityandadventure/11321515/Bush-Telegraph-Can-tourism-save-Kenyas-magnificent-wildlife.html>. Philip M. Osano et al., "Why Keep Lions Instead of Livestock? Assessing Wildlife Tourism-Based Payment for Ecosystem Services Involving Herders in the Maasai Mara, Kenya," *Natural Resources Forum* 37 (2013).

¹¹⁷ Stephen R. Kellert et al., "Community Natural Resource Management: Promise, Rhetoric, and Reality," *Society & Natural Resources* 13 (2000). Clemens Greiner, "Unexpected Consequences: Wildlife Conservation and Territorial Conflict in Northern Kenya," *Human Ecology* 40 (2012).

¹¹⁸ "Unexpected Consequences: Wildlife Conservation and Territorial Conflict in Northern Kenya."

¹¹⁹ Litoroh et al.

¹²⁰ Martha Honey, "Community Conservation and Early Ecotourism: Experiments in Kenya," *Environment* 51, no. 1 (2009).

¹²¹ P. Blaikie, "Is Small Really Beautiful? Community-Based Natural Resource Management in Malawi and Botswana," *World Development* 34, no. 11 (2006).

Resource Users, both Illicit and Licit

Applying the SESF, this section identifies patterns and processes which developed in the Kenyan SES since the colonial era to understand why Kenya's SES is threatened with transformation.¹²² Social interactions among resource users and the system in Kenya are impacting the resilience and adaptability of the system.¹²³ Key factors include changing demographic patterns in terms of the numbers of people living in wildlife areas; political and social institutional shifts away from communal management of land resources towards individual ownership and accumulation; and cultural shifts including in the valuation of wildlife and valuation of particular livelihood strategies.¹²⁴ Together these changes have resulted in shifts in land use patterns which, if continued, could transform the landscaped and impact permanently the resilience of the SES to absorb perturbations. Resilience in this context refers to both social and ecological systems within the SES because the changing land use strategies are damaging to the point, in some areas, that over time the land will become less productive for all living things it currently supports.¹²⁵ If the Kenyan SES becomes locked into a new system unable to support large amounts of wildlife, impacts will reverberate at the international level of the SES.¹²⁶

¹²² Redman, Grove, and Kuby, "Integrating Social Science into the Long Term Ecological Research (Lter) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change," 166.

¹²³ Ibid.

¹²⁴ Ibid., 166.

¹²⁵ Ostrom, "Frameworks and Theories for Environmental Change."

¹²⁶ Walker, "Resilience, Adaptability and Transformability in Social–Ecological Systems."

In Kenya both licit and illicit users within the system contribute to its degradation. Licit users negatively impact sustainability of the SES through land use strategies which maximize short-term gains at the expense of long term sustainability for both human populations and wildlife. Illicit users take advantage of the weaknesses within the governance system, in particular weak laws and lack of capacity within the KWS, to exploit wildlife, both poaching elephants in Kenya and trafficking massive quantities of wildlife harvested elsewhere through Kenya to points in Asia.

Licit Resource Users

The use patterns of the resource users in Kenya's SES, indigenous people and more recent immigrants living on Trust Lands in wildlife dispersal areas, have been shaped by colonial policies of exclusion, state ownership of wildlife, and weak protections for communal landholders. Carried over into the modern era these policies and attendant use patterns, characterized by shifts in land tenure from communal to private ownership, have resulted in serious degradation of the resource system for both communities and wildlife, threatening the uncontrolled and unplanned transformation of the SES. The lifestyle and land-use shifts occurring among Kenya's resource users at lower tiers of the SES considered collectively and in aggregate may result in transformational change of the SES, in this instance in an uncontrolled and

unplanned manner.¹²⁷ As the SESF literature indicates, examining and understanding cross-scale social interactions can help explain why resource usage changes in an area.¹²⁸

As noted in the section above, colonial authorities purposefully established indigenous reserves and wildlife reserves in areas outside of key agricultural zones that whites heavily utilized, meaning the costs and burdens of conservation were born by local Africans from the earliest period of conservation.¹²⁹ As Yeager and Miller write, “it was the technologically least adaptable African societies that were compelled to make room for the new game sanctuaries,” including Maasai and other groups reliant on pastoral lifestyles.¹³⁰ They were excluded from management of wildlife resources and not granted rights to exploit resources, whether those resources existed on public, private, or communally held territory.

The forced removal of indigenous people from their traditional communal lands and the designation of the state as sole owner of wildlife damaged the traditional tolerance and value on co-existence felt for wildlife, removing important local and traditional connections to wildlife, the sense of the responsibility to protect, and any for local communities to practice sustainable exploitation.¹³¹ Maasai in particular remember forced evictions in terms of illness,

¹²⁷ Carl Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability," *ibid.* 15, no. 4 (2010).

¹²⁸ Folke, "Social–Ecological Systems and Adaptive Governance of the Commons."

¹²⁹ Focus on Land in Africa.

¹³⁰ Yeager and Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa*, 14.

¹³¹ *Ibid.* Kadzo Kangwana and Christine Brown-Nunez, "The Human Context of the Amboseli Elephants," in *The Amboseli Elephants: A Long-Term Perspective on a Long-Lived Mammal* ed. Cynthia J. Moss, Harvey Croze, and Phyllis C. Lee (Chicago: Chicago University Press, 2011).

death, and destruction and, importantly, betrayal by governmental authorities.¹³² For example, the Maasai did not traditionally hunt elephants, or other wild game, due to social taboos, except in rituals initiating manhood.¹³³ They consider elephants to be the only other animals besides humans to have a soul.¹³⁴ Forcing the Maasai off their lands wakened the link between the people and their land and “wildlife became someone else’s property and responsibility.”¹³⁵ Despite mythical associations and traditional beliefs, many Maasai and others currently express a “not in my backyard” approach to conservation, they believe in it and support it, as long as it does not impact their lives directly.¹³⁶ As a result, the conversion of public goods into state property without accommodations for equal access or utilization policies aggravated “the situation of communities ... that have been subordinated for long and result in great poverty and exploitation without the achievement of conservation or equity.”¹³⁷ Communities over time eschewed responsibility for wildlife management and conservation, after being excluded from the process for decades.¹³⁸

By centralizing policies on wildlife, the government alienated wildlife from communities, negatively impacting indigenous conservation norms and removing responsibility for wildlife and the environment from local communities, with impacts lingering into the present era.¹³⁹

¹³² Hughes, "Rough Time in Paradise: Claims, Blames and Memory Making around Some Protected Areas in Kenya."

¹³³ Kangwana and Brown-Nunez, "The Human Context of the Amboseli Elephants."

¹³⁴ Christine Brown-Nunez, "The Maasai-Elephant Relationship: The Evolution and Influence of Culture, Land Use, and Attitudes," in *The Amboseli Elephants: A Long-Term Perspective on a Long-Lived Mammal*, ed. Cynthia J. Moss, Harvey Croze, and Phyllis C. Lee (Chicago: Chicago University Press, 2011).

¹³⁵ Kangwana and Brown-Nunez, "The Human Context of the Amboseli Elephants," 35.

¹³⁶ Ibid.

¹³⁷ Kameri-Mbote.

¹³⁸ Bonnie J. McCay and Svein Jentoft, "Market or Community Failure? Critical Perspectives on Common Property Research," *Human Organization* 57 (1998): 26.

¹³⁹ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks."

Shifts in Land Tenure

Because of the unique nature of Kenya's SES in which most wildlife lives outside of protected areas in trust lands and group ranches, the land use choices and lifestyle strategies of those living within these areas will impact the sustainability of wildlife populations. Some land use choices, such as pastoralism and ranching, are more conducive to wildlife populations than others, in particular dense settlement and intensive small farming.¹⁴⁰ Lacking a national land use policy or protections for land tenure, and in the context of weak conservation norms, the inability to utilize wildlife, and a history of exclusion from decision making or revenue sharing within conservation areas, Kenya's resource users follow a resource maximization strategy built around the subdivision of communally held lands with serious negative implications for wildlife and the future of conservation.

Multiple factors have driven shifts in land tenure from communal ownership to individual ownership in trust lands over the past decade. Lacking the authority to develop and enforce formal rules and regulations for land use, and lacking adequate protections at the federal level, trust lands essentially existed as "open access," subject to the predation of elites, illegal land grabbing, and exploitation.¹⁴¹ Uncertainty about the future for communal land holders who lack adequate protections through the government and have suffered for

¹⁴⁰ Kenya Wildlife Service, "Human Wildlife Conflict Mitigation Measures," http://www.kws.org/parks/community_wildlife_program/HWC.html.

¹⁴¹ Nelson.

decades from land grabbing elites, have created incentives to overexploit.¹⁴² Shifting land tenure from communal to private holdings provides some protections for communities, and has become widespread in group ranches in southern Kenya and has spread to trust lands in the north. Immigration from more overcrowded rural and urban areas placed a premium on land within the ASALs, despite their unsuitability for intensive agricultures.¹⁴³ Shifts in indigenous lifestyle choices related to increased access to Western education and the spread of Christianity as well as a desire to diversify income strategies by pursuing intensive agriculture in addition to pastoralism have further driven the trend towards sub-division of communal lands.¹⁴⁴ The absence of legislation establishing a framework for the development of community based conservancies further removes incentives for communal management of land. Under individual ownership, land holders can utilize the land any way they deem fit, irrespective of whether or not wildlife also may depend on resources.¹⁴⁵ The shift to individual ownership of land ushered in "land subdivision, fencing and conversion for other uses, particularly agriculture, infrastructure and urban development."^{146 147} When human populations were scattered through game animal territory these impacts could be more easily absorbed.¹⁴⁸ At intensive

¹⁴² Acheson, "Institutional Failure in Resource Management."

¹⁴³ Litoroh et al.

¹⁴⁴ Kellert et al., "Community Natural Resource Management: Promise, Rhetoric, and Reality."

¹⁴⁵ Moses Makonjio Okello, "Assessment of the Large Mammal Component of the Proposed Wildlife Sanctuary Site in Maasai Kuku Group Ranch near Amboseli, Kenya," *South African Journal of Wildlife Research* 35, no. 1 (2005).

¹⁴⁶ Litoroh et al. 18.

¹⁴⁷ Food and Agriculture Organization of the United Nations, "Land Resources: Background," <http://www.fao.org/nr/land/sustainable-land-management/farmer-field-school/agro-pastoral-ffs-project-home/ffs/en/>.

¹⁴⁸ Yeager and Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa*.

levels these practices transform the landscape and can lead to precipitous declines in many species.

Sub-division has proven disastrous for human populations and wildlife in group ranches. Farming replaces wild plants and grasses, reducing an area's biodiversity by focusing on a small number of crops. The millions of cattle, sheep, and goats within pastoral communities reduce grazing area available for wild animals, block their traditional migration paths, and negatively affect large predators, creating a situation in which domestic and wild animals compete directly for food and water, setting up communities for conflict with government policies aimed at protecting wildlife. Irrigation, fertilization, firewood collecting and charcoal production further deplete limited resources.¹⁴⁹ The conversion of wetlands to farmlands degrades soil, increases use of pesticides and chemicals and thus run-off, and requires far more water than human and animal uses,¹⁵⁰ destroying critical habitats.¹⁵¹ It should be noted indigenous people retain larger herds of livestock with reduced amounts of seasonal migration on their small farms, displacing wildlife directly and impacting wildlife indirectly through reduction in forage and slower recovery of forage material after dry periods.¹⁵²

Subdivision increases the numbers of stakeholders in a community, multiplying

¹⁴⁹ Ibid.

¹⁵⁰ Moses Makonjio Okello and John M. Kioko, "A Field Study in the Status and Threats of Cultivation in Kimana and Ilchalai Swamps in Amboseli Dispersal Area, Kenya," *Natural Resources* 2, no. 4 (2011).

¹⁵¹ M. M. Okello, S. K. Ole Seno, and R. W. Nthiga, "Reconciling People's Livelihoods and Environmental Conservation in the Rural Landscapes in Kenya: Opportunities and Challenges in the Amboseli Landscapes," *Natural Resources Forum* 33, no. 2 (2009).

¹⁵² D. Western, R. J. Groom, and J. Worden, "The Impact of Subdivision and Sedentarization of Pastoral Lands on Wildlife in an African Savanna Ecosystem," *Biological Conservation* 142 (2009). Rosemary J. Groom and David Western, "Impact of Land Subdivision and Sedentarization on Wildlife in Kenya's Southern Rangelands," *Rangeland Ecology & Management* 66, no. 1 (2013).

the number of land holders necessary to negotiate with in order to create areas with the critical mass needed to protect wildlife.¹⁵³

Moreover, human wildlife conflict (HWC) intensifies in densely populated areas, with greater numbers of people, crops, and wildlife impacted. Until the passage of the new Wildlife Bill, like most other African countries, Kenya did not pay for crop, livestock, or infrastructure losses related to human wildlife conflict. Loss of life received a small remuneration, between \$500-\$1,200.¹⁵⁴ By not compensating victims of HWC adequately, the KWS created the impression that animals' lives were more important than humans, a perception which continues to damage wildlife norms.¹⁵⁵ These increased conflicts further lessen the possibility of successful conservation efforts, already degraded by increased and altered land use practices.¹⁵⁶ Poaching and the destruction of "problem animals" increases in areas of intense HWC as locals attempt to clear the land of what they consider damaging animals.¹⁵⁷ The removal of elephants and other large herbivores, meanwhile, has contributed to a shift in vegetation from grassland to bush land and scrubland, limiting forage opportunities for livestock.¹⁵⁸

Privatization of communal lands is occurring as a short-term resource maximization strategy. Decisions are made with the current generation in mind,

¹⁵³ Anyonge-Bashir and Udoto, "Beyond Philanthropy: Community Nature-Based Enterprises as a Basis for Wildlife Conservation."

¹⁵⁴ Lamarque et al.

¹⁵⁵ Fredrick Owino, "Options to Stem Human-Wildlife Conflicts," in *Swara* (July-September 2012), https://eawildlife.org/swaraonline/swaras/Owino2012_03_01.pdf.

¹⁵⁶ Okello and Kioko, "A Field Study in the Status and Threats of Cultivation in Kimana and Ilchalai Swamps in Amboseli Dispersal Area, Kenya."

¹⁵⁷ Litoroh et al. Okello, Ole Seno, and Nthiga, "Reconciling People's Livelihoods and Environmental Conservation in the Rural Landscapes in Kenya: Opportunities and Challenges in the Amboseli Landscapes."

¹⁵⁸ Litoroh et al.

even when it is acknowledged that the decisions are damaging for community's long-term economic prospects and are unsustainable for wildlife. As Acheson notes, however, the question of sustainability only applies if one cares about the future. In the developing world, for many people the only important factor is the ability to sustain oneself in the present, not a vague concern about future generations.¹⁵⁹ The tendency to maximize short-term gains is increased by the lack of knowledge on how land use strategies impact the environment. Even where locals noticed negative effects of land use- decreased water quantity, decreased access to resources, impacts on wildlife, impacts on livestock, increased competition among resource users, and decrease of the overall area of the swamps, they express support for immediate exploitation of resources because they lack a long-range understanding of impacts.¹⁶⁰ The requirement to provide for the immediate basic needs of families and households override "appropriate long-term survival strategies that may be more sustainable for rural landscapes."¹⁶¹ For example, Maasai around Amboseli increasingly shift to new livelihood strategies including subdivision and intensive agricultural usage¹⁶² despite acknowledging these strategies are inappropriate for large scale animal husbandry or agriculture.¹⁶³ Economic pressure also discourages conservation

¹⁵⁹ Acheson, "Institutional Failure in Resource Management," 118.

¹⁶⁰ Okello and Kioko, "A Field Study in the Status and Threats of Cultivation in Kimana and Ilchalai Swamps in Amboseli Dispersal Area, Kenya."

¹⁶¹ Okello, Ole Seno, and Nthiga, "Reconciling People's Livelihoods and Environmental Conservation in the Rural Landscapes in Kenya: Opportunities and Challenges in the Amboseli Landscapes," 126.

¹⁶² Okello and Kioko, "A Field Study in the Status and Threats of Cultivation in Kimana and Ilchalai Swamps in Amboseli Dispersal Area, Kenya."

¹⁶³ Kangwana and Brown-Nunez, "The Human Context of the Amboseli Elephants."

as individuals may be more worried about their current circumstances than any future eventualities.¹⁶⁴

The shifts in land tenure towards individual ownership in Kenya's trust lands, if left unchecked, threaten to transform the SES in an uncontrolled and unplanned manner. The fragile ASALs will be unable to support intensive agriculture for an extended period of time, placing large human and livestock populations at risk from food and water shortages and the effects of desertification and soil depletion. Wildlife populations, lacking access to necessary resources, migration corridors, and safety from human wildlife conflict, will continue a fast and steady decline.

Illicit Users

In Kenya illicit actors associated with trafficking and poaching of wildlife are embedded in networks of criminals, corrupt government officials and businesspeople, and non-state armed groups which link local SESs to global resource users. These networks also connect to harvesting and facilitation networks across the continent decimating wildlife populations in Tanzania and Central Africa.¹⁶⁵ Weak protections for wildlife and the lack of enforcement of trafficking laws enable this trade to occur.¹⁶⁶

¹⁶⁴ Acheson, "Institutional Failure in Resource Management," 118.

¹⁶⁵ A Vietnamese man was caught with ivory, lion's claws, and lion's teeth. See Ponciano Odongo, "Foreigner Nabbed with Sh6m Game Trophies," in *The Standard Digital News* (17 June 2014), <http://www.standardmedia.co.ke/thecounties/article/2000125078/foreigner-nabbed-with-sh6m-game-trophies>. In another instance a Vietnamese man was caught with elephant skin and lion's teeth. See Xinhua News Agency, "Vietnamese National Arrested in Kenya with Wildlife Trophy," in *Global Post* (24 July 2014), <http://www.globalpost.com/dispatch/news/xinhua-news->

Mombasa has emerged as the primary hub for moving ivory from central and east Africa to Asia by air and by ship.¹⁶⁷ In 2013, Kenya seized over 13 tons of ivory, likely representing only about 10 percent of the ivory flowing through the country.¹⁶⁸ Estimates suggest as much as \$300 million worth of ivory flowed through Kenya in 2013.¹⁶⁹ According to Vira, Ewing, and Miller, “a significant amount of evidence suggests the collusion of Kenyan state, security, and political officials in the ivory poaching trade.”¹⁷⁰ Without the complicity of individuals in government, in the conservation industry, or the assistance of local communities, poachers would be unable to “find and poach so many elephants so quickly.”¹⁷¹ Multiple reports have been released indicating links to the highest levels of the political establishment. Members and former members of the KWS have been implicated in poaching rhino and elephants, hiring killers to target animals using inside information.¹⁷² At least 17 KWS officials have been arrested for involvement in wildlife crimes since 2009.¹⁷³ Security agencies are accused of accepting bribes to cover up illegal trophy hunting.¹⁷⁴ At the same time, the KWS

agency/140724/vietnamese-national-arrested-kenya-wildlife-trophy. Kerubo Lornah, "Kenya: Foreigners Charged over Ivory," in *AllAfrica.com* (19 November 2014), <http://allafrica.com/stories/201411191492.html>.

¹⁶⁶ Vira, Ewing, and Miller.

¹⁶⁷ Ibid.

¹⁶⁸ Paula Kahumbu, "Kenya: Crush Crime Cartels to Save Rhino, Elephants," in *AllAfrica.com* (29 July 2014), <http://allafrica.com/stories/201407290803.html>.

¹⁶⁹ Ibid.

¹⁷⁰ Vira, Ewing, and Miller.

¹⁷¹ Ibid. Sabahi, "Kenya Arrests Three Suspected Poachers in Taita Taveta County," in *AllAfrica.com* (1 May 2014), <http://allafrica.com/stories/201405020525.html>.

¹⁷² Okoth and Onsarigo.

¹⁷³ Muchangi, "Kenya: Kws to Probe Private Ranches over Poaching".

¹⁷⁴ Sayagie.

has investigated the role conservancies may play in poaching.¹⁷⁵ High-end resorts are thought to engage in illegal trophy hunting.¹⁷⁶

The ivory trade in Kenya follows the continental model of Africa-based, Asian run transnational crime described in more detail in Chapter 4.¹⁷⁷ Asian transnational criminal networks, dominated by the Chinese, are thought to be responsible for most of the ivory trade in and through Kenya.¹⁷⁸ Africans kill wildlife and transport ivory and other wildlife products to consolidation points. Once the animals are killed, poachers coordinate through middle-men with brokers and consolidators who prepare the ivory for shipment overseas.¹⁷⁹ Locals receive little pecuniary benefit and experience most of the risk associated with illegal killing of wildlife.¹⁸⁰ They may poach opportunistically, or as part of small organized poaching gangs with specific targets.¹⁸¹ Poachers target the largest bulls with the biggest tusks as well as smaller elephants, including juveniles, with very small tusks. Poachers engage in mass killings when possible, as evidenced by multiple instances in which entire families of elephants have

¹⁷⁵ Muchangi, "Kenya: Kws to Probe Private Ranches over Poaching".

¹⁷⁶ Sayagie.

¹⁷⁷ Vira, Ewing, and Miller.

¹⁷⁸ Cyrus Ombati, "Police Recover Ivory Worth Sh0.1m, Arrest Chinese Man," in *The Standard Digital News* (14 May 2014), <http://www.standardmedia.co.ke/thecounties/article/2000121105/police-recover-ivory-worth-sh0-1m-arrest-chinese-man>. Calvin Onsarigo, "Kenya: Two Chinese Men Held as Ivory Seized in Mombasa," in *AllAfrica.com* (13 November 2014), <http://allafrica.com/stories/201411130769.html>.

¹⁷⁹ Joseph Akwiri, "Kenyan Police Seize 300 Elephant Tusks Being Packed at Port City," in *Reuters* (5 June 2014), <http://www.businessinsider.com/r-kenyan-police-seize-300-elephant-tusks-being-packed-at-port-city-2014-05#ixzz33ISIAWMD>.

¹⁸⁰ One man confessed to killing 70 elephants for 58\$ a kg. See Stephen Messenger, "Exclusive Interview with an Elephant Poacher," in *The Dodo* (15 January 2014), <https://www.thedodo.com/interview-with-an-elephant-poa-390317914.html>.

¹⁸¹ Hussein Salesa, "Kenya: Two Poachers Killed as Gun, Tusks Nabbed," in *AllAfrica.com* (12 December 2013), <http://allafrica.com/stories/201312120840.html>.

been gunned down in a single episode in both Tsavo and Amboseli.¹⁸² Ivory kingpins in Kenya profit considerably more than low-level poachers; however scholars calculate even when profits reach into the millions those numbers represent about 6 percent of the profit of Asian traffickers.¹⁸³

Poachers include local indigenous people, transnational poaching gangs, and corrupt officials. Kenyan poachers both adapt old technologies and take advantage of new technologies to kill and traffic wildlife. They use cell phones to communicate with handlers and other facilitators to track and kill wildlife, and to coordinate transportation and consolidation.¹⁸⁴ While poachers continue to use automatic weapons when possible to kill wildlife, they have also adapted to new monitoring techniques and sensors placed in parks.¹⁸⁵ Electrocuting, poisoning by food and water, spears, and poisoned arrows kill the majority of elephants in Kenya.¹⁸⁶ Poachers also target other valuable species, in particular rhino, for export from Kenya. Porous international borders allow poachers from Tanzania and Somalia to enter Kenya to kill wildlife illegally. Some evidence suggests that Al-Shabaab, a terrorist group based in Somalia, poach elephants and traffic ivory

¹⁸² In 2014, six elephants were killed in one week in Tsavo. See Xinhua News Agency, "Kws Lauch Manhunt after Poachers Kill Six Elephants in Tsavo," in *Coastweek.com*, <http://www.coastweek.com/3717-latest-news-Kenya-Wildlife-Services-launch-manhunt-for-poachers-who-killed-six-elephants-in-Tsavo.htm>. In Kenya's worst poaching incident last year, 11 elephants were killed by a gang of Somali poachers in Tsavo East national park. See: Molloy.

¹⁸³ Kahumbu, "Kenya: Crush Crime Cartels to Save Rhino, Elephants".

¹⁸⁴ Ibid.

¹⁸⁵ "Passing of a Giant: Death of an Elephant". Stewart.

¹⁸⁶ Darcy Ogada, "Poisons and Poaching: A Deadly Mix Requiring Urgent Action," in *National Geographic: Explorers Journal* (17 August 2014), <http://newswatch.nationalgeographic.com/2014/08/17/poisons-and-poaching-a-deadly-mix-requiring-urgent-action/>.

to support their violent conflict activities.¹⁸⁷ According to Vira, Miller and Ewing, “Kenyan poachers are particularly notable for their high levels of violence when confronted with ranger forces. Shootouts, ambushes, and ranger casualties are no longer uncommon, while poachers appear equipped with increasingly better information, equipment, and weaponry.”¹⁸⁸

A considerable amount of poaching in Kenya is attributed to illegal herders and grazers invading the group ranches and conservancies where most elephant poaching in Kenya occurs. They both poach wildlife and harbor poachers as well as provide a cover for their illegal activities.¹⁸⁹ These herders sow insecurity through armed cattle rustling and banditry. Heavily armed, illegal herders often pose a significant and overt threat to park security,¹⁹⁰ in particular when park security and other law enforcement officials seize portions of their herds.¹⁹¹ Herders degrade the landscape further by bringing in tens of thousands of livestock to conservation areas in search of forage and water. In the worst cases they are known to attack park infrastructure, destroy fencing, and set fires.¹⁹²

¹⁸⁷ Nir Kalron and Andrea Crosta, "Africa's White Gold of Jihad: Al-Shabaab and Conflict Ivory," in *Elephant Action League*, <http://elephantleague.org/project/africas-white-gold-of-jihad-al-shabaab-and-conflict-ivory/>.

¹⁸⁸ Vira, Ewing, and Miller. 9.

¹⁸⁹ Raphael Mwadime, "Kenya: Herders and Ranchers Clash in Taita Taveta," in *AllAfrica.com* (15 April 2014), <http://allafrica.com/stories/201404150521.html>. Wanjohi Gakio, "Kenya: Herders Kill Elephant in Laikipia Sanctuary," *ibid.* (4 October 2014), <http://allafrica.com/stories/201410060362.html>.

¹⁹⁰ Raphael Mwadime, "Kenya: Herders and Ranchers Clash in Taita Taveta," *ibid.* (15 April 2014), <http://allafrica.com/stories/201404150521.html>.

¹⁹¹ *Ibid.*

¹⁹² Wanjohi Gakio, "Kenya: Herders Kill Elephant in Laikipia Sanctuary," *ibid.* (4 October 2014), <http://allafrica.com/stories/201410060362.html>.

Illegal herders plague conservation areas across the country, and in some areas are the primary parties responsible for poaching.¹⁹³

While licit users of the resource system contribute to immediate and large-scale damage and to the transformation of the SES, illicit users play a more pernicious role through illicit trafficking of wildlife, illegal harvesting, and intensive and unsustainable use of fragile ecosystems, contributing to wildlife declines, insecurity and corruption.

Resilience, Adaptation, Transformation

In response to the perturbations facing the Kenyan SES as a result of increased trafficking, poaching, and shifting land use strategies, the governance system is adapting and transforming in an effort to maintain resilience in the SES. Per the SESF, systems can transform either in an uncontrolled manner, or utilize crisis as an opportunity to adapt and adjust systems and structures to meet challenges.¹⁹⁴ Transformation draws on adaptation and the management of resilience occurring at multiple levels and across scales.¹⁹⁵ As illustrated below, the Kenyan governance system appears to be adapting to manage the SES to avoid uncontrolled transformation. Examples of adaptation within the governance system include reshaping laws, rules and regulations to react more

¹⁹³ Raphael Mwadime and Raabia Hawa, "Kenya: 11 Elephants Poached in Tsavo, Herders Suspected to Be Behind the Killings," *ibid.* (24 May 2013), <http://allafrica.com/stories/201305250155.html>.

¹⁹⁴ Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability."

¹⁹⁵ Marco A. Janssen and Elinor Ostrom, "Resilience, Vulnerability, and Adaptation: A Cross-Cutting Theme of the International Human Dimensions Programme on Global Environmental Change," *Global Environmental Change* 16, no. 3 (2006).

quickly to perturbations in the system, as well as altering the balance between central and local control of resources in order to manage them at the appropriate level. Adaptations which create a more resilient SES among users include adjustments to land use strategies to ensure conservation of the resource for both human and wildlife communities. Because the effects of system dynamics can take years to ripple through the system the success of some shifts will not be immediately obvious to observers. For example, the results of devolution of authority to stakeholders in the community will take years to emerge. Other shifts in governance, such as alterations to legal codes and changes in law enforcement practices, can be judged effective or ineffective in the short-term through the study of arrests and convictions.

Whether ultimately successful or not, adaptation and transformational change in Kenya is occurring as stakeholders recognize the failure of policies and the imperative to adopt new thinking and new strategies to avert uncontrolled transformation.¹⁹⁶ Within the international level of the SES, CITES sanctions and the spotlight provided by international NGOs on issues facing Kenya's SES are driving change. At the same time the strong national wildlife establishment, made up of the KWS and NGOs, has been instrumental in raising awareness on issues facing wildlife in order to adapt and transform the system.

This process is occurring in Kenya both through deliberative shifts on governance policies and through ad hoc solutions developed piecemeal by resource users within the system. At the national level, legislation to address

¹⁹⁶ Walker, "A Handful of Heuristics and Some Propositions for Understanding Resilience in Social-Ecological Systems."

challenges facing wildlife, both in terms of enforcement and within the broader context of land tenure and land use, have passed and are in the process of implementation. At the community level conservation programs have grown in the absence of formal legal mechanisms and now occur across large swaths of Kenya's trust land. If the reforms Kenya has embarked on have the intended effect, changed land-use strategies, strengthened laws, effective resource controls, and national land policy, they will contribute to the transformation of the SES to a stronger system able to absorb disturbances by addressing the linkages between levels and scales of the SES.¹⁹⁷ As Cash notes, management plans that address scale issues and linkages across levels are more successful at both assessing problems and finding sustainable, politically palatable, solutions.¹⁹⁸

Both immediate and longer-term shifts are occurring. These shifts have occurred with progressively increasing urgency over the past five years and include actions ranging from the creation of a CITES mandated Action Plan; passage of a strong wildlife conservation management bill; development of a robust and inclusive National Elephant Management Plan; increased and proactive oversight of the KWS by national authorities; increased cross border collaboration; successful public awareness raising initiatives; actions to mitigate HWC; and importantly, legislative movements to devolve authority and address contentious land tenure issues.

¹⁹⁷ Ibid.

¹⁹⁸ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

Kenya **cut** poaching levels and increased enforcement of anti-trafficking measures to include arrests and seizures of ivory and other illegal wildlife products. In 2014 poaching of elephants decreased fifty percent over the previous year.¹⁹⁹

CITES and International NGOs

CITES named Kenya in the ‘gang of eight’ in 2013, contributing to a series of shifts in governance through public “naming and shaming.” Along with Uganda, Tanzania, Malaysia, Vietnam, Thailand, and China, CITES threatened sanctions and instituted requirements that each state develop a national action plan to address both poaching and trafficking. CITES required action plans to address “legislation and regulations, national and international enforcement, outreach and public awareness.”²⁰⁰ Within one year of being so tasked, Kenya drafted an action plan meeting most of CITES requirements. Of the fourteen actions Kenya identified under the framework, CITES rated six as “substantially achieved,” five “on track” for achievement, one “challenging” and two were rated as “unclear.” CITES noted Kenyan achievements in legislation and regulations, enforcement at the national level and inter-agency collaboration, outreach and public education, and reporting.²⁰¹ According to the KWS, after the national

¹⁹⁹ John Muchangi, "Kenya: Poaching Reduces by Half, New Kws Figures Show," in *AllAfrica.com* (28 January 2015), <http://allafrica.com/stories/201501281456.html>.

²⁰⁰ CITES, "Eight Countries Submit National Action Plans to Combat Illegal Trade in Elephant Ivory," (16 May 2013), http://cites.org/eng/news/pr/2013/20130516_elephant_action_plan.php.

²⁰¹ "Sixty-Fifth Meeting of the Standing Committee: Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Elephant Conservation, Illegal Killing and Ivory Trade."

action plan was put in place seizures of trafficked ivory in East Africa, in particular Kenya, Uganda, and Tanzania, increased 80 percent.²⁰² Kenya was removed from the 'Gang of Eight' list after only one year.²⁰³

International and national conservation organizations have loudly called out Kenya for its role in trafficking and its weak wildlife laws. One devastating and influential report shed light on Kenya's role in the international trafficking of ivory and the clear complicity of officials in the act.²⁰⁴ Adding to the pressure to adjust tactics meaningfully, Wildlife Direct published a scathing report detailing the inefficacy of Kenya's outdated and weak wildlife laws. These laws essentially allowed poachers and traffickers to operate with absolute impunity, impervious to even small fines or minimal jail sentences. For their part the KWS, in a series of papers published in the *George Wright Forum*, on their website, and in their published strategies, recognize and acknowledge threats related to habitat fragmentation, overcrowding in fragments, loss of biodiversity, and increasing threats from poaching as well as shortfalls in the management and capacity of the organization. Lastly, the multitude of NGOs operating on the ground across Kenya's conservancies and group ranches provide invaluable information both to the Kenyan government and the broader international community of the threats facing the SES.

²⁰² Kenya Wildlife Service, "Gang of Eight Now Expanded to Gang of Nineteen," 2014 http://www.kws.org/export/sites/kws/info/news/2014/Download/Gang_of_eight_now_expanded_to_gang_of_nineteen.pdf.

²⁰³ Muchangi, "Kenya Escapes Cites Wildlife Sanctions".

²⁰⁴ Vira, Ewing, and Miller.

Increased Capacity within Wildlife Crime Legislation and the KWS

By bolstering wildlife crime legislation and strengthening the KWS, the Kenyan government is attempting to address perturbations within both the domestic and international level SES.

Debated for years, Kenya passed the Wildlife Conservation and Management Act (WCMA) in December 2013. It came into effect in January 2014 and addresses shortfalls in every aspect of wildlife crime legislation and enforcement. The law increased penalties for poaching and trafficking,²⁰⁵ with penalties up to life in prison for poaching elephants or rhinos.²⁰⁶ The law reduced the period traffickers wait between prosecution and trial, increased efforts to report wildlife crime, and strengthened local law enforcement capacity.²⁰⁷ The law increased collaboration between law enforcement agencies and established an Interagency Anti-Poaching Unit that combines elements of the national police and KWS, deployable to poaching hotspots and border points, and provided funding to recruit and train 1,000 new rangers.²⁰⁸ Kenya instituted training for members of the judiciary and prosecutors.²⁰⁹ In an effort to bolster investigative capacity, Kenya developed networks of informers and reached out to the public

²⁰⁵ Paula Kahumbu, "Kenya Overhauls Wildlife Laws Following Rise in Elephant and Rhino Deaths," in *The Guardian* (7 June 2013), <http://www.theguardian.com/environment/africa-wild/2013/jun/07/kenya-wildlife-laws-elephant-rhino-deaths>.

²⁰⁶ Alice Waweru, "Kenya: Lifetime Imprisonment If Convicted of Poaching," in *AllAfrica.com* (7 January 2014), <http://allafrica.com/stories/201401070907.html>.

²⁰⁷ CITES, "Sixty-Fifth Meeting of the Standing Committee: Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Elephant Conservation, Illegal Killing and Ivory Trade."

²⁰⁸ Kahumbu, "Kenya Overhauls Wildlife Laws Following Rise in Elephant and Rhino Deaths".

²⁰⁹ CITES, "Sixty-Fifth Meeting of the Standing Committee: Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Elephant Conservation, Illegal Killing and Ivory Trade."

to report wildlife crimes.²¹⁰ The introduction of sniffer dogs at entry and exit points into Kenya has increased the seizure rate of ivory and other illegal trophies immediately. With funding from Google and in partnership with the Consortium for the Barcode for Life, an international NGO, Kenya is in the process of upgrading and updating its forensic lab to aid in investigation of wildlife crime.²¹¹ This effort will increase investigative capacity and allow Kenya to monitor more closely its ivory stockpile through DNA analysis.²¹² Regulations specifically targeting illegal grazers were included in the 2013 WCMA, allowing the KWS and other law enforcement agencies to act with authority to expel people and livestock from protected areas.²¹³ The KWS cracked down on illegal grazing, pushing out large numbers of cattle from Tsavo, Amboseli, and other key wildlife areas.²¹⁴ In the first six months of 2014, over 250 poachers were arrested,²¹⁵ and the most prominent trafficker in Kenya was arrested in December 2014.²¹⁶

Under increased scrutiny from international organizations, the Kenyan government is actively managing the KWS to ensure shifts in the law and the capacity-building measures put in place are implemented. After allegations of mismanagement within the KWS emerged in 2014, the national government

²¹⁰ Kahumbu, "Kenya Overhauls Wildlife Laws Following Rise in Elephant and Rhino Deaths".

²¹¹ Geoffrey Kamadi, "Kenya: Google Funds DNA Lab to Catch Poachers," in *AllAfrica.com* (7 November 2014), <http://allafrica.com/stories/201411071300.html>.

²¹² CITES, "Sixty-Fifth Meeting of the Standing Committee: Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Elephant Conservation, Illegal Killing and Ivory Trade."

²¹³ Kahumbu, "Kenya Overhauls Wildlife Laws Following Rise in Elephant and Rhino Deaths".

²¹⁴ Raphael Mwadime, "Grazers to Be Expelled," in *The Star* (3 July 2012), <http://www.the-star.co.ke/news/article-11980/grazers-be-expelled>.

²¹⁵ Muchangi, "Kenya: Nothing Short of Radical Overhaul of Kws Will Save Wildlife - Rotich".

²¹⁶ Agence France Press, "Elephant Ivory Smuggling 'Kingpin' Arrested in Tanzania," in *The Guardian* (23 December 2014), <http://www.theguardian.com/environment/2014/dec/23/elephant-ivory-smuggling-kingpin-arrested-in-tanzania>.

initiated an investigation into the agency's shortfalls, established a committee to investigate the problem of poaching within the country's parks and dispersal areas, and committed to hiring hundreds more personal for the service.²¹⁷ The committee identified multiple areas for improvement including the budget, payment for rangers, fencing policies and infrastructure, lack of equipment, shortfalls within intelligence, community engagement, and corruption within the procurement sections of the KWS.²¹⁸ The government increased the KWS budget by 13 percent, though the service continues to rely on revenue generating schemes within the park system and donors for the majority of funding.²¹⁹

Addressing Human Wildlife Conflict

Both through legislative changes and proactive actions by NGOs, the governance system is working to address human-wildlife conflict. In response to changing trends in conservation and a recognition of the disconnect between Kenyans and their national wildlife, the KWS's strategy to address human-wildlife conflict evolved over time from one focused primarily on safeguarding animals' lives to an approach focused on prevention. Current approaches to addressing HWC consist of both compensation payments for losses, and increased opportunity for economic gains to offset opportunity costs related to conservation.

²¹⁷ Laban Wanambisi, "Kenya: Three Month Probe at Kws after Suspensions," in *AllAfrica.com* (11 April 2014), <http://allafrica.com/stories/201404140409.html?viewall=1>.

²¹⁸ Water and Natural Resources Republic of Kenya Ministry of Environment, "Revamping Kenya Wildlife Service," <http://www.environment.go.ke/?p=232>.

²¹⁹ Litoroh et al.

The 2013 WCMA revised compensation schemes to allow for communities and individuals to apply for remuneration related to the loss of crops and livestock.²²⁰ The bill greatly increased the amount of money available for claims to KSH5 million for death and KSH2-3 million for permanent injury or death. Claims for compensation of crop, livestock or infrastructure loss can be made through the local County Wildlife Conservation and Compensation Committees (CWCC) for adjudication and ruling.²²¹ Investments in equipment and technology are steadily reducing HWC.²²²

Other strategies to prevent or address HWC include a focus on protecting crops and infrastructure through fencing and moats to prevent conflict in agricultural areas. In the worst cases animals may be translocated to prevent conflict, or be eliminated. The KWS instituted a mobile rapid response team specially trained to address HWC, equipped to deal with problem animals to swiftly respond to community complaints.²²³ Through extensive conflict mapping the KWS has identified high conflict areas where large populations of human populations intersect and interact with wildlife populations in order to anticipate and prevent problems. They monitor HWC through a database to track incidents.

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²²⁰ Republic of Kenya, "The Wildlife Conservation and Management Act, 2013," (Kenya Gazette Supplement No. 181 (Acts No. 47), 27 December 2013).

²²¹ Ibid.

²²² Mathias Ringa, "Kws Says Poachers Have Killed 137 Elephants, 24 Rhinos This Year," in *Business Daily* (12 June 2013), <http://www.businessdailyafrica.com/KWS-says-poachers-have-killed-137-elephants--24-rhinos/-/539546/1880906/-/item/0/-/8chooe/-/index.html>.

²²³ Kenya Wildlife Service, "Problem Animal Management Unit (Pamu)," http://www.kws.org/parks/community_wildlife_program/PAMU.html.

²²⁴ Anyonge-Bashir and Udoto, "Beyond Philanthropy: Community Nature-Based Enterprises as a Basis for Wildlife Conservation."

Conservation organizations and conservancies increasingly offer compensation due to livestock or property loss, in addition to opportunity costs related to not utilizing land for alternate uses.²²⁵ Insurance funds contributed by the government, commercial tourism operators, NGOs and or local stakeholders are seen as a way to provide finance and, literally, stake-holder buy-in to the process.²²⁶ They further mitigate HWC through community education outreach programs, eco-tourist development, direct payments for livestock and infrastructure loss, direct payments for opportunity costs, and through multiple mechanisms to separate physically humans and wildlife.²²⁷ For example, to prevent elephants from over-grazing in certain areas and degrading the landscape for humans and wildlife once traditional migration routes were cut off, a group of conservancies and trusts, along with the KWS, created an elephant migration corridor with an “elephant underpass” to allow elephants to safely pass under a roadway and to other parts of their habitat.²²⁸ Successful ventures are credited with reducing human/wildlife conflicts as well as mitigating other resource conflicts within communities.²²⁹ This reduction is important because when communities feel like they cannot address human/wildlife conflict successfully they are less likely to support conservation initiatives and may in fact

²²⁵ Lamarque et al.

²²⁶ Litoroh et al.

²²⁷ Osano et al., "Why Keep Lions Instead of Livestock? Assessing Wildlife Tourism-Based Payment for Ecosystem Services Involving Herders in the Maasai Mara, Kenya."

²²⁸ LEWA Wildlife Conservancy, "The Elephant Underpass," <http://www.lewa.org/wildlife-security/the-elephant-underpass/>.

²²⁹ Z. A. Ogutu, "The Impact of Ecotourism on Livelihood and Natural Resource Management in Eselenkei, Amboseli Ecosystem, Kenya," *Land Degradation & Development* 13, no. 3 (2002).

actively oppose the presence of wild animals, hindering efforts for conservation.²³⁰

While compensation programs are criticized for being reactive, inefficient, and not financially secure, increasingly the KWS and the conservation community believe the best way to stem HWC is by increasing the opportunities for communities to benefit financially from wildlife resources and through a process of devolving authority to local communities.²³¹

Land Use Policy Changes

Over the past five years Kenya has significantly altered legislation and policy to address deeply rooted issues of land use, land tenure, and rights to wildlife utilization, in an effort to create a more inclusive wildlife governance system and to foster long-term utilization strategies. The 2009 National Land Policy, the 2010 Constitution, and the 2013 WCMA all provide mechanisms to increase community participation in wildlife management through the devolution of some authority to lower tiers of the SES. By addressing gaps and failures in legislation at the national level, Kenya may be able to overcome scale challenges and adopt policies which address both the needs of local users and long term goals of sustainability within the SES. These shifts, while ambitious, are likely to prove the most challenging because they attempt to dismantle tendencies towards centralization of decision-making authority which have been

²³⁰ W. D. Newmark et al., "Conservation Attitudes of Local People Living Adjacent to Give Protected Areas in Tanzania," *Biological Conservation* 63 (1993).

²³¹ Litoroh et al.

institutionalized within Kenya's SES from its earliest period. As evidenced below, it is unresolved whether devolution is occurring 'in name only' or if central authorities are actually creating avenues for significant stakeholder input in decision-making processes.

Issues impacting resource users in dispersal areas include the lack of protections for communal landholders and the lack of legislation to frame the creation of private conservation organizations in communal lands. Kenya is addressing these challenges through formalized devolution of some aspects of wildlife and land management and by strengthening land tenure laws. Devolution "refers to the relocation of powers to lower levels while a related concept of decentralization refers to the relocation of administrative functions from central location to lower levels."²³² The goal of devolution is to enhance citizen participation, increase the power of local communities and individuals to make decisions, and strengthen state-society relations across sectors.²³³ Devolution of authority to local communities creates avenues for communities to contribute to decision-making on wildlife issues and benefit financially from wildlife resources, both important for encouraging land-use practices conducive to conservation. Devolution also has the potential to re-embed indigenous conservation norms into decision-making on wildlife policies at the local level.²³⁴

²³² Fredrick Owino, "How Will Devolved Governance Affect Wildlife and Natural Resources Conservation in Kenya?," in *Swara* (April-June 2013), https://eawildlife.org/swaraonline/swaras/Fredrick2013_02_01.pdf.

²³³ Doshi et al.

²³⁴ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks."

Until the constitutional reform of 2010, the Kenya's constitution did not directly address wildlife or provide guidance on conservation.²³⁵ Under Kenya's new constitution, important aspects of environmental management are being devolved to provincial and district levels. The KWS decentralized authority over the country's eight conservation areas, Western, Mountain, Tsavo, Southern, Coast, Central Rift, Northern, and Eastern.²³⁶ Provincial and District Environment Management Committees are responsible for protecting water sources; carrying out impact assessments; promotion of environmental awareness and mitigation strategies to prevent environmental degradation; and coordinating between NGOs and government agencies; among other key tasks formerly controlled by the central government.²³⁷

The 2013 wildlife law, in line with the constitution, legislates opportunities for local participation in wildlife management. The bill directs the KWS to set up County Wildlife Conservation Committees (CWCC) responsible for developing management plans, registering community and private conservancies, and ensuring that the costs to wildlife do not outweigh benefits.²³⁸ The new law also allows for local communities to create Community Wildlife Associations (CWA) to advance community participation in wildlife management and facilitate conflict

²³⁵ Litoroh et al.

²³⁶ Kenya Wildlife Service, "Overview - Parks and Reserves". Yeager and Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa*. Other organizations with an interest in conservation include international wildlife organizations based in Kenya, operating out of Nairobi a base of operations for activities across East Africa. The UNEP and IUCN have headquarters in Nairobi. In 2014 INTERPOL recently opened its Environmental Security office in Nairobi. These organizations have funded major programs in Kenya to facilitate land management and efficient use of land resources and protection of wildlife.

²³⁷ Litoroh et al. 18.

²³⁸ Nigel Hunter, "Kenya Has a New Act - the 2013 Wildlife Conservation and Management Act," in *Maliasili Initiatives* (18 June 2014), <http://www.maliasili.org/kenyahasanewact/>.

resolution within specific regions. In addition, the bill provides a mechanism for local communities to apply for licenses to partner with the KWS and investors to utilize wildlife resources through bio-prospecting, a potential income generator.²³⁹ These partnerships, if successful, could provide incentives to focus on long-term preservation.²⁴⁰

To create greater protections for communal land holders and to disincentivize the privatization of communally held land, Kenya passed a National Land Policy (NLP) in 2009. The NLP simplified land categories into communal, public, or private lands, giving each land tenure category equal recognition under the law and providing protections for customary land tenure. The policy “repudiates the focus on converting customary tenure into individual ownership.”²⁴¹ Importantly, it provided, along with shifts in the WCMA, the legal framework necessary for communities to create community-based conservation organizations allowing economic benefits from wildlife utilization. The NLP acknowledge customary and traditional resource management rules and practices, and requires land use regulations to consider conservation and not simply opportunities for economic exploitation. The policy asserts that investments in community lands must benefits local communities and their economies.²⁴² The NLP is supported by the 2010 Constitution, which adopts provisions securing community land rights, greater accountability, and increased

²³⁹ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks."

²⁴⁰ Osano et al., "Why Keep Lions Instead of Livestock? Assessing Wildlife Tourism-Based Payment for Ecosystem Services Involving Herders in the Maasai Mara, Kenya."

²⁴¹ USAID, "Land Tenure Kenya Profile," (August 2010), <http://usaidlandtenure.net/kenya>.

²⁴² Nelson.

decision making authority.²⁴³ Land ownership and management was a key issue driving Kenya's new constitution, adopted in 2010.²⁴⁴

It is unclear to what extent these changes in law and policy will impact resource users within the system. Following past patterns, even the devolved authorities are delegated and limited, with most authority remaining with the central government. An assessment published in 2014 indicated governance of natural resources and environmental policies had not fully devolved to the local level in all counties due to institutional weakness and limited capacity.²⁴⁵ In terms of environmental regulations, county governments are assigned an implementation role, not a policy setting role, undermining the basic tenets of devolution.²⁴⁶

Similar issues have surfaced over implementation of the NLP. The Constitution requires legislation to provide for the establishment of community lands to be passed by 2015. The Community Land Bill, under development, and other supporting legislation, serves to implement the NLP. The Community Land Bill is meant to codify protections for communal landholders and to develop institutions for community input; however the institutions so far developed are not representative of community membership and have not developed decision-making processes conducive to community involvement. The bill further fails to outline clearly rules for conversion of land from communal to private ownership, a

²⁴³ Ibid.

²⁴⁴ Yeager and Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa*.

²⁴⁵ Commission for the Implementation of the Constitution, "Assessment of the Implementation of the System of Devolved Government: From Steps to Strides," (June 2014), http://www.twawezacommunications.org/resources/CIC%20Assesment_Report_on_the_System_of_Devolved_Government.pdf.

²⁴⁶ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks."

major problem facing wildlife conservation currently.²⁴⁷ The law does not require communal councils to have land-use plans, another shortfall with impacts for conservation.²⁴⁸

Under the constitution and the WCMA the national government remains responsible for the protection of the environment and wildlife,²⁴⁹ remains the owner of all wildlife in Kenya, and retains most of its management rights over wildlife. On matters relating to wildlife and the environment, national laws override county laws. By the distribution of functions, wildlife management remains the purview of the central government, not local governments.²⁵⁰

Critics have seized on key aspects of devolution mechanisms to highlight the challenge in mitigating centralizing tendencies. Didi argues aspects of wildlife law actually weaken opportunities for participation by implementing strict registration, permitting and licensure requirements.²⁵¹ Under the WCMA communities may not undertake any tourism initiatives, educational initiatives, filming, or commercial photography without a license from the KWS. All non-consumptive wildlife utilization schemes must be registered with the CWCCs and obtain a permit from KWS. Under the WCMA the KWS retains the authority to set up CWCCs and to staff them with multiple representatives from the central government, skewing their makeup towards the KWS and the central

²⁴⁷ "Public Hearing on Kenya's Community Land Bill, 2014," in *Natural Justice* (2 December 2014), <http://natural-justice.blogspot.com/2014/12/public-hearing-on-kenyas-community-land.html>.

²⁴⁸ James Waitaha, "Kenya: Experts Punch Holes in Community Land Bill," in *AllAfrica.com* (12 February 2014), <http://allafrica.com/stories/201402120854.html>.

²⁴⁹ Doshi et al.

²⁵⁰ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks."

²⁵¹ *Ibid.*

government, with fewer positions allocated to local participants. Though locals create the Community Wildlife Associations (CWAs), all CWAs are subject to licensure by the KWS and registration through the CWCC, again placing authority within the central government. Lastly, prior to the bill's passage local authorities managed the land and tourism aspects in national reserves, while KWS undertook the bulk of wildlife management activities. The Wildlife Bill moves all national reserves to national parks, eliminating the role of local authorities in the reserves. While the new wildlife bill does provide a legal framework for the development of conservancies, it does not ultimately devolve authority to them. The KWS retains authority to oversee tightly their management plans. The fear among supporters of devolution is that the KWS will simply not create the councils and not implement the primary avenue for devolution and decentralization.²⁵²

Ultimately, while the Constitutional Reforms, the NLP, and Wildlife Act together provide greater opportunity for community involvement, it is limited to "co-management" and not to autonomous or devolved authorities.²⁵³ While authority is not devolving to the extent originally intended, communities are increasingly able to take a part in conservation strategies and to benefit economically from wildlife. Expanding the roles and responsibilities of communities living near wildlife to include the conservation and preservation of wildlife and habitats has the potential to increase the success rate of

²⁵² Ibid.

²⁵³ Nelson.

conservation programs in unprotected dispersal areas outside of the national park or reserve system, where most wildlife lives.²⁵⁴

Increased Cross Border Collaboration

Because of the global nature of the SES and the regional linkages between Kenya's resource system and that of neighboring countries, cross-border collaboration remains a priority. Managing cross-border elephant populations is a particular concern, addressed through agreements with Tanzania to count and monitor populations in the Amboseli-Kilimanjaro, Tsavo-Mkomazi and Serengeti-Masai Mara ecosystems, all of which span borders. To address trafficking, in 2014 police commissioners from several East African states met in Nairobi to participate in training to improve intelligence gathering, combat terrorism, and intercept contraband, including ivory.²⁵⁵ Late in 2014 it was announced Kenya would house the Environmental Security Office of Interpol in Nairobi, responsible for increasing collaboration between police organizations focused on wildlife trafficking across the region. The expansion of Interpol in East Africa is in part meant to stem the rising tide of poaching and other wildlife crime.²⁵⁶ At the international level, Kenya increased collaboration with China to enforce wildlife laws, conduct investigations, and raise awareness amongst

²⁵⁴ G. S. M. Andrade and J. R. Rhodes, "Protected Areas and Local Communities: An Inevitable Partnership toward Successful Conservation Strategies?," *Ecology and Society* 17, no. 4 (2012).

²⁵⁵ Aden Mohamed Warsame, "East Africa: Police Bosses from Eastern African Countries to Be Trained in Mombasa," in *AllAfrica.com* (25 August 2014), <http://allafrica.com/stories/201408261133.html>.

²⁵⁶ Xinhua News Agency, "Kenya to Host Interpol Environmental Security Office," in *ShanghaiDaily.com* (4 October 2014), http://www.shanghaidaily.com/article/article_xinhua.aspx?id=244925.

Chinese nationals in Kenya about the ramifications of ivory consumption.²⁵⁷ In terms of cross-border collaboration, funding from private organizations increase the ability of conservation stakeholders to address perturbations in the SES and to increase the capacity of local and national services to protect wildlife. In 2012 representatives of government wildlife organizations from Kenya and Tanzania, community based resource management programs, and community representatives from across the region met to discuss wildlife management issues, in particular poaching.²⁵⁸

The 2012 National Elephant Strategy

In response to the complex threats facing the SES, in 2012 Kenya developed its first National Elephant Strategy. Past policies focused on a narrow subset of threats, primarily associated with poaching. Acknowledging the more complex problems facing the SES currently, the new strategy addresses threats related to “a growing population, climate change, wildlife crime, and abuse of the environment,” creating conceptual linkages across levels and scales of the SES.²⁵⁹ The strategy explicitly notes complex issues specific to Kenya which impact the SES including the large numbers of elephants living outside of protected areas; the increase in human populations in those areas; the lack of

²⁵⁷ CITES, "Sixty-Fifth Meeting of the Standing Committee: Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Elephant Conservation, Illegal Killing and Ivory Trade."

²⁵⁸ African Conservation Centre, "Kenya-Tanzania Borderland Conservation Initiative," http://dev.accafrica.org/our_work/explore_programs/conserving-biodiversity-in-east-africa/kenya-tanzania-borderland-conservation-initiative/.

²⁵⁹ Litoroh et al.

coordination in terms of land use planning; the movement beyond Kenya's borders of some elephant populations; and the lack of capacity resident within government agencies to adequately implement complex conservation initiatives.²⁶⁰

The strategy lays out goals to devolve authority to local communities; increase collaboration with neighboring states where elephant populations interact; focus research on elephant behavior; and increase capabilities of monitoring efforts.²⁶¹ It also identifies important threats to elephant conservation including poaching; degraded habitats; fragmentation of habitats; HWC; loss of wildlife corridors and buffer zones; lack of national land policies; negative attitudes towards elephants; increased demand for agricultural land; lack of economic incentives to conserve; and insecurity. The document lays out a pathway to combat each threat with clearly laid out roles and responsibilities, actions, and measurable objectives. While it remains to be seen whether or not the strategy can achieve its goals long term, the document provides an honest assessment and baseline from which government actors and NGOs can collaborate deliberatively.²⁶²

²⁶⁰ Patrick Omondi and Shadrack Ngene, "The National Elephant Conservation and Management Strategy (2012–2021) at a Glance," *The George Wright Forum* 29, no. 1 (2012).

²⁶¹ Ibid.

²⁶² Litoroh et al.

Increased Public Awareness of Wildlife Crime

Recognizing that SES perturbations can have local and global causes and outcomes is key to addressing both jurisdictional and informational challenges in the preservation of the SES.²⁶³ Governance authorities in Kenya painstakingly connect local SES challenges to global markets through public awareness raising campaigns integral to shifting scalar thinking on the SES. KWS uses Twitter, Facebook, and a functioning and sophisticated website to educate Kenyans and the world on wildlife issues facing Kenya. Public awareness raising campaigns included some sponsored by the First Lady Margaret Kenyatta such as the “Ivory Belongs to Elephants” and “Hands Off our Elephants” campaigns, and celebrations for World Wildlife Day.²⁶⁴ Kenyan authorities reach out to local communities to conduct anti-poaching campaigns as well as holding interagency awareness and sensitization training. NGOs, conservancies, and game ranches maintain their own media presence through social networking sites and websites, providing both scientific information on the SES as well as real-time reports on poaching, illegal grazing, trafficking, and efforts to combat these wildlife crimes. The information sharing made possible through these combined efforts allow for a nuanced and informed understanding of all aspects of challenges facing the SES, and creates opportunities to find creative solutions.

²⁶³ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

²⁶⁴ CITES, "Sixty-Fifth Meeting of the Standing Committee: Interpretation and Implementation of the Convention: Species Trade and Conservation: Elephants: Elephant Conservation, Illegal Killing and Ivory Trade."

Conclusion

By applying the SESF to the Kenya case study, linkages emerge across levels and scales of the SES, illustrating how interactions at the domestic level, such as legislation and the actions of resource users, can impact the international system, while international level factors such as increased illicit ivory use and CITES' enforcement actions can shift outcomes in the domestic SES. Kenya's weak laws and lack of enforcement enable international ivory traffickers to penetrate its porous borders and move massive quantities of ivory to international markets, with impacts rippling across the international SES as elephant populations in Central Africa are poached to extirpation. By failing to strengthen domestic legislation before the international poaching reached crisis proportions, Kenya not only failed to protect its portion of the international SES but contributed to the degradation of the entire system. Similarly, at the domestic level the slow response to changes in the resource system driven by shifting resource utilization strategies within the SES will impact the health of the system, and its ability to absorb perturbations and disturbances.

By applying the SESF the chapter illustrated how changes to the modern SES relate to policies and practices stretching into the earliest colonial era, deepening understanding of the challenges it now faces. The lack of a national land use policy or an effective land tenure policy has undermined the resilience, adaptability and transformability of the Kenyan SES. As a result much of Kenya's trust land operates as open access, degrading the landscape for both

humans and wildlife, increasing human/wildlife conflict and undermining efforts to combat poaching. The subdivision of communal lands which has occurred in the absence of policies conducive to private conservation weakened ties within and between communities, creating barriers to future conservation efforts and undermining conservation norms. By centralizing wildlife policies the government has marginalized stakeholder participation in efforts to manage the SES and combat poaching, damaging indigenous conservation norms and removing the responsibility conserve and protect from local communities.

Tensions continue to exist within Kenya between the centralizing tendencies of the wildlife establishment and the ethics and rhetoric of decentralization espoused in public policy. If Kenya cannot resolve these tensions resource users will continue to make decisions that best benefit their immediate needs, not the longer terms requirements for resource conservation. Together, these factors create strong incentives for stakeholders to overexploit the SES rather than conserve it. The politics of partial reform now evident in Kenya, whereby rules and regulations skirt reform, but do not fully enact it, may ultimately undermine attempts at controlled transformation of the SESF.

This analysis of the SES in Kenya also provides a detailed understanding of the range of policy prescriptions, both through official channels and as a result of “silent” processes, that are helping the SES adapt to maintain resilience. Kenya is attempting to address the entire range of issues facing the SES from the immediate problem of poaching and trafficking to longer term and more complex issues surrounding land reform and livelihood strategies. Instead of

applying a “panacea” approach that disregards the complexity of the problems facing the system, linked through usage patterns to the global SES, Kenya made concrete changes in response to perturbations within the system. Because of the nature of these shifts, including deep institutional and cultural changes, evidence of their efficacy may only slowly materialize.

The next case study, focused on Tanzania, illustrates the impacts of uncontrolled transformational change as the result of corrupt enabling mechanisms within nested tiers of the system and failures at the international level to monitor and address threats within the SES. Despite Tanzania’s early adoption of devolved authority over wildlife, community based natural resource management programs, and far larger system of protected areas, the country faces both a poaching crisis and widespread negative conservation norms, degrading the SES’s ability to adapt effectively in the short and long-term. Some areas of Tanzania’s elephant SES have already transformed, perhaps irrevocably.

CHAPTER 6

TANZANIA

Problem Statement

Tanzania has one of the largest systems of protected wildlife areas in Africa. Unlike in Kenya, authority over wildlife was devolved to local communities through pilot programs and later through clear legislation by 1998. Considerable donor funds support the implementation of community based natural resource management programs as well as all other aspects of conservation. Because of Tanzania's early recognition of the role of communities in conservation, the development of legislation to protect communal land rights and the supporting policy to enable community wildlife management, the country was in many ways better positioned to protect wildlife than Kenya. Yet, the country is both a major source of ivory and trafficking hub for ivory exports from Central Africa to Asia. One third of all illicit ivory seized globally came from Tanzania between 1989-2009.¹ In 2009 half of all the ivory seized in the world originated from Tanzania.² The country has lost half of its elephant population, the largest in East Africa and second largest on the continent, since 2006.³

¹ "United Republic of Tanzania," (CoP15 Doc. 68 Annex 6a).

² Open Season: The Burgeoning Illegal Ivory Trade in Tanzania and Zambia, (London: Environmental Investigation Agency, 2010), http://eia-global.org/images/uploads/Open_Season.pdf.

³ EIA, Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants, (London: Environmental Investigation Agency, 2014), <http://eia-international.org/wp-content/uploads/EIA-Vanishing-Point-lo-res1.pdf>.

While typically blamed on corruption, as the SES literature makes clear, the resource management failures in Tanzania cannot be related to one factor or a few inter-related factors existing at one level of analysis. Instead, one must understand them in terms of factor interdependence “and the way that various complex factor combinations cause resource-management attempts to fail.”⁴ The interplay of exogenous globalizing forces, including the hyper consumption of Asian consumers; connectivity of global markets; adoption of neoliberal conservation, and the state’s subverting of many of its tenets, impacts the resilience and vulnerability of the SES. Additionally, endogenous processes including corruption, rent seeking, severely degraded conservation norms, and patterns of conflict between users and authorities, further contribute to vulnerability and perturbations within the SES.⁵ These factors interact to create conditions under which commercial illicit exploitation of wildlife has occurred with impunity, with severe and negative consequences for the social and ecological components of the SES. Moreover, Tanzania’s response to the current crisis, as well as longer term threats, represents a repeat of past patterns and processes, challenging the state’s ability to regain resilience.

SESs are dynamic, ever-changing systems, coevolving through interactions between and among actors and institutions “and resources constrained and shaped by a given social-ecological setting.”⁶ In Tanzania, movement is occurring towards uncontrolled and potentially irreversible

⁴ Ibid. Acheson, "Institutional Failure in Resource Management," 129.

⁵ Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research."

⁶ Schlüter et al., "Application of the Ses Framework for Model-Based Analysis of the Dynamics of Social-Ecological Systems." Holling and Gunderson, "Resilience and Adaptive Cycles."

transformation.⁷ Failed efforts to reform wildlife management have resulted in the degradation of conservation norms to the point that many communities view conservation authorities and the conservation process, both government and NGOs, with distrust and suspicion; consider protected area (PA) expansion a new form of dispossession; and actively engage in defensive techniques to prevent the expansion of PAs.⁸

The models of conservation adopted in Tanzania, first fortress style conservation and later neoliberal conservation, as implemented, ultimately reduced local communities' say in resource use and management rules. Communities feel they bear all of the costs of wildlife conservation, while enjoying few, if any, benefits. Instead of a source of income, inspiration, or pride, wildlife is perceived as a burden and a threat.⁹ Local communities have come to associate Tanzania's policies of wildlife management with dispossession and exploitation. Hence, local communities not only tolerate poaching and overharvesting of the SES, but in some cases the loss of livelihood practices pushes local communities into actively participating in poaching, trafficking or corrupt practices. Under these circumstances the primary objective of creating and expanding protected areas, the conservation and protection of wildlife, is paradoxically undermined.¹⁰ At the same time, the largest elephant populations in

⁷ Walker, "A Handful of Heuristics and Some Propositions for Understanding Resilience in Social-Ecological Systems."

⁸ Mara J. Goldman, "Strangers in Their Own Land: Maasai and Wildlife Conservation in Northern Tanzania," *Conservation and Society* 9, no. 1 (2011).

⁹ "Partitioned Nature, Privilege Knowledge: Community-Based Conservation in Tanzania," *Development and Change* 34, no. 5 (2003).

¹⁰ Hassan Sachedina and Fred Nelson, "Protected Areas and Community Incentives in Savannah Ecosystems: A Case Study of Tanzania's Maasai Steppe," *Oryx* 44, no. 3 (2010).

Tanzania have plummeted to the point their recovery, or even survival, is questionable.

Following the SESF, this chapter first describes the resource system and units, highlighting the large size of Tanzania's protected areas and the significant perturbations faced by elephant populations in the Selous Game Reserve and neighboring systems. The following section examines the governance system in Tanzania and key interactions between the state and resource users, which have, over time, severely erode conservation norms, leading to significant levels of resistance to conservation. The following section examines the steps the governance system has undertaken to address threats to the SES, which are largely dependent on outside donors and track fairly closely with current policies and practices. The conclusion illustrates how the SESF, applied to Tanzania, links local processes and cross-level, cross-scale interactions to ecological and social outcomes in the SES, defined in Tanzania by exploitation and, potentially, resource collapse.

Resource System and Resource Units

Tanzania sets aside a larger percentage of its territory for wildlife than almost any country in Africa, nearly 39 percent,¹¹ but remains exposed to "multiple, interacting perturbations," some of which are bringing on fast change

¹¹ Soyata Tegegn, "The Impact of Dominant Environmental Policies on Indigenous Peoples in Africa," in *Indigenous People in Africa: Contestations, Empowerment and Group Rights*, ed. Ridwan Laher and Korir SingiOei (Pretoria: Africa Institute of South Africa, 2014), 57.

within the system.¹² Threats included large-scale commercial poaching; habitat fragmentation due to increased human settlement near parks and in wildlife corridors; human-wildlife conflict; and “rapid agricultural expansion, unplanned land use, and road construction.”¹³ Increased population density around parks corresponds to the greatest threats to wildlife, in particular in terms of poaching. In the vicinity of Western Serengeti alone, there are thought to be between 52,000-60,000 illegal bush-meat hunters.¹⁴ Despite the expansion of PAs since 2000, elephant range has shrunk by ten percent during that same period.¹⁵ Increasing the amount of territory under protection, from less than ten percent in 2000 to about forty percent currently, is not enough to imbue the system with resiliency.¹⁶

Protected areas can be broken into six categories, based on how land and wildlife is protected or utilized. The country boasts 16 National Parks, 38 Game Reserves, the Ngorongoro Conservation Area (NCA), 44 Game Controlled Areas, 38 Wildlife Management Areas (WMAs) and several Forest Reserves.¹⁷ The PAs fall within six eco-systems including the Tarangire-

¹² Gallopin, "Linkages between Vulnerability, Resilience, and Adaptive Capacity."

¹³ S. Mduma et al., Tanzania National Elephant Management Plan 2010-2015, (Arusha: Tanzania Wildlife Research Institute, 2011), http://www.tawiri.or.tz/images/Conference/elephant_plan.pdf. Tanzania National Parks Corporate Plan: Optimization of Tanapa Potential 2008/09-2012/13, (Tanzania National Parks, 2008), http://tanzaniaparks.com/useful_docs/Corporate_Plan.pdf. CITES, "United Republic of Tanzania."

¹⁴ E. J. Knapp, "Why Poaching Pays: A Summary of Risks and Benefits Illegal Hunters Face in Western Serengeti, Tanzania," *Tropical Conservation Science* 5, no. 4 (2012).

¹⁵ "Tanzania National Parks Corporate Plan: Optimization of Tanapa Potential 2008/09-2012/13".

¹⁶ J. R. Kideghesho et al., "Emerging Issues and Challenges in Conservation of Biodiversity in the Rangelands of Tanzania," *Nature Conservation* 6 (2013); Ndalawa F. Madulu, Population Dynamics and Sustainable Conservation of Protected Areas in Tanzania: The Case of Swagaswaga Game Reserve in Kondoa District, (Uppsala: Uppsala University, 2001), <http://www.env-impact.geo.uu.se/Read2TOTAL.pdf>.

¹⁷ Colin Bonnington, Dan Weaver, and Eiblis Fanning, "Livestock and Large Wild Mammals in the Kilombero Valley in Southern Tanzania," *African Journal of Ecology* 45 (2007).

Manyara, Serengeti, Selous-Mikumi, Ruaha-Rungwa, Katavi-Rukwa and Moyowosi-Kigosi.¹⁸ In the national parks, game reserves, and NCA, the largest percentage of protected area, human settlement and usage of resources is strictly prohibited.¹⁹ Game controlled areas, wildlife management areas (WMAs), partial game reserves, and forest reserves receive less protections, and can be utilized by both human populations and wildlife.²⁰ New protected areas are being created both on land and within maritime areas, through evictions and the restrictions of use rights of inhabitants.²¹

In terms of geography, around 74 percent of Tanzania is considered semi-arid rangelands, while the rest of the country outside of coastal areas is dominated by savannah and bushlands, as well as tropical and subtropical forest ecosystems.²²

Elephants are found throughout Tanzania's PAs and in unprotected dispersal areas.²³ Around twenty percent live primarily in unprotected areas.²⁴ Large populations of elephants still exist in the Selous-Mikumi, the Ruaha Rungwa, and Moyowosi-Kigosi Game Reserve, though they all face intensive

¹⁸ CITES, "United Republic of Tanzania."

¹⁹ Mduma et al. Dan Brockington, "Preserving the New Tanzania: Conservation and Land Use Change," *International Journal of African Historical Studies* 41, no. 3 (2008).

²⁰ H. Kjekshus, *Ecology Control and Economic Development in East African History: The Case of Tanganyika, 1850-1950* (London: James Currey, 1996). Mduma et al.

²¹ Tor A. Benjaminsen and Ian Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispassion in Tanzania," *Journal of Peasant Studies* 39, no. 2 (2012).

²² Kideghesho et al., "Emerging Issues and Challenges in Conservation of Biodiversity in the Rangelands of Tanzania." World Travel Guide, "Tanzania Weather, Climate and Geography," <http://www.worldtravelguide.net/tanzania/weather-climate-geography>. African Wildlife Foundation, "Tanzania," <http://www.awf.org/country/tanzania>.

²³ Mduma et al.

²⁴ Apolinari Tairo, "A Good Hope to Save Elephants in Tanzania Comes to Light," in *eTN Global Travel Industry News* (10 May 2014), <http://www.eturbonews.com/45621/good-hope-save-elephants-tanzania-comes-light>.

poaching pressures.²⁵ Important trans-boundary populations of elephants exist in both the north and south of the country. The Selous-Niassa ecosystem, extending across southern Tanzania and northern Mozambique, is one of the largest trans-boundary wildlife areas in Africa.²⁶ Three important ecosystems operate across the border with Kenya, the Serengeti-Mara, Amboseli-Kilimanjaro, and Tsavo-Mkomazi. These areas are world famous for the wildebeest migration and for the elephants, as well as being the stronghold for East Africa's Maasai.²⁷ The Serengeti, Kilimanjaro, the Selous Game Reserve, and parts of the Ngorongoro Conservation Area, are UNESCO World Heritage Sites.²⁸

Along with Kenya, Tanzania experienced heavy poaching during the 1970s and 1980s, losing over 100,000 elephants from 1977-1987. In the Selous Game Reserve within three years, from 1986-1989, elephant populations plummeted 70%, from 100,000 to 30,000. Black rhinos were largely extirpated.²⁹ As a result of losses to poaching and the inability of wildlife management authorities to bring poaching under control, Tanzania lobbied hard for the ban on international ivory sales within CITES in 1989.³⁰

Under the ban, Tanzania's elephant populations recovered. Until recently Tanzania held 47 percent of East Africa's elephants, and was considered to be

²⁵ Elephant Database, "Tanzania, 2012 ("2013 Africa" Analysis)," http://www.elephantdatabase.org/preview_report/2013_africa/Loxodonta_africana/2012/Africa/Eastern_Africa/Tanzania.

²⁶ CITES, "United Republic of Tanzania."

²⁷ Maasai Association, "The Maasai People," <http://www.maasai-association.org/maasai.html>.

²⁸ "Tanzania National Parks Corporate Plan: Optimization of Tanapa Potential 2008/09-2012/13".

²⁹ *Rolf D. Baldus, Rudolf Hahn, and Catherine Picard, "Community Based Conservation in Tanzania," in A Practical Summary of Experiences after Three Decades of Community-Based Wildlife Conservation in Africa: What Are the Lessons Learnt?, ed. Rolf D. Baldus (Budapest: FAO and CIC, 2009).*

³⁰ Lucas Liganga, "Why Tanzania Needs a Smarter, All Combating Anti-Poaching Drive," in *The Citizen* (18 November 2013), <http://www.thecitizen.co.tz/News/Why-Tanzania-needs-a-smarter-all-combating-anti-poaching-drive/-/1840374/2078252/-/item/3/-/c5mebgz/-/index.html>.

globally important within the international elephant SES.³¹ The Selous Game Reserve and broader ecosystem alone held half of the elephants in Tanzania, and was the second largest population in on the continent.³² In 2006, the year the current poaching crisis began in Tanzania, estimates suggest the country held over 142,000 elephants. By 2009 that number dropped to 109,022, a decrease of 33,776 elephants, or over 11,000 per year.³³

The decline occurred primarily within the Selous Game Reserve, broader Selous-Mikumi, and cross-border Selous-Niassa ecosystems.³⁴ Between 2009-2013 populations in the reserve declined by another 66 percent.³⁵ In one large-scale seizure of 11 tons of ivory, all of the elephants came from the Selous-Niassa ecosystem, representing over 1,600 elephants.³⁶ Selous ivory is considered particularly valuable, according to media reports, “making the gross value of Selous’ elephants worth billions and thus attracting illegal businesses, organized crime networks, corrupt officials, terrorist groups and others to risk poaching.”³⁷ According to the EIA the “trafficking chain from the Selous to the main markets in China has emerged as the single largest conduit for ivory in the world.”³⁸ Another poaching hotspot developed around the Ruaha National Park and surrounding ecosystem. From 2008-2014 the area lost

³¹ Mduma et al. J. J. Blanc et al., African Elephant Status Report 2007: An Update from the African Elephant Database, (Gland, Switzerland: IUCN, 2007), <https://portals.iucn.org/library/efiles/documents/SSC-OP-033.pdf>.

³² Mduma et al; EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

³³ CITES, "United Republic of Tanzania."

³⁴ Ibid.

³⁵ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

³⁶ Ibid.

³⁷ Guardian, "Special Report: Why Anti-Poaching Campaign Ineffective," in *IPPmedia.com* (10 February 2014), <http://www.ippmedia.com/frontend/index.php?l=64654>.

³⁸ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

10,000 elephants.³⁹ An unpublished report from the Great Elephant Census suggests Ruaha lost 50 percent of its remaining elephants, around 4,000, in 2014, while as many as 12,000 were killed outside the park.⁴⁰ Most recent estimates suggest Tanzania has lost at least half of its elephants since 2007, placing the population around 70,000, though it could be as low as 40,000.⁴¹ As much as 90% of elephant mortality in Tanzania is related to poaching.⁴² Under acute threat by commercial poachers, without significant shifts in governance and usage of resources within the SES, the SES will become progressively less able to absorb disturbances or recover.⁴³

While overall Tanzania has lost a significant percentage of its elephants in the last decades, those losses are relatively isolated to southern Tanzania. Parks and conservation areas in the north of the country have seen an increase in elephant populations.⁴⁴ For example, a 2014 census revealed elephants in the Serengeti-Mara ecosystem increased by 266% since 1986. The population in the ecosystem is around 7,500 elephants.⁴⁵ In northern Tanzania the largest populations of elephants exist in the Tarangire–Manyara ecosystem, which includes Tarangire National Park.⁴⁶ Conservationists fear that poachers will move across Tanzania to other populations of elephants once those in Southern

³⁹ Morrison.

⁴⁰ ITV News, "Exposed: Tanzania's Elephant Killing Fields," in *ITV.com* (23 April 2015), <http://www.itv.com/news/2015-04-23/exposed-tanzanias-elephant-killing-fields/>.

⁴¹ Morrison.

⁴² EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

⁴³ Scheffer and Carpenter, "Catastrophic Regime Shifts in Ecosystems: Linking Theory to Observation."

⁴⁴ Mduma et al.

⁴⁵ Tanzania National Parks, "Massive Increase of Elephants in Serengeti-Mara Ecosystem Recorded," 22 August 2014 <http://www.tanzaniaparks.com/news/census.html>.

⁴⁶ Goldman, "Partitioned Nature, Privilege Knowledge: Community-Based Conservation in Tanzania."

Tanzania have been depleted, making the seeming security of the northern circuit parks illusory.⁴⁷

Tanzania is heavily dependent on the elephant SES for foreign revenue generation. Tourism accounts for 17 percent of the country's GDP, around \$2 billion per year, and employs more than 300,000 people.⁴⁸ Approximately one million tourists visit Tanzania each year, up 80 percent from the early 1990s.⁴⁹ The government recognizes tourism as a leading engine of growth and an important tool to fight poverty.⁵⁰ The wildlife sector provides about 40 percent of Tanzania's foreign exchange earnings.⁵¹

Tanzania places a premium on the ability to utilize resources, and does not discriminate philosophically against consumptive use.⁵² The government actively promotes hunting of wild animals, and at the international level proposed the sale of its stockpiled ivory until international pressure and the revelation of large scale losses from poaching forced a retraction in 2013.⁵³ The largest in the world, Tanzania's stockpile contains 34,000 tusks worth \$230 million on the Chinese

⁴⁷ ITV News.

⁴⁸ Ashery Mkama, "Tanzania: Summit on Jumbos Scheduled for Dar," in *AllAfrica.com* (21 March 2014), <http://allafrica.com/stories/201403210095.html>.

⁴⁹ Prince-Josh Adams, "Agency Drive Government to Declare Poaching a 'National' Disaster," in *IPPmedia.com* (3 August 2014), <http://www.ippmedia.com/frontend/index.php?l=70625>.

⁵⁰ Mduma et al; S. L. Slocum and K. F. Backman, "Understanding Government Capacity in Tourism Development as a Poverty Alleviation Tool: A Case Study of Tanzanian Policy-Makers," *Tourism Planning and Development* 8, no. 3 (2011).

⁵¹ Jafari R. Kideghesho, "Who Pays for Wildlife Conservation in Tanzania and Who Benefits?," in *Governing Shared Resources: Connecting Local Experience to Global Challenges, the Twelfth Biennial Conference of the International Association for the Study of Commons* (Cheltenham, England 2008).

⁵² Fred Nelson, Rugemeleza Nshala, and W. A. Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management," *Conservation and Society* 5, no. 2 (2007): 232.

⁵³ African Wildlife Foundation, "African Wildlife Foundation Commends Tanzanian Government's Decision to Withdraw Cites Proposal to Sell Ivory Stockpile," 28 January 2013 <http://www.awf.org/news/tanzanias-elephants-receive-reprieve-ivory-trade-proposal-withdrawn>.

black-market.⁵⁴ The domestic trade in ivory is proscribed, though large illegal domestic markets continue to exist.⁵⁵

Governance System and Resource Users

The SESF provides several lenses useful for examining Tanzania's complex SES. The SESF stresses how examinations of past and present patterns of interactions within the SES explain the current state of the system. In Tanzania governance authorities and resources users have interacted in the system through a pattern of centralization, exclusion, and exploitation developed during the colonial era and continued post-Independence.⁵⁶

The SESF stresses the importance of cross-level and cross-scale interactions, and the role of endogenous and exogenous factors, in shaping the SES. Tanzania's SES cannot be understood without examining interactions between exogenous factors, including shifts in the international conservation agenda over time, from fortress style conservation to liberalization, devolution, and community based conservation, and endogenous factors such as the deep-seated corruption within Tanzania's wildlife governing authorities.⁵⁷ Liberalization and devolution, tools to increase the values of wildlife and land and incentivize conservation, have actually sped up degradation of the resource system and

⁵⁴ Martin Fletcher, "Haul of Shame: This Shocking Photo Shows for the First Time the Biggest Stockpile of Illegal Ivory on Earth," in *Daily Mail* (22 March 2014), <http://www.dailymail.co.uk/news/article-2586894/WORLD-PICTURE-EXCLUSIVE-Haul-shame-This-shocking-photo-shows-time-biggest-stockpile-illegal-ivory-earth.html#ixzz3YLbuxXoG>.

⁵⁵ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

⁵⁶ Ostrom, "Frameworks and Theories for Environmental Change."

⁵⁷ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

created perverse incentives for recentralization, further exclusion, and rent seeking. Liberalization has created incentives for park and PA expansion and for the exploitation of wildlife resources by government officials. Devolution, implemented through poorly managed community-based conservation (CBC) initiatives across the country, has led to intense conflicts between communities and conservation authorities, and between communities and wildlife.

As the SESF notes, rules, regulations, laws and investments surrounding wildlife conservation reflect how governing authorities value wildlife. Despite accepting considerable donor aid for conservation, Tanzania continues to pursue policies aimed more squarely at centralization of resources, and exploitation of resources, and has pursued every effort to capture the increasing value of wildlife made possible through liberalization at the central government level. As implemented in Tanzania, regulatory mechanisms meant to conserve wildlife have imperiled it, creating the impression that exploitation and accumulation, not conservation, are the preference.⁵⁸

Colonial Governance Structures

Colonial governance of wildlife under both German and British rule followed the general model of colonial wildlife management across Africa, which emphasized centralization of control over wildlife, state ownership of land and wildlife, and exclusion of local peoples from the utilization of land and resources

⁵⁸ B. H. Walker, N. Abel, J. M. Anderies, and P. Ryan, "Resilience, Adaptability, and Transformability in the Goulburn-Broken Catchment, Australia," *ibid.* 14, no. 1 (2009).

and from the decision-making processes guiding management.⁵⁹ The strategies for managing people and resources within the SES crafted under colonial leadership have shaped both how the SES is currently managed by conservation authorities, and utilized and valued by resource users. The emphasis on economic gains to wildlife and the capture of revenue by central authorities help explain resource depletion in the SES.

German colonial authorities developed two major avenues for protection of wildlife, mainly restricting utilization by native peoples, and creating a system of protected areas.⁶⁰ ⁶¹ They created fourteen PAs before the First World War. While communities were still able to live in these areas, their ability to utilize wildlife was significantly diminished.⁶² After WWI ended the British took over control of the colony, further centralizing control of wildlife resources. The British established first Game Department in 1919, and in 1923 the transferred all land and wildlife resources to the Crown.⁶³ By 1930 Tanzania's most famous protected areas had been set aside- the Serengeti, Ngorongoro Crater, the Selous, and Mt Kilimanjaro.⁶⁴

Under both the Germans and the British the international conservation community, at its most nascent stages, emerged as an important force in shaping wildlife legislation and priorities in Tanzania.⁶⁵ The German Frankfurt Zoological

⁵⁹ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

⁶⁰ Ibid.

⁶¹ Baldus, Hahn, and Picard, "Community Based Conservation in Tanzania."

⁶² Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

⁶³ Ibid. Kjekshus, *Ecology Control and Economic Development in East African History: The Case of Tanganyika, 1850-1950*.

⁶⁴ R. P. Neumann, *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa* (Berkeley and Los Angeles: University of California Press, 1998).

⁶⁵ Ibid.

Society (FZS) was instrumental in creating the Serengeti and the Ngorongoro Conservation Area (NCA).⁶⁶ This work was supported later by a British organization, the Society for Preservation of Flora and Fauna of the Empire.⁶⁷ Sustained pressure from these and other European conservation organizations pushed the colonial authorities to continue to restrict resource use rights of local communities and the strengthening of laws, rules and regulations supporting PAs.⁶⁸ They advocated for strict preservationist models of fortress-style conservation, which removed all customary land rights from communities within the parks. In 1959 revisions to the Game Ordinance embraced fortress-style conservation, and colonial authorities began large-scale removals to establish parks.⁶⁹ Ultimately over 50% of protected areas in Tanzania involved some type of evictions.⁷⁰

As Independence approached in 1961 colonial conservation officials developed two strategies to protect wildlife in the post-independence period. The first strategy involved courting international conservation organizations and foreign governments to support wildlife conservation, in particular the recently formed World Wildlife Fund, African Wildlife Foundation, and the International

⁶⁶ Fred Nelson and Sinandei Ole Makko, "Communities, Conservation, and Conflicts in the Tanzanian Serengeti," in *Natural Resources as Community Assets: Lessons from Two Continents*, ed. Martha West Lyman and Brian Child (Madison, WI: Sand County Foundation, 2005).

The FZS remains influential within Tanzania and continues to provide considerable financial and technical assistance to the running of conservation areas.

⁶⁷ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management," 237.

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

⁷⁰ Brockington, "Preserving the New Tanzania: Conservation and Land Use Change."

Union for the Conservation of Nature (IUCN).⁷¹ The decision to reach out to international NGOs was fueled by two concerns. One, officials feared for the safety of wildlife and habitats under African rule. Two, they anticipated the challenge of funding wildlife conservation faced by African governments faced with priorities of development and national consolidation. By including international NGOs, officials hoped to develop a funding stream, which would support wildlife programs.⁷² The second strategy involved promoting tourism to support conservation through the generation of foreign currency receipts. These two strategies, stressing the economic value of wildlife, were meant to ensure that wildlife conservation remained a priority for the independent government.⁷³

Management of the SES Post-Independence

The post-Independence government embraced the strategies for both revenue generation and conservation put in place by colonial officials.⁷⁴ The administration followed the colonial model provided, resting on outside support through donor funding and tourism to support conservation programs.⁷⁵

Tanzania continues to shape its conservation concerns squarely around

⁷¹ The African Wildlife Leadership Foundation (AWFL) was established pre-independence to train African conservation officials to take over management of the country's parks. In 1963 the organization established a training college, the College of African Wildlife Management (CAWM) in Mweka, Tanzania to educate all of the African managers in Britain's colonies to manage parks. The International Union for the Conservation of Nature (IUCN) continues to fund the university. Arielle Levine, "Convergence or Convenience? International Conservation Ngos and Development Assistance in Tanzania," *World Development* 30, no. 6 (2002). Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

⁷² "The Evolution and Reform of Tanzanian Wildlife Management."

⁷³ Ibid.

⁷⁴ Ibid., 237.

⁷⁵ Tor A. Benjaminsen et al., "Wildlife Management in Tanzania: State Control, Rent Seeking and Community Resistance," *Development and Change* 44, no. 5 (2013).

economic value, whether through photo tourism, hunting, or the sale of its ivory, and remains heavily dependent on donor funds to support conservation.⁷⁶ The government allocates less than one percent of the national budget to wildlife, despite its importance for revenue generation, meaning governing authorities must rely on receipts from tourism and donor funds to operate.⁷⁷ Conservation organizations fund around 90 percent of conservation programs.⁷⁸

Tanzania's first post-independence wildlife legislation, the 1974 Wildlife Conservation Act (WCA), continued the colonial policies of restricting resource use and gazzettment of large conservation areas in national parks and game reserves.⁷⁹ Wildlife remained under the purview and ownership of the central government. The 1974 WCA did not attempt to either reinstate traditional use rights to land or wildlife and did not establish a mechanism to guarantee community management of wildlife or access to resources.⁸⁰ It actually restricted further the ability of small hunter-gatherer groups to hunt in parks, which had been allowed under colonial legislation. Under the WCA, power remained with central authorities, giving the president the authority to declare any land in the country a game reserve, and the Director of National Parks the power to declare partial reserves and game controlled areas, requiring no input from local

⁷⁶ Acheson, "Institutional Failure in Resource Management."

⁷⁷ J. R. Kideghesho and P. E. Mtoni, "The Potentials for Co-Management Approaches in Western Serengeti, Tanzania," *Tropical Conservation Science* 1, no. 4 (2008). CITES, "United Republic of Tanzania."

⁷⁸ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management," 237.

⁷⁹ *Ibid.*

⁸⁰ *Ibid.*, 239.

communities.⁸¹ The WCA did, in theory, allow for local communities to use resources in game controlled areas and undesignated lands. However, in practice the government consistently privileged commercial use of lands controlled by central state authorities over those controlled by local communities, in particular the provisioning of hunting licenses, rarely allocated to local communities, to capture most of the revenue.⁸²

Governing Authorities

Wildlife resources in Tanzania have become increasingly valuable through the adoption of neo-liberal conservation. As such, governance relates directly to the commodification of resources and the capture of revenues generated through their commodification. Revenue is generated in two ways: through photo and hunting tourism in PAs and through foreign donor support. As such, authorities are driven to both expand PAs to increase opportunities for accumulation, and actively seek donor support. The struggle to capture revenues has influenced how resources are governed and exploited, in particular the centralization and recentralization of control over wildlife, and has shaped the relations between communities and conservation authorities.⁸³

⁸¹ A. R. Mkumbukwa, "The Evolution of Wildlife Conservation Policies in Tanzania During the Colonial and Post-Independence Periods," *Development Southern Africa* 25, no. 5 (2008).

⁸² Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management," 239.

⁸³ Nelson and Agarwal, "Patronage or Participation? Community Based Natural Resource Management Reform in Sub-Saharan Africa."

Tanzania's large resource system is managed through multiple government agencies and increasingly through partnerships with NGOs and other public-private initiatives. Many areas experience multiple and overlapping governance authorities.⁸⁴ The primary government body overseeing the management of wildlife in Tanzania is the Ministry of Natural Resources and Tourism (MNRT). The MNRT manages wildlife through multiple agencies including the Tanzania National Parks Authority (TANAPA), the Wildlife Division (WD), **Ngorongoro Conservation Area Authority**, and the Tanzania Wildlife Research Institute (TAWIRI).⁸⁵ Each agency is responsible for a different aspect of Tanzania's system of PAs.

TANAPA and the WD are the primary government bodies responsible for wildlife conservation and management. TANAPA is a parastatal responsible for managing and protecting the country's national parks, located primarily in the north.⁸⁶ The agency is mandated to expand existing parks, and to create new national parks, setting the organization up for conflicts with communities surrounding existing parks.⁸⁷ TANAPA has further responsibility for poverty reduction and the management of community-based conservation (CBCs) ventures in areas surrounding parks.⁸⁸ The WD manages the rest of the country's wildlife on private lands, communal lands, wetlands, in game reserves, and in game controlled areas. The WD allocates all hunting concessions in Tanzania,

⁸⁴ Wayne Lotter and Krissie Clark, "Community Involvement and Joint Operations Aid Effective Anti-Poaching in Tanzania," *Parks* 20, no. 19-28 (2014). James Igoe, "Human Rights, Conservation and the Privatization of Sovereignty in Africa - a Discussion of Recent Changes in Tanzania," *Policy Matters* 15 (15 July 2007).

⁸⁵ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

⁸⁶ "Tanzania National Parks Corporate Plan: Optimization of Tanapa Potential 2008/09-2012/13".

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*, 24-25.

and has a significant role in how Wildlife Management Areas (WMAs) are governed.⁸⁹ WMAs are areas set aside on village land for wildlife conservation and only sustainable use of resources, and are controlled by CBCs.⁹⁰ The purpose of WMAs, according to Ministry documents, is “to enable the local communities living in villages to participate in the protection and utilization of wildlife resources on village land.”⁹¹ The WD also holds responsibility for storing the nation’s stockpile of ivory, the largest in the world.⁹² The Director of the Wildlife Division is appointed directly by the president.⁹³

TAWIRI produces and provides scientific information to the various services on the health of wildlife and habitats; conducts community education programs; and is the CITES designated Scientific Authority in Tanzania.⁹⁴ TAWIRI is responsible for monitoring the country’s wildlife through its Conservation Information and Monitoring Unit (CIMU), which collects information on the number and distribution of wildlife, trends in illegal killing and animal movements, and human activities within PAs. CIMU operates across about a third of Tanzania’s landmass.⁹⁵ TAWIRI is also responsible for producing the country’s elephant management plans, first introduced in 1995 and later updated in 2010. The plans address “management of elephants in PAs, population

⁸⁹ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

⁹⁰ Andrew J. Bamford, Daniella Ferrol-Schulte, and Jennifer Wathan, "Human and Wildlife Usage of a Protected Area Buffer Zone in an Area of High Immigration," *Oryx* 48, no. 4 (2014).

⁹¹ Ibid. Ministry of Natural Resources and Tourism (MNRT), *The Wildlife Conservation (Wildlife Management Areas) Regulations* (Dar es Salaam, Tanzania: Government Printer, 2002).

⁹² EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania’s Elephants".

⁹³ Ibid.

⁹⁴ Barrow, Gichohi, and Infield, "The Evolution of Community Conservation Policy and Practice in East Africa." Marc Nkwame, "Tanzania: Second Phase Elephant Census on Cards," in *AllAfrica.com* (4 March 2014), <http://allafrica.com/stories/201403040023.html>.

⁹⁵ CITES, "United Republic of Tanzania."

numbers and trends, community involvement in elephant conservation, utilization, law enforcement and control of ivory, international obligations, and monitoring and research.”⁹⁶

NGOs, along with some prominent intergovernmental organizations like the UNDP, UNESCO and others, have seen their role in conservation in Tanzania continue to grow. Since the 1980s conservation NGOs have increased from a few dozen to nearly 2,000. Currently the head offices of 31 international conservation organizations operate in Tanzania.⁹⁷ As in Kenya, NGOs are deeply involved in every aspect of conservation, from monitoring populations to investigating poaching and to running community based conservation programs. NGOs are roundly criticized by scholars of the history of conservation in Tanzania for supporting the central government agenda, and their own agenda, over the interests of communities.⁹⁸ Many scholars writing on Tanzania note the links between the explosion of NGOs in Tanzania, and more broadly across the continent, and neo-liberal conservation agendas, which emphasize privatization, economic benefits, and the goal of making wildlife pay for itself.⁹⁹ The result of the adoption of this agenda has been “the commodification of environmental and conservation processes, the reduction in size and capacity of state bureaucracies, the replacement of state functions by civil society (often international NGOs), and the liberalization of investment opportunities in the

⁹⁶ Ibid.

⁹⁷ Brockington, "Preserving the New Tanzania: Conservation and Land Use Change."

⁹⁸ Igoe, "Human Rights, Conservation and the Privatization of Sovereignty in Africa - a Discussion of Recent Changes in Tanzania."

⁹⁹ Levine, "Convergence or Convenience? International Conservation Ngos and Development Assistance in Tanzania."

conservation/tourism sector."¹⁰⁰ Others note the influence of international conservation NGOs in the romanticization of wild landscapes devoid of people, and the naturalization of that landscape in the overall narrative, which can be used to push people out of wild areas.¹⁰¹ Goldman argues NGOs have been particularly important in shaping local Africans as wildlife villains.¹⁰² NGOs continue to supported the eviction of locals from parks and shape local peoples as a threat to wildlife.¹⁰³

NGOs have emerged as key interlocutors shaping Tanzania's conservation and development agenda, in particular in the community-based conservation arena, which the international conservation community pushes aggressively.¹⁰⁴ Donors provide millions of dollars to Tanzania, largely in support of CBC efforts, though they are increasingly involved in large scale anti-poaching efforts.¹⁰⁵ The cross-scalar influence of these organizations shape policies in the SES, which may improve SES resilience, or ignore local factors and inadvertently degrade SES resilience, depending on the area of influence.¹⁰⁶

¹⁰⁰ Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispossession in Tanzania."

¹⁰¹ Brockington, "Preserving the New Tanzania: Conservation and Land Use Change."

¹⁰² Goldman, "Partitioned Nature, Privilege Knowledge: Community-Based Conservation in Tanzania."

¹⁰³ Tor A. Benjaminsen et al., "Wildlife Management in Tanzania: State Control, Rent Seeking and Community Resistance," *ibid.* 44 (2013).

¹⁰⁴ Guardian, "Undp: Community Involvement Crucial in Fight against Poaching," in *IPPmedia.com* (12 May 2014), <http://www.ippmedia.com/frontend/index.php?l=67750>.

¹⁰⁵ Nelson and Agarwal, "Patronage or Participation? Community Based Natural Resource Management Reform in Sub-Saharan Africa."

¹⁰⁶ Ostrom, "Frameworks and Theories for Environmental Change."

Decentralization and Devolution

Reform within the wildlife management sector occurred within the context of broader decentralization and liberalization initiatives taken on by Tanzania since the late 1980s and the international movement towards CBCs initiated in the 1980s and 1990s.¹⁰⁷ After the devastating poaching epidemic of the 1980s, and the intense and expensive law enforcement strategy launched to end it, Tanzania began to recognize it needed a comprehensive strategy to deal with poaching that included community participation in wildlife management.¹⁰⁸ The poaching epidemic in the late 1970s and 1980s illustrated to the conservation community in Tanzania and elsewhere that “fortress conservation” could not protect wildlife living outside of protected areas.¹⁰⁹ Moreover, policymakers, heavily influenced by foreign donors and international NGOs, acknowledged that state ownership of wildlife was not conducive to community conservation and in fact degraded community incentives to conserve wildlife and habitats.¹¹⁰ As a result, the government began to shift focus away from providing protections primarily in national parks and game reserves and instead to focus on community lands.¹¹¹ Reforms embraced the notion of devolution and decentralization of authority over wildlife, and pushed the development of CBCs as key components

¹⁰⁷ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

¹⁰⁸ Alexander N. Songorwa, "Community-Based Wildlife Management (Cwm) in Tanzania: Are the Communities Interested?," *World Development* 27, no. 12 (1999).

¹⁰⁹ Baldus, Hahn, and Picard, "Community Based Conservation in Tanzania."

¹¹⁰ Ibid. Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

¹¹¹ Barrow, Gichohi, and Infield, "The Evolution of Community Conservation Policy and Practice in East Africa."

of conservation.¹¹² As in Kenya, the rhetoric of decentralization and local control of wildlife resources has not lived up to its promise.¹¹³

Devolution

Two very important differences exist in terms of the management of wildlife resources on community lands between Tanzania and Kenya. First, Tanzania developed a national level land policy in 1995, followed by supporting legislation over the next decade. While under the laws the state retained ownership of communal land, the reforms attempted to establish more accountable mechanisms to manage land at the community level.¹¹⁴ Tanzania recognizes customary land tenure as well as collective management through incorporated villages, individual ownership, and private commercial ownership of land. By contrast Kenya has only recently embarked on the process of land tenure reform and the development of a national land policy. The impacts of these policies are as of yet unknown.¹¹⁵

Second, Tanzania quickly developed the supporting policies necessary to allow for the local management of wildlife. The Wildlife Policy of 1998 specifically identified the key role community based conservation (CBCs) should play in managing wildlife on community lands, and began laying out a framework for

¹¹² Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

¹¹³ Benjaminsen et al., "Wildlife Management in Tanzania: State Control, Rent Seeking and Community Resistance."

¹¹⁴ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

¹¹⁵ USAID.

implementation. The legislation provided villages the tools to manage wildlife at the local level through a uniform framework. The policy reforms recommended detailed local management mechanisms, in the form of Wildlife Management Areas (WMAs) managed through the WD, to include local communities in decisions on how to utilize wildlife resources either through hunting, wildlife viewing, game cropping, or wild meat harvesting. The legislation devolved authority over wildlife to rural communities and private landholders through the WMAs, allowing communities to manage the wildlife inhabiting their own lands, and take a greater role in tourism, to include a greater role in hunting concessions, and in revenue generation and revenue sharing.¹¹⁶

The Wildlife Policy specifically acknowledged the importance of communities benefitting directly from hunting concessions and tourist enterprises, and highlighted the intention to create more opportunities for communities to manage wildlife on their own lands for their own benefit.¹¹⁷ The reforms designated 25 percent of revenues from hunting concessions flow back to communities.¹¹⁸ As a result of the policy reforms and the general movement towards community based conservation, CBCs sprung up under TANAPA and the WD, and “there was a widespread perception in Tanzania that wildlife management was on the brink of significant and far-reaching change.”¹¹⁹

¹¹⁶ Baldus, Hahn, and Picard, "Community Based Conservation in Tanzania." Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

¹¹⁷ "The Evolution and Reform of Tanzanian Wildlife Management."

¹¹⁸ Ibid.

¹¹⁹ Ibid.

Recentralization

Despite the rhetoric around devolution and the value of CBCs, Tanzania has consistently undermined its own legislation and recentralized wildlife policy through rules and regulations from almost the moment the Wildlife Policy of 1998 took effect.¹²⁰ Conservation authorities pursue strategies that reap the greatest monetary benefit for the central government, and the greatest opportunities for rent-seeking. The way revenues are allocated for certain types of conservation—in this instance hunting allocations and later all tourism on community lands—make those strategies less desirable for those seeking short term gains from wildlife.¹²¹ Some failures of governance authorities to conserve natural resources can be explained by the behavior of government officials and politicians who act in their own interests vice those of the resource system as a whole.¹²² Within the central government, interests exist which push for the centralization of wildlife control, including elites who want to protect patronage networks, and those who want to protect Treasury flows from hunting concessions.¹²³

While WMAs were originally meant to be a tool for rural poverty alleviation and empowerment, they became a vehicle for elite predation.¹²⁴ According to Baldus, the framework to form WMAs passed by the WD in 2000 was made intentionally complex in order to force local communities to seek outside financial

¹²⁰ Baldus, Hahn, and Picard, "Community Based Conservation in Tanzania."

¹²¹ Acheson, "Institutional Failure in Resource Management."

¹²² K. Cook and M. Levi, *The Limits of Rationality* (Chicago: University of Chicago Press, 1990).

¹²³ Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispossession in Tanzania."

¹²⁴ Benjaminsen et al., "Wildlife Management in Tanzania: State Control, Rent Seeking and Community Resistance," 1095.

and technical assistance to move forward.¹²⁵ The rules required communities to go through a rigorous and bureaucratic process of initiating and financing land studies, evaluations, and assessments.¹²⁶ The regulations also required a three-year renewal of all ventures, meaning even when communities could attract an investor to create a lodge or other tourism venture, they could not guarantee renewal.¹²⁷ Moreover, the WD gave itself authority to revoke agreements, essentially removing any ability of communities to manage lands. The WD did not devolve any authority over hunting concessions to local communities under the rules and regulations, and communities received no legal right to claim revenues from hunting, even when it occurred on community lands.¹²⁸ The WD even refused to translate the Wildlife Policy into Swahili for local consumption for several years, after which copies were still withheld from circulation. Locals were unable to access the policy and exercise their rights under the law.¹²⁹

Ultimately the administrative processes were crafted in such a way to “increased central control over wildlife and reduce the rights of rural communities.”¹³⁰ As Nelson et al. note, “The result is the perpetuation of the basic challenges facing wildlife management in rural areas- namely declining wildlife populations as a result of lack of local incentives to conserve the

¹²⁵ Baldus, Hahn, and Picard, "Community Based Conservation in Tanzania."

¹²⁶ Ibid.

¹²⁷ Ibid.

¹²⁸ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management," 234.

¹²⁹ Baldus, Hahn, and Picard, "Community Based Conservation in Tanzania."

¹³⁰ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management," 232.

resource- and new conflicts occurring in some rural areas over village land and resource rights.”¹³¹

Throughout the 2000s as tourism and tourism revenues steadily increased in Tanzania, the WD continued to centralize control of resources to capture the most revenue. In 2007 the WD passed the “Non-Consumptive Utilization of Wildlife Regulations,” which revised the Wildlife Policy, dropping the focus on community participation altogether.¹³² The regulations stipulate that all non-consumptive wildlife use on village lands, in game reserves, and in GCAs must be approved by the Wildlife Director. Under the regulations game drives, walking safaris, and other photo tourism activities were forbidden without the permission of the WD.¹³³ Communities lost the ability to directly negotiate contracts with tourism operators, limiting significantly their ability to manage wildlife resources or to benefit from them.¹³⁴ The regulation also shifted revenue-sharing mechanisms, requiring tourism operators to turn over fees, set by regulation, for all operations directly to the central government for later allocation to communities.¹³⁵ These changes significantly reduced revenue for communities, which had directly negotiated with tour companies. Because the legislation did not include requirements of transparency, local communities had no way of knowing how much revenue they should have been allocated for their full

¹³¹ Ibid., 247.

¹³² Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispassion in Tanzania." Benjaminsen et al., "Wildlife Management in Tanzania: State Control, Rent Seeking and Community Resistance."

¹³³ "Wildlife Management in Tanzania: State Control, Rent Seeking and Community Resistance."

¹³⁴ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

¹³⁵ Katherine A. Snyder and Emmanuel B. Sulle, "Tourism in Maasai Communities: A Chance to Improve Livelihoods?," *Journal of Sustainable Tourism* 19, no. 8 (2011).

revenue share.¹³⁶ These regulations contradict the spirit of the 1998 Wildlife Policy, which clearly aimed at devolving authority to communities.¹³⁷ Devolution is meant to foster links between communities and wildlife and strengthen SES resilience by incentivizing conservation. Undermining those linkages by placing all responsibility for management, and benefits of management, at higher tiers of organization within the SES remove incentives for conservation with potentially disastrous impacts on wildlife.¹³⁸

The process of recentralization continued in 2009 when Tanzania adopted a new Wildlife Conservation Act (WCA), which strengthened central control of wildlife and increased the Wildlife Division's authority to intervene in community management of wildlife.¹³⁹ The act made grazing in Game Controlled Area illegal, which served to dispossess Maasai of traditional grazing areas.¹⁴⁰ The new act included "little mention of participation, development and benefits for local communities."¹⁴¹ The Act gives the Wildlife Minister the ability to designate wildlife corridors, dispersal areas, buffer zones and migratory routes.¹⁴²

The regulations undermine every goal of devolution; limit the potential for economic benefit to communities; limit the ability of communities to participate in the management of wildlife; decrease transparency; and remove key incentives

¹³⁶ Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispossession in Tanzania."

¹³⁷ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

¹³⁸ Folke, "Social–Ecological Systems and Adaptive Governance of the Commons."

¹³⁹ Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispossession in Tanzania."

¹⁴⁰ Ibid.

¹⁴¹ Benjaminsen et al., "Wildlife Management in Tanzania: State Control, Rent Seeking and Community Resistance," 1095.

¹⁴² T. Jones et al., "Vanishing Wildlife Corridors and Options for Restoration: A Case Study from Tanzania," *Tropical Conservation Science* 5, no. 4 (2012).

for community based conservation. Importantly, the regulations threaten the ability of communities to benefit economically from tourism.¹⁴³ While the massive loss of elephants Tanzania experienced over the past six years cannot be entirely attributed to failures of devolution, by dispossessing local resource users the government systematically undermined social actors within the system who, under a different governance structure, might have more quickly identified and addressed perturbations in the SES. Disconnected from most benefits, and bearing a disproportionate level of the burden, resource users had little incentive to address transformation in the system.

Several scholars argue the government never intended to devolve authority over wildlife to local communities.¹⁴⁴ The high values of wildlife on communal lands ultimately undermined the devolution reforms process because actors in the central government worked to recapture revenues.¹⁴⁵ The rise in values of land and wildlife disincentivize movements towards devolution and encourages elites and the central government to tighten control. Ironically, “tourism is a leading source of such incentives to re-centralize and expropriate local resources, even as tourism is seen as a means to alleviate rural poverty and create positive local incentives for environmental conservation.”¹⁴⁶ Devolution threatened rent-seeking opportunities and the opportunity for

¹⁴³ Snyder and Sulle, "Tourism in Maasai Communities: A Chance to Improve Livelihoods?."

¹⁴⁴ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management." Baldus, Hahn, and Picard, "Community Based Conservation in Tanzania." Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispossession in Tanzania."

¹⁴⁵ Nelson and Agarwal, "Patronage or Participation? Community Based Natural Resource Management Reform in Sub-Saharan Africa."

¹⁴⁶ Fred Nelson, "Blessing or Curse? The Political Economy of Tourism Development in Tanzania," *Journal of Sustainable Tourism* 20, no. 3 (2012): 370.

accumulation through dispossession. Ultimately, if implemented, devolution threatened to result in losses of revenue and control within central authorities. As wildlife and land became more valuable, the costs of giving up control increased.¹⁴⁷ Nelson argues the main driver behind reforms to the Wildlife Policy in 1998, which clearly articulated goals of community participation, was to attract foreign donor support, not to actually implement a more inclusive and devolved policy.¹⁴⁸

Weak Laws and Enforcement

The failure of devolution and the recentralization of control over wildlife resources occurred within the context of an unmitigated poaching crisis, weak laws, low enforcement rates, low seizure rates, failed anti-poaching operations and serious mismanagement and corruption within both wildlife governance and within the overall political establishment.

Until 2009, the country relied on the 1974 WCA for protections, under which few prosecutions ever occurred. Only ten people were convicted of elephant poaching from 2001-2009, when more than 40,000 elephants were poached. Those convicted received sentences ranging from 18-60 months, and fines around \$110.¹⁴⁹ In one of the largest ivory seizures on record, a 2009 seizure of 11 tons of ivory, no prosecutions occurred despite significant evidence

¹⁴⁷ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

¹⁴⁸ Ibid., 239.

¹⁴⁹ CITES, "United Republic of Tanzania."

of collusion between customs agents and ivory traffickers. The case file was eventually lost and no prosecutions occurred.¹⁵⁰ According to the EIA “the convoluted judicial process rarely leads to a successful prosecution and deterrent” for poachers caught in Tanzania. Fines are small, jail time is minimal, and few poachers arrested face any penalty at all. Less than 10 percent of those arrested are successfully prosecuted. An EIA report notes that from 2009-2014 only one case involving a major ivory seizure has led to a significant detention. Other cases, through more often successful than in the past, continue to lead to small fines and short jail terms.¹⁵¹

The 2009 WCA is significantly stronger, though loopholes exist, and few poachers and even fewer traffickers have been prosecuted. A 2012 study suggests chronic poachers face a .07 percent chance of arrest over the course of their poaching career. When they are arrested, prison sentences are very short, and fines low.¹⁵² Judges retain a fine option, which can be levied instead of jail time, allowing well connected poachers the opportunity to buy their way out of jail. Placing snares or other traps for wildlife is punishable by as little as two years in jail, or payment of a fine.¹⁵³ While elephant poaching can be prosecuted under the Economic and Organized Crime Control Act and can carry sentences of up to 15 years, such sentences are almost unheard of.¹⁵⁴ Another significant loophole exists within Zanzibari wildlife legislation. The primary wildlife law active

¹⁵⁰ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

¹⁵¹ Ibid.

¹⁵² Knapp, "Why Poaching Pays: A Summary of Risks and Benefits Illegal Hunters Face in Western Serengeti, Tanzania."

¹⁵³ Library of Congress, "Wildlife Trafficking and Poaching: Tanzania," <http://www.loc.gov/law/help/wildlife-poaching/tanzania.php#Wildlife>.

¹⁵⁴ CITES, "United Republic of Tanzania."

in Zanzibar, the Forest Resources Management and Conservation Act (FRMCA) No.10 of 1996, only protects wildlife naturally occurring on the islands. As such, African elephants receive no protections in Zanzibar, contributing to its emergence as a major trafficking hub.¹⁵⁵

According to the EIA, between 2002 and 2010 all ivory seizures of Tanzanian ivory over one ton occurred after the ivory left the country. Between 2009-2014, 22.6 tons of ivory was seized in the country, while over 40 tons was intercepted elsewhere.¹⁵⁶ This is evidence of weak enforcement.

Where large-scale enforcement has occurred, it has been problematic. Operation Kipepo (Kiswahili for butterfly), an anti-poaching mission launched against poachers in the Selous in 2009, resulted in some arrests, though very high levels of killing continued in the reserve. According to CITES, officials within the operation were found to be involved with illegal killings, including some highly placed WD officials.¹⁵⁷ The 2013 Operation Tokomeza Ujangili' (Eliminate Poaching) led to the arrests of 1,030 suspected poachers and the seizure of weapons and ivory.¹⁵⁸ Originally touted as successful, the operation was suspended after concerns over human rights abuses were raised when villagers were robbed, beaten, forced from their homes, and in some cases killed by security forces.¹⁵⁹ While the government claimed the Operation was suspended

¹⁵⁵ DLA Piper, Empty Threat: Does the Law Combat Illegal Wildlife Trade?, (2014), <http://www.dlapiperprobono.com/export/sites/pro-bono/downloads/pdfs/Illegal-Wildlife-Trade-Report-2014.pdf>.

¹⁵⁶ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

¹⁵⁷ CITES, "United Republic of Tanzania."

¹⁵⁸ "Tanzania: Kikwete - War on Poaching to Go On," in *AllAfrica.com* (1 January 2014), <http://allafrica.com/stories/201401020039.html?viewall=1>.

¹⁵⁹ "Tanzania: Four Ministers Removed from Their Posts," in *AllAfrica.com* (20 December 2013), <http://allafrica.com/stories/201312210146.html?viewall=1>.

due to human rights abuse, suspicion emerged among the conservation community and within the media that highly placed politicians involved in the ivory trade sabotaged the operation.¹⁶⁰ After the operation was suspended, officials claimed 60 elephants were killed in one month.¹⁶¹

Institutional challenges within TANAPA and the WD further challenge enforcement. The government does not adequately fund any of its wildlife departments, with rippling effects across the enterprise in terms of both equipment and staff.¹⁶² The impacts in TANAPA and the WD are illustrated by the underutilization of modern technology and equipment; poor training; inadequate staff; lack of staff services, including lack of HIV/AIDS training programs; and poor information sharing about wildlife, including death rates, information on human wildlife conflict incidents, and animal behavior.¹⁶³ Small budgets create challenges for attracting tourists. According to TANAPA documents, parks are not realizing the full potential of tourism revenues due to lack of infrastructure, diversification, weak marketing, weak visitor centers and “ineffective management of external pressures.”¹⁶⁴ TANAPA’s community outreach programs and CBCs face multiple challenges due to weak relationships with surrounding communities; the failure to link community development to conservation; inadequate benefits sharing mechanisms; lack of a mechanism to ensure communities enjoy user-rights to resources; and poor relationships

¹⁶⁰ Ibid.

¹⁶¹ BBC, "Africa's Elephants under Imminent Threat of Extinction," in *SpyGhana.com* (1 January 2014), <http://www.spyghana.com/africas-elephants-under-imminent-threat-of-extinction/>.

¹⁶² Kideghesho and Mtoni, "The Potentials for Co-Management Approaches in Western Serengeti, Tanzania."

¹⁶³ Mduma et al.

¹⁶⁴ "Tanzania National Parks Corporate Plan: Optimization of Tanapa Potential 2008/09-2012/13".

between park staffs and others in the conservation community.¹⁶⁵ These weaknesses have created challenges for developing resilient management systems within the SES.

Wildlife cannot be protected without an adequate ranger force. According to media reports the government employs less than half of the 4,000 rangers required to protect the country's wildlife.¹⁶⁶ TANAPA employs an average of one ranger per 50 km², while the WD fields one scout per 139 km².¹⁶⁷ In the Selous Game Reserve, hit the hardest by poaching, the budget allocates \$3/km², a mere fraction of the \$200-400/km² required for anti-poaching.¹⁶⁸ The relative security of elephant populations under TANAPA authority is increasingly under question, as media reports suggest that one park under the agency's control, the Ruaha NP, lost 4,200 elephants in 2014, half its total population.¹⁶⁹ Elephant populations have plummeted in areas controlled by the WD.

The corruption within the WD is entrenched to the point the department can be considered as criminalized or captured. Criminalization refers to the routinization of criminal acts within a government,¹⁷⁰ while capture refers to the way in which elites "have been able to manipulate policy formation and even shape the emerging rules of the game to their own advantage."¹⁷¹ In addition to crafting rules and regulations recentralizing control over wildlife resources in

¹⁶⁵ Ibid., 24-25.

¹⁶⁶ Pius Rugonzibwa, "Tanzania: Gov't Seeks Donor Support to Combat Poaching," in *AllAfrica.com* (4 February 2014), <http://allafrica.com/stories/201402040788.html>.

¹⁶⁷ CITES, "United Republic of Tanzania."

¹⁶⁸ Ibid.

¹⁶⁹ ITV News.

¹⁷⁰ Jean-Francois Bayart, Stephen Ellis, and Beatrice Hibou, *The Criminalization of the State in Africa* (Oxford, Bloomington and Indianapolis: James Currey and Indiana University Press, 1999).

¹⁷¹ Gastrow.

order to facilitate rent-seeking within the department, WD officials have also been accused of selling ivory from the national stockpile, as well as direct involvement in poaching and trafficking.¹⁷² They divert funds from hunting concessions, and engage in rent seeking through their role in overseeing CBNRM programs in WMAs. The park services are known to move rangers who too closely investigate corruption within the wildlife service in order to silence them.¹⁷³

The WD's management of hunting concessions illustrates their preference for shortterm maximization of rents over any conservation goals, and how the capture and criminalization of key agencies can impact resource management. In order to increase profits from the sale of hunting concessions, the WD has continuously both added hunting concessions and subdivided existing ones.¹⁷⁴ While similar hunting blocks in other African countries were valued in the hundreds of thousands of dollars Tanzania's blocks were allocated for \$7,500 each, raising questions over how much money exchanged hands behind the scenes.¹⁷⁵ In thirty years, from 1967-1997, the WD increased the number of hunting blocks by nearly three times, from 47 to over 140. At the same time, the WD did not reduce hunting quotas, but instead allocated each subdivided block with the same quotas as the original blocks, in affect multiplying by many times the amount of wildlife offtake allowed. In addition, game cropping, game capture,

¹⁷² EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

¹⁷³ Guardian, "Special Report: Why Anti-Poaching Campaign Ineffective - li," in *IPPmedia.com* (11 February 2014), <http://www.ippmedia.com/frontend/index.php?l=64701>.

¹⁷⁴ Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispassion in Tanzania."

¹⁷⁵ Baldus, Hahn, and Picard, "Community Based Conservation in Tanzania."

and local hunting licences continued to be apportioned in these same areas, exacerbating the problem further.¹⁷⁶

Tanzania's early decision to deeply embed international conservation organizations and their respective agendas into national conservation policies, first driving fortress-conservation and later neoliberal conservation, and to adopt the principle that wildlife must pay for itself, has impacted the attitudes and actions of all resource users, from government rent seekers to poachers and people living within WMAs.¹⁷⁷

Resource Users

Resource users' interactions with conservation authorities and the resource system have been shaped by patterns and processes, which emerged during the colonial era, and mirrored in the post-independence era. These privilege both government agendas and the international conservation agenda over the rights of local resource users. As resource values have been driven up through the adoption of neoliberal conservation and the commodification of natural resources, Tanzanian communities have progressively lost authority and rights over resources, degrading norms for conservation and undermining conservation goals.¹⁷⁸ As the SESF literature suggests, by ignoring important

¹⁷⁶ African Hunting Info, "Tanzania Plans a New Wildlife Authority," <http://www.africanhuntinginfo.com/en/home/news/287-tanzania-plans-a-new-wildlife-authority>.

¹⁷⁷ Young.

¹⁷⁸ Nelson and Agarwal, "Patronage or Participation? Community Based Natural Resource Management Reform in Sub-Saharan Africa." Baldus, Hahn, and Picard, "Community Based Conservation in Tanzania." Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing,

interactions between users and the system, in this case the loss of resource rights and social marginalization, governing authorities may inadvertently impose policies, which exacerbate, instead of address, perturbations with the SES.¹⁷⁹

Community-based conservation was adopted as the primary mechanisms to both maintain wildlife and habitats in wildlife dispersal areas and on community lands. A central tenet of CBCs is their contribution to the economic and social wellbeing of communities living within CBC areas.¹⁸⁰ As a model of neo-liberal conservation, revenues from wildlife are expected to pay for all the costs associated with the programs. Additionally, communities have to be interested and willing to participate.¹⁸¹ The government's deliberate recentralization of authority over wildlife, and purposefully onerous demands on local communities attempting to benefit from wildlife, made creating the conditions required for success impossible, with potentially irreversible impacts on conservation norms, relations between communities and governing authorities, and relations between communities and wildlife.

Within the current SES, communities feel they bear all of the costs of wildlife conservation, and share in none of the benefits.¹⁸² The failure of the government to live up to its promise to devolve authority over wildlife to local communities, coupled with the inconsistent and generally weak performance of CBS and the simultaneous expansion of protected areas onto communal lands,

and Accumulation by Dispassion in Tanzania." Goldman, "Partitioned Nature, Privilege Knowledge: Community-Based Conservation in Tanzania."

¹⁷⁹ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

¹⁸⁰ Songorwa, "Community-Based Wildlife Management (Cwm) in Tanzania: Are the Communities Interested?."

¹⁸¹ Ibid.

¹⁸² Ibid.

fostered an atmosphere of intense conflicts between communities and conservation authorities and wildlife.

Licit Resource Users

As in Kenya, rural communities of agriculturalists and pastoralists in Tanzania exist within wildlife dispersal areas and abut national parks and game reserves.¹⁸³ Largely poor and dependent on rain-fed agriculture, these communities are in many ways stressing the landscape and degrading wildlife habitats through intensive farming, deforestation, fencing, and poaching for bush meat. In-migration in response to over-crowding in more productive landscapes is increasing the population in the rangelands, and increasing human-wildlife conflict.¹⁸⁴ In some areas community lands surrounding parks have as much wildlife as the parks themselves, creating significant potential for local resource users to capture revenues.¹⁸⁵

However, despite the similarities with Kenya, in many ways Tanzania was better prepared to protect wildlife and contribute to rural development through utilization of its wildlife resources due to the early recognition of the role of communities in conservation, the development of legislation to protect communal land rights and the supporting policy to enable community wildlife management.

¹⁸³ IFAD, *Investing in Rural People in the United Republic of Tanzania*, (Rome: International Fund for Agricultural Development, 2014),

<http://www.ifad.org/operations/projects/regions/pf/factsheets/tanzania.pdf>. Knapp, "Why Poaching Pays: A Summary of Risks and Benefits Illegal Hunters Face in Western Serengeti, Tanzania."

¹⁸⁴ "Why Poaching Pays: A Summary of Risks and Benefits Illegal Hunters Face in Western Serengeti, Tanzania."

¹⁸⁵ Nelson, Nshala, and Rodgers, "The Evolution and Reform of Tanzanian Wildlife Management."

The failures of the conservation authorities over the last decade and a half to implement these policies, on top of the lingering distrust of conservation authorities stemming from colonial era expulsions and centralization of wildlife authority, may have transformed attitudes amongst resource users beyond repair.

Whereas in Kenya communities were left out of wildlife conservation almost entirely, lacking rights to either land or resources, in Tanzania the very association of communities with wildlife management has soured attitudes of communities both towards conservation officials and wildlife and conservation generally, leading to some of the same outcomes evident in Kenya in terms of degradation of the landscape, intensive resistance to conservation, and significant loss of biodiversity and habitats.

Pilot Projects and Early Success

Communities experienced significant early successes with liberal conservation. Community-based conservation was pioneered in Tanzania as part of the Selous Conservation Program (SCP) in 1987, funded and administered in part by German NGOs. Initially the project was limited to the Selous with the goals of strengthening management of the park, and promoting sustainable use of wildlife to drive rural development. Almost immediately similar programs started in the Serengeti, followed later by programs across the country. Communities looked to the passage of the 1998 Wildlife Policy and land reforms

as a positive step forward in what had been a process of “silent devolution.”¹⁸⁶ The shift in policy in Tanzania was meant to create a more inclusive style of community conservation with active participation in the management of the landscape in crafting and enforcing wildlife protections by communities.¹⁸⁷ By 2000, 19 wildlife management areas controlled by local CBCs has been established.¹⁸⁸

These early CBCs were inclusive, transparent, and directly benefited communities through jobs, the provision of game, and a sense of ownership of the process and outcomes of conservation.¹⁸⁹ Villages began to negotiate directly with safari companies as market forces took hold in the wildlife industry throughout the 1990s. Direct negotiations allowed communities to bypass the WD and capture all of the negotiated revenues. Villages near the Serengeti negotiated agreements for as much as \$55,000 per year. Communities were able to control the revenues and prioritize community service projects per local preferences, gaining a sense of ownership.¹⁹⁰ The progress of these CBCs to both improve livelihoods and maintain habitats was undermined by the passage of rules and regulations recentralizing control over wildlife resources on community lands. The rules and regulations took away the right of communities to directly negotiate with tour operators, and restricted all tourist activities outside of national parks and the NCA not approved through the WD, making all such

¹⁸⁶ Didi, "Devolution of Wildlife Management in Kenya to Enhance Community Participation: An Assessment of Kenyan Legal Frameworks."

¹⁸⁷ Goldman, "Partitioned Nature, Privilege Knowledge: Community-Based Conservation in Tanzania."

¹⁸⁸ Baldus, Hahn, and Picard, "Community Based Conservation in Tanzania."

¹⁸⁹ Ibid.

¹⁹⁰ Nelson and Makko, "Communities, Conservation, and Conflicts in the Tanzanian Serengeti."

ventures lacking WD approval illegal, and significantly decreasing the revenue share for local communities.

Despite the policies of recentralization the government and the conservation community continued to push CBCs on village lands throughout the 2000s. However, literature on community-based conservation in Tanzania suggests that both CBCs run through the WD and those associated with NGOs and other donors suffer significant challenges in achieving the primary objectives of CBCs, that is, maintain wildlife and habitats and contributing to economic and social wellbeing of communities. They may in fact be undermining conservation norms and sewing distrust in communities. Their performance is uneven; management structures are not inclusive; they routinely ignore local knowledge and norms of conservation management; and they include steep opportunity costs.

Considerable disparities exist across CBCs in terms of revenue generation and benefits sharing.¹⁹¹ For example, between 1992 and 2003, Serengeti National Park (SNP) generated US \$31 million from tourism but only 1.6% was allocated to adjacent villages for socio-economic development projects.¹⁹² In some areas individuals may receive as little as \$2.50 per year as a revenue sharing portion.¹⁹³ Communities in areas where hunting occurs benefit very little from hunting revenues. Most hunting revenues accrue to government officials,

¹⁹¹ Sachedina and Nelson, "Protected Areas and Community Incentives in Savannah Ecosystems: A Case Study of Tanzania's Maasai Steppe."

¹⁹² Kideghesho and Mtoni, "The Potentials for Co-Management Approaches in Western Serengeti, Tanzania," 348.

¹⁹³ Abiud Kaswamila, "An Analysis of the Contribution of Community Wildlife Management Areas on Livelihood in Tanzania," in *Sustainable Natural Resources Management*, ed. Abiud Kaswamila (Rijeka, Croatia: InTech, 2012).

government agencies, firms, and elites. The money, which flows to agencies does not trickle down. Only around three percent of revenues reach local communities.¹⁹⁴

The level of community involvement also varies considerably. WMAs in particular have not become vehicles for community participation in decision-making as outlined in the 1998 Wildlife Policy. Their very creation depended on the authority of the central government and a decision by the Minister in charge. In practice, most authority resides with the central government as communities depended on program staff at higher headquarters for allocation of resources and to make basic decisions.¹⁹⁵ As a result, control is re-embedded at the level of the central government.¹⁹⁶ Councils are often not consulted about land-use planning whether it is for conservation or development.¹⁹⁷ In some cases the community is left out entirely as decisions are made by NGOs or the WD. Where “communities” are included that may actually mean the chief or village leaders make choices.¹⁹⁸ In other instances tour operators have come into areas without consulting communities at all. They do not negotiate agreements, and have no revenue-sharing mechanism.¹⁹⁹ Community members may not even understand

¹⁹⁴ Economists at Large, *The \$200 Million Question: How Much Does Trophy Hunting Really Contribute to African Communities?*, (Melbourne: African Lion Coalition, 2013), <http://www.ifaw.org/sites/default/files/Ecolarge-2013-200m-question.pdf>.

¹⁹⁵ Goldman, "Partitioned Nature, Privilege Knowledge: Community-Based Conservation in Tanzania." Songorwa, "Community-Based Wildlife Management (Cwm) in Tanzania: Are the Communities Interested?."

¹⁹⁶ "Community-Based Wildlife Management (Cwm) in Tanzania: Are the Communities Interested?."

¹⁹⁷ Kideghesho and Mtoni, "The Potentials for Co-Management Approaches in Western Serengeti, Tanzania," 348.

¹⁹⁸ Songorwa, "Community-Based Wildlife Management (Cwm) in Tanzania: Are the Communities Interested?."

¹⁹⁹ Kaswamila, "An Analysis of the Contribution of Community Wildlife Management Areas on Livelihood in Tanzania."

that the goal of conservation programs is to conserve resources- they may be far more interested in how to access resources. They may think programs mean more access to hunting and legal rights to harvest, not less.²⁰⁰ Resource users within WMAs and may not even realize they live in a WMA, may receive no benefits from wildlife management and no revenue sharing.²⁰¹ Benefits schemes often lack local input, meaning money flows to projects not considered priorities in a community.²⁰² Local communities are ultimately marginalized from the conservation process and have had little influence on reforms to the system.²⁰³

Not only are communities generally left out of decision-making, but conservation authorities both during the colonial era and in the present, routinely ignore traditional and indigenous knowledge of wildlife and landscape management systems.²⁰⁴ For example, the strict emphasis on zone-based planning pushed by conservation authorities, both the government and NGOs, “contradicts the fluid nature of wildlife movements as well as those of pastoral herds, and therefore risks further disrupting both pastoral practices and wildlife movements.”²⁰⁵ By ignoring local knowledge, preferences, and management strategies that can benefit both human and wildlife communities, conservation

²⁰⁰ Songorwa, "Community-Based Wildlife Management (Cwm) in Tanzania: Are the Communities Interested?."

²⁰¹ Jones et al., "Vanishing Wildlife Corridors and Options for Restoration: A Case Study from Tanzania."

²⁰² Kaswamila, "An Analysis of the Contribution of Community Wildlife Management Areas on Livelihood in Tanzania."

²⁰³ Nelson and Agarwal, "Patronage or Participation? Community Based Natural Resource Management Reform in Sub-Saharan Africa."

²⁰⁴ Mara J. Goldman, "Partitioned Nature, Privilege Knowledge: Community-Based Conservation in Tanzania," *ibid.* 34, no. 5 (2003). Jafari R. Kideghesho, "The Potentials of Traditional African Cultural Practices in Mitigating Overexploitation of Wildlife Species and Habitat Loss: Experience of Tanzania," *International Journal of Biodiversity Science & Management* 5, no. 2 (2009).

²⁰⁵ Goldman, "Partitioned Nature, Privilege Knowledge: Community-Based Conservation in Tanzania."

officials ultimately assert their own agendas at the expense of communities.²⁰⁶ This exclusion has eroded interest in conservation and in participating in sustainable land use practices.²⁰⁷

While the social and economic benefits of CBCs are uneven, costs of community participation are often very high. They include “loss of access to legitimate and traditional rights, damage to crops and other properties, livestock depredation, and risk posed to people’s lives through disease transmission and attacks by wild animals.”²⁰⁸ Coercive and often violent operations to protect wildlife and habitats meted out onto communities is another significant cost associated with conservation.²⁰⁹ In some communities people feel they bear all the burden for conservations, including loss of property, rights, harassment by game officials, and marginalization, and none of the benefits.²¹⁰

Failures to devolve actual authority over wildlife management to local communities, along with the poor performance of CBCs generally, has implications for the survival of wildlife and the feasibility of community based conservation. One failed conservation initiative can create negative perceptions of all conservation organizations and initiatives in an area, with rippling effects spatially and across time.²¹¹

²⁰⁶ Ibid.

²⁰⁷ "Strangers in Their Own Land: Maasai and Wildlife Conservation in Northern Tanzania."

²⁰⁸ D. T. K. Shemwetta and J. R. Kideghesho, "Human-Wildlife Conflicts in Tanzania: What Research and Extension Could Offer to Conflict Resolution" (paper presented at the 1st University Wide Conference, 2000), 569.

²⁰⁹ Guardian, "Special Report: Why Anti-Poaching Campaign Ineffective".

²¹⁰ Ibid.

²¹¹ Goldman, "Strangers in Their Own Land: Maasai and Wildlife Conservation in Northern Tanzania."

Park Expansion

Over the same period that Tanzania introduced and pushed the adoption of CBCs, (and simultaneously rolled back most benefits associated with them), the country consistently increased the total land area under some form of protection in order to capture increases in value accruing to the commodification of wildlife.²¹² As the values of wildlife and landscapes increased on the global market, both the Tanzanian government and private investors have an incentive to create new PAs and to expand existing ones, that is, to preserve resources for the use of tourists at the expense of local communities.²¹³ Because the president retains the right to allocate land without consultation with local communities, the conversion of communal lands to conservation amounts to “land grabbing” by the government.²¹⁴ Expansion threatens local communities with eviction or dispossession. Land available for human use in Tanzania is significantly limited by the provision of large amounts of territory for the use of wildlife. As more land gains some levels of protection, local peoples are cut off from their ability to gather wood, utilize water resources, harvest building materials, farm, or graze animals.²¹⁵

Evictions have occurred since the colonial era and relate to colonial style “fortress conservation.” Evictions target the economically and politically least

²¹² Brockington, "Preserving the New Tanzania: Conservation and Land Use Change."

²¹³ Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispossession in Tanzania."

²¹⁴ Nelson, "Blessing or Curse? The Political Economy of Tourism Development in Tanzania."

²¹⁵ Alicia Davis, "Ha! What Is the Benefit of Living Next to the Park? Factors Limiting in-Migration Next to Tarangire National Park, Tanzania," *Conservation and Society* 9, no. 1 (2011).

advantaged peoples, often pastoralists like the Maasai.²¹⁶ Among others, the Maasai were removed to create the Serengeti and their land use rights were restricted in the NCA. They are currently under threat from the allocation of massive hunting concessions on their communal lands. The 2009 WCA made grazing in hunting concessions illegal, meaning the Maasai lose their rights to pursue preferred livelihood strategies without consultation or compensation. In 2015 the government attempted to remove as many as 40,000 people to make way for a lion hunting concession. Some groups have been evicted from areas multiple times as more and more land gains protected status.²¹⁷

Dispossession occurs when community land use rights are restricted on community lands through recentralization.²¹⁸ As Benjaminsen notes, dispossession involves the exclusion of some users, primarily local peoples, and the capital accumulation of other users, primarily rent seekers within government, tourism operators, conservation organizations, and the State Treasury.²¹⁹

Resistance to Conservation

These interactions have resulted in a loss of trust and erosion of conservation norms, pushing communities into intense conflict with conservation

²¹⁶ Yeager and Miller, *Wildlife, Wild Death: Land Use and Survival in Eastern Africa*.

²¹⁷ "Tanzania Breaks Promise - Thousands of Maasai Evicted to Make Way for Lion Hunt," in *The Ecologist* (27 February 2015), http://www.theecologist.org/News/news_analysis/2771261/tanzania_breaks_promise_thousands_of_maasai_evicted_to_make_way_for_lion_hunt.html.

²¹⁸ Goldman, "Strangers in Their Own Land: Maasai and Wildlife Conservation in Northern Tanzania."

²¹⁹ Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispossession in Tanzania."

authorities and wildlife. Increasingly communities are turning to defensive tactics to stop what they consider “land grabbing” by conservation authorities. In this way parks and protected areas can become “perilous” to wildlife protections when communities feel they threaten their livelihoods, in particular in the context of the failure to devolve authority and the recentralization of control currently underway in Tanzania.²²⁰ As such the social structures designed to conserve wildlife ultimately lose resilience to absorb or address perturbations in the system, with impacts on the stability of the system as a whole.²²¹

These policies have created a sense of distrust among Tanzanians towards the wildlife establishment and a deep-seated fear of conservationists, researchers, and wildlife officials.²²² Local people feel often betrayed by the conservation process.²²³ They believe conservation authorities will kick them off their land and replace them with animals. For Maasai and others, the term “conservation area” equates to “government owned,” and has become synonymous with the loss of grazing, farming, and other land use rights.²²⁴

Scholars note the growing perception among resource users that conservation infringes on human rights “through the exclusion of local people as knowledgeable active participants in management, policy formation, and decision-making processes in land that ‘belongs’ to them and on which their

²²⁰ Sachedina and Nelson, "Protected Areas and Community Incentives in Savannah Ecosystems: A Case Study of Tanzania's Maasai Steppe."

²²¹ Walker, "Resilience, Adaptability, and Transformability in the Goulburn-Broken Catchment, Australia."

²²² Sachedina and Nelson, "Protected Areas and Community Incentives in Savannah Ecosystems: A Case Study of Tanzania's Maasai Steppe."

²²³ Goldman, "Strangers in Their Own Land: Maasai and Wildlife Conservation in Northern Tanzania."

²²⁴ "Partitioned Nature, Privilege Knowledge: Community-Based Conservation in Tanzania."

livelihoods depend."²²⁵ These policies alienate people from wildlife, as in Kenya, removing norms of preservation and the responsibility to protect wildlife. Wildlife has shifted from something to be valued to something to be feared.²²⁶ Communities begin to look on wildlife as intruders, or as a burden, or as a threat to their livelihood.²²⁷ Disputes with conservation authorities can lead to intense human wildlife conflict as communities begin to hate wildlife and feel that conservation threatens their existence.²²⁸

Resistance to park expansion can include the purposeful killing of protected species. Since 2009, elephant poaching inside Tarangire Park, in which over 30 elephants were killed, has been attributed to protests by local peoples.²²⁹ In some areas in dispute between conservation officials and communities, wildlife has dropped by as much as 50 percent. Locals do not intercede to stop poaching, and may engage in poaching in an attempt to clear their land of wildlife.²³⁰ Local resentment of conservator policy can lead to violent confrontations between locals and state officials, and locals and wildlife.²³¹ In some instances communities have become so resentful of wildlife that they intentionally kill animals. In one particularly egregious incident in 2009, villagers

²²⁵ "Strangers in Their Own Land: Maasai and Wildlife Conservation in Northern Tanzania."

²²⁶ Kjekshus, *Ecology Control and Economic Development in East African History: The Case of Tanganyika, 1850-1950*.

²²⁷ Goldman, "Partitioned Nature, Privilege Knowledge: Community-Based Conservation in Tanzania."

²²⁸ Mugini Jacob, "Tanzania: Villagers to Be Paid over Farm Losses," in *AllAfrica.com* (24 July 2015), <http://allafrica.com/stories/201407240939.html>.

²²⁹ Kideghesho et al., "Emerging Issues and Challenges in Conservation of Biodiversity in the Rangelands of Tanzania."

²³⁰ Hassan Sachedina and Fred Nelson, "The Development of Payments for Ecosystem Services as a Community-Based Conservation Strategy in East Africa," in *Integrating Ecology and Poverty Reduction: The Application of Ecology in Development Solutions*, ed. Jane Carter Ingram, Fabrice DeClerck, and Cristina Rumbaitis del Rio (New York: Springer, 2012).

²³¹ Brockington, "Preserving the New Tanzania: Conservation and Land Use Change."

forced six elephants off a cliff.²³² Feelings of marginalization or disempowerment within the conservation process fuel these reactions.²³³ Communities that do not benefit from wildlife are glad when animals are killed.²³⁴ People begin to feel that wildlife is more important than people and sometimes retaliate against the animals, in particular elephants.²³⁵

Locals are increasingly adopting defensive tactics to halt the growth of PAs. Villagers consider loss of land and use rights as a direct threat to their livelihoods, which creates an incentive to expand lands under cultivation as a strategy to stop PA expansion.²³⁶ Maasai, to avoid the reallocation of their land, have begun claiming ownership of land and farming it. Farming and “using” land has become a strategy to prevent authorities from claiming lands for wildlife. “Defensive farming’, farming specifically in wildlife inhabited areas, acts as a mechanism to keep parks from encroaching on territory.²³⁷ Intensive and widespread farming can threaten wildlife when it occurs on an intensive scale in key wildlife areas through landscape degradation and an increase in human wildlife conflict.²³⁸

²³² Rachel Nuwer, "Why a Tanzanian Village Chased Six Elephants Off a Cliff," in *Smithsonian.com* (22 December 2014), <http://www.smithsonianmag.com/smart-news/why-tanzanian-village-chased-six-elephants-cliff-180953692/#RAYy8KCBkfzAE78C.99>.

²³³ Ibid.

²³⁴ Guardian, "Special Report: Why Anti-Poaching Campaign Ineffective - li".

²³⁵ "Special Report: Why Anti-Poaching Campaign Ineffective".

²³⁶ Sachedina and Nelson, "Protected Areas and Community Incentives in Savannah Ecosystems: A Case Study of Tanzania's Maasai Steppe."

²³⁷ Ibid. Davis, "Ha! What Is the Benefit of Living Next to the Park? Factors Limiting in-Migration Next to Tarangire National Park, Tanzania."

²³⁸ "Ha! What Is the Benefit of Living Next to the Park? Factors Limiting in-Migration Next to Tarangire National Park, Tanzania."

Illicit Users

Patterns and processes evident within the global SES, including both institutionalized and informal corruption, weak laws and an absence of effective enforcement measures, intense distrust of conservation officials and enmity towards wildlife, and increasing values to wildlife, facilitate the illicit trade in Tanzania.²³⁹ These processes help explain why poachers and traffickers have operated in the country with impunity for over a decade.

Because of the volume of ivory exiting Tanzania, a significant amount of information has been produced on how the illicit trade operates in Tanzania, from the names of corrupt politicians, shippers involved in moving ivory, village markets and local poachers involved in killing wildlife, and smuggling routes commonly utilized.

The criminal networks involved in poaching and trafficking are both extensive and well connected to the political elite.²⁴⁰ According to the EIA,

“Corruption is a key enabling factor at every stage of the ivory trafficking chain: from game rangers who provide information on patrol patterns and the location of elephant herds, to police officers who rent out weapons and transport ivory, to the Tanzanian Revenue Authority (TRA) officers which allow shipping containers of ivory to flow out of the country’s ports.”²⁴¹

²³⁹ Lotter and Clark, "Community Involvement and Joint Operations Aid Effective Anti-Poaching in Tanzania."

²⁴⁰ K"oyoo Nick, "East Africa: We Are Poaching East Africa's Game to Extinction," in *AllAfrica.com* (29 March 2014), <http://allafrica.com/stories/201403310398.html?viewall=1>.

²⁴¹ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania’s Elephants". 9.

The ruling political party, the Chama Cha Mapinduzi (CCM), operates across the poaching chain. Four CCM members accused of poaching, all from the Selous area, were publicly named by the Minister of Natural Resources and Tourism, but were never investigated. Other high ranking officials have been found with tusks. The secretary general of the CCM owned one of the shipping companies involved in transporting ivory from Tanzania to Vietnam in 2009.²⁴² Police officers have also been involved in poaching and trafficking.²⁴³ High-level wildlife officials are known to take the ivory from elephants that died of natural causes or that have been poached but their ivory not removed without permits or documentation.²⁴⁴ Networks also include middlemen who consolidate shipments and arrange for transport out of the country. These networks can involve any number of corrupt officials from the wildlife sector, local and national police, customs agents, and politicians.²⁴⁵ Even members of the clergy have been implicated as significant players.²⁴⁶ Syndicates may be funded by a small group of individuals who facilitate the process from behind the scenes.²⁴⁷

²⁴² Ibid. Christina Russo, "Q&A: Report Alleges Governments' Complicity in Tanzanian Elephant Poaching," in *National Geographic News* (10 November 2014), <http://news.nationalgeographic.com/news/2014/11/141108-tanzania-ivory-smuggling-china-world-elephants-animals/>.

²⁴³ James Wainaina and Ng'ang'a Thairu, "Kenya: Two Police Officers Deny Having Elephant Tusks, out on Bond," in *AllAfrica.com* (8 May 2014), <http://allafrica.com/stories/201405080958.html>.

²⁴⁴ Guardian, "Special Report: Why Anti-Poaching Campaign Ineffective".

²⁴⁵ Paul Tyson, "Exposed: The Brutal World of Tanzania's Illegal Ivory Poaching Industry," in *ITV.com* (4 March 2015), <http://www.itv.com/news/2015-03-04/exposed-brutal-world-of-tanzanias-illegal-ivory-poaching-industry/>. EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

²⁴⁶ Kilasa Mtambalike, "Anti-Poaching Drive Cripples Ivory Syndicates," in *Daily News* (5 April 2015), <http://www.dailynews.co.tz/index.php/local-news/43375-anti-poaching-drive-cripples-ivory-syndicates>.

²⁴⁷ Ibid.

Unlike in Kenya, mass killing incidents are common in Tanzania, though rarely publicized. Entire herds are decimated by large poaching gangs, sometimes comprised of as many as 100 people including the poachers, cooks, drivers, porters, navigators, and security details. These are typically heavily armed gangs who may spend as long as three weeks poaching in a single area.²⁴⁸ As has become common across Africa, poachers in Tanzania are known to use sub machine guns, AK-47s, shotguns, pistols, poison, spikes, arrows, and snares to kill elephants.²⁴⁹ Tanzanian poachers are also known to kill elephants in Tsavo and Amboseli in Kenya, and are thought to be deeply implicated in the large-scale poaching which has taken place in the Niassa Game Reserve in Mozambique since 2009. Poachers are also known to attack and rob tourists.²⁵⁰ According to local media reports, poachers can make as much as \$300 for selling a tusk to a middle man who can then make up to \$1400 selling to traffickers in Dar es Salaam.²⁵¹

Ivory is typically moved from harvest points via motorcycle with through local villages on the outskirts of reserves, where traffickers and poachers meet up to exchange goods and cash. The ivory then moves by personal vehicle or bus to Dar es Salaam for consolidation and packing to fill large orders.

²⁴⁸ EIA, "Open Season: The Burgeoning Illegal Ivory Trade in Tanzania and Zambia". 3.

²⁴⁹ Mugini Jacob, "Tanzania: Police Seize Guns in Operation to Recover Illegal Firearms," in *AllAfrica.com* (9 May 2014), <http://allafrica.com/stories/201405090385.html?viewall=1>.

²⁵⁰ Raphael Mwadime, "Kenya: Tanzanian Poachers Cross Borders - Police," *ibid.* (1 August 2014), <http://allafrica.com/stories/201408011489.html>. Nick Brandt, "Big Life Brings Down Leader of Amboseli's Worst Poaching Gang, Killer of Elephants for Two Decades," in *BigLife.org* (18 January 2011), <https://biglife.org/news-events/big-life-brings-down-leader-of-amboseli-s-worst-poaching-gang-killer-of-elephants-for-two-decades>. "United Republic of Tanzania, Ministry of Natural Resources and Tourism: Press Release," in *WildLifeDirect.org* (19 January 2014), <http://newsroom.wildlifedirect.org/tag/ministry-of-natural-resources-and-tourism/>.

²⁵¹ Guardian, "Special Report: Why Anti-Poaching Campaign Ineffective".

Traffickers hide ivory in cargo ships mixed with licit goods such as sisal fibers, garlic, or wood, for shipment through multiple ports in Asia before reaching its final destination. Buyers and sellers from the border region between Mozambique and Tanzania, a major poaching hotspot, are known to traffic ivory through a famous tourist market in Dar Es Salaam, the Mwengi Carvers Market. Three primary ports are used to move ivory out of Tanzania, Dar es Salaam, Zanzibar, and Mombasa. Zanzibar may be the largest single ivory trafficking hub in Africa. Another trade route through Malawi to Mozambique was uncovered in 2013. Ivory originating in or passing through Tanzania ends up primarily in China, after transiting through multiple south Asian ports.²⁵²

The links to China are particularly stark in Tanzania. The EIA uncovered links between wildlife crime syndicates in southern China and ivory trafficking and wildlife crime through Zanzibar. These groups are responsible for as many as 20 shipments of ivory a year averaging between two and three tons each. The Chinese gangs work closely with trusted Tanzanian accomplices, including businessmen, members of the government and corrupt customs agents.²⁵³

Chinese diplomatic visits and missions to Tanzania have been linked on multiple occasions to increases in the volume of ivory sold. According to the EIA, Chinese embassy staff are the primary customers at illegal domestic markets. In 2013, a Chinese naval vessel visiting Dar es Salaam, set off a buying frenzy of ivory in local markets. On multiple occasions it is believed Chinese diplomats and

²⁵² EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

²⁵³ Ibid.

embassy staff have smuggle larger amounts of ivory out of the country in diplomatic bags.²⁵⁴

Adaptation and Mitigation

Pressure from the international community, culminating in the declaration of Tanzania as a member of the CITES “gang of eight” most culpable for the illicit ivory trade, pushed the country to address the threats to wildlife.²⁵⁵

Crisis can create an opportunity for positive change and controlled transformation of governance authorities and management practices to enable all components of an SES to better absorb perturbations.²⁵⁶ Tanzania’s response to the current poaching crisis, as well as the longer term threats related to HWC and severely degraded conservation norms, represents less a controlled transformation than it does a continuation of past strategies, with slight alterations. The strategies Tanzanian authorities have adopted to address the current crisis relies on the generation of revenue through donor support and tourism. These strategies include increased enforcement and reforms to wildlife legislation with a renewed emphasis on decentralization of wildlife authority. The strategy more closely binds governing authorities to donors with increased responsibility and opportunity for the latter to fund all aspects of conservation.

²⁵⁴ Ibid.

²⁵⁵ Tanzania Daily News, "Tanzania: Get the Poaching Barons Too - Call," in *AllAfrica.com* (2 January 2014), <http://allafrica.com/stories/201401020069.html>.

²⁵⁶ Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability."

Tanzania's public request of \$50 million to improve conservation has been met with overwhelming support. Commitments poured in to support every aspect of conservation from state sponsors, IGOs, NGOs, private industry, and individuals.²⁵⁷ In 2014 donors pledged to support a UNDP administered "Wildlife Conservation Basket Fund" and corresponding anti-poaching and anti-trafficking task force to address issues of conservation in Tanzania.²⁵⁸ The task force partners, including United States, China, Germany, European Union, World Bank and the UNDP, promised to provide the necessary resources to impact conservation, both through material donations and training and capacity building.²⁵⁹ Through donor support Tanzania gained access to weapons; vehicles, including trucks, helicopters and unmanned aerial vehicles; training; and infrastructure improvements, in addition to being able to take part in and co-host multiple international events focused on anti-poaching and wildlife crime.²⁶⁰

Improvements across Enforcement

Both through state governing authorities and in partnerships with conservation organizations, the government is increasing protections in PAs across the country; increasing cross-border collaboration; improving wildlife

²⁵⁷ Rugonzibwa.

²⁵⁸ "Uk Minister for Africa Upbeat About Uk-Tanzania Relations; Lends Support against Illegal Wildlife Trade," in *unapitwa.com* (July 2014), <http://www.unapitwa.com/moto/1ur0hl>.

²⁵⁹ Damas Makangale, "Tanzania in Big Coalition against Poaching," in *East African Business Week* (14 September 2014), <http://www.busiweek.com/index1.php?Ctp=2&pl=1822&pLv=3&srI=57&spl=23&cl=19>.

²⁶⁰ Mkama.

monitoring; has increased the number of arrest and prosecutions for traffickers and poachers; and has improved seizure rates.

The government is credited with leading a successful operation dubbed Operation Spider Net, which led to the arrests of traffickers, pressuring the syndicates operating in southern Tanzania.²⁶¹ The operation focused on traffickers, and according to media reports resulted in 40 cases pending in the court system involving financiers.²⁶² TANAPA is experimenting with drones in a public private partnership with the AWF as part of a nascent Private Sector Anti-Poaching Initiative (PSAPI).²⁶³ Through assistance provided by USAID and the WCS, Tanzania is implementing a law enforcement monitoring system using SMART (Spatial Monitoring and Reporting Tool) software in Ruaha, Katavi and Tarangire National Parks.²⁶⁴ In addition, TANAPA established a Rapid Response Team (RRT) to quickly address poaching hotspots.²⁶⁵ TANAPA plans to implement intensive anti-poaching training to include crime scene investigation, so that teams can deploy quickly to hot-spots, with support from NGOs.²⁶⁶

Anti-poaching programs run through NGOs and public-private partnerships have sprung up across the country, increasing the number of patrols in WMAs significantly. A well know example is a UNDP program, called

²⁶¹ Mtambalike.

²⁶² Ibid.

²⁶³ The Arusha Times, "Tanzania: Tarangire to Pilot Aerial Watch against Poaching," in *AllAfrica.com* (13 September 2014), <http://allafrica.com/stories/201409150523.html>.

²⁶⁴ Division of International Conservation US Fish and Wildlife Service, African Elephant Conservation Fund Fy2014, <http://www.fws.gov/international/pdf/project-summaries-african-elephant-2014.pdf>.

²⁶⁵ Lindy Taverner, "Nyalandu the Right Man for the Job," in *African Wildlife Trust* (20 January 2014), <http://africanwildlifetrust.org/index.php/nyalandu-the-right-man-for-the-job/>.

²⁶⁶ Pius Rugonzibwa, "Tanzania: Govt Mulls New Body, Force to Combat Poaching," in *AllAfrica.com* (6 January 2014), <http://allafrica.com/stories/201401060022.html>.

SPANSET (Strengthening Protected Area Network in Southern Tanzania), which provides equipment to ranger forces and trains them in anti-poaching methods, as well as providing infrastructure support. SPANSET focuses on the Great Ruaha Landscape (GRL) and Great Kitulo-Kipengere Landscape (GKKL). Other partnerships through PAMS and the Ruvumbu Elephant Project implement intelligence-driven anti-poaching operations to include expansion of intelligence networks and information collection, increased patrols, and interagency collaboration.²⁶⁷ With assistance from USAID, Tanzania launched the Southern Highlands and Ruaha-Katavi Protection Program (SHARPP). The Ruaha is currently one of the most threatened areas in Tanzania. The program focuses on improving livelihoods in WMAs, habitat management, and elephant monitoring and protection. Where NGOs and PPPs have developed and deployed anti-poaching operations, poaching appears to be decreasing.²⁶⁸ The government claims in some areas to have decreased poaching by as much as 56 percent.²⁶⁹

The government has also announced it will collaborate through the EAC and with Mozambique to combat cross-border poaching.²⁷⁰ The EU announced in 2015 it would provide funds to strengthen cross-border wildlife management. The funds would support both conservation initiatives and CBCs.²⁷¹ Monitoring

²⁶⁷ Lathifa Sykes and Wayne Lotter, "Tanapa Fights Elephant Poachers," in *Ujumbe magazine* 22(2013), <http://africanwildlifetrust.blogspot.com/2014/01/tanapa-fights-elephant-poachers.html>.

²⁶⁸ Lotter and Clark, "Community Involvement and Joint Operations Aid Effective Anti-Poaching in Tanzania."

²⁶⁹ ITV News.

²⁷⁰ The Arusha Times, "Tanzania: 10,000 Elephants Killed Annually by Poachers," in *AllAfrica.com* (25 October 2014), <http://allafrica.com/stories/201410270573.html>.

²⁷¹ Orton Kiishweko, "Eu Launches Plan to Minimize Killing of Elephants," in *Daily News* (20 March 2015), <http://dailynews.co.tz/index.php/local-news/42784-eu-launches-plan-to-minimize-killing-of-elephants>.

improvements have been made possible through aerial surveys as part of a continent wide elephant census funded by American billionaire Paul Allen.²⁷²

Arrests and prosecutions have improved. In 2013, a smuggling ring was uncovered through extensive police investigation. In this case, Chinese diplomats employed at the consulate in Dar es Salaam led a syndicate responsible for moving tons of ivory from Tanzania to China. While arrests of important players occurred, the diplomats fled to China and did not face prosecution.²⁷³ Some shifts in prosecutions, jail sentences, and fines began emerging in 2014 in which repeat offenders received longer sentences, between three and ten years.²⁷⁴ In one well-known example, a Chinese national found with over 700 tusks in his home received a twenty-year sentence.²⁷⁵

Seizure rates have also improved significantly in Tanzania. With donor support, the government installed special scanners to identify ivory and other trafficked wildlife at the ports facility in Dar es Salaam.²⁷⁶ In 2013, for the first time Tanzania seized more ivory within its borders than was seized outside of the country, indicating some effort to address the massive trade. That year 80% of large scale ivory seizures occurred in East Africa.²⁷⁷ Large seizures of ivory

²⁷² Kate Sommers-Dawes, "How Paul Allen's \$7 Million and Big Data Are Combating Africa's Elephant Crisis," in *Mashable.com* (31 October 2014), <http://mashable.com/2014/10/31/paul-allen-great-elephant-census/>.

²⁷³ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

²⁷⁴ Lotter and Clark, "Community Involvement and Joint Operations Aid Effective Anti-Poaching in Tanzania."

²⁷⁵ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

²⁷⁶ Apolinari Tairo, "China Is a Good Friend for Africa, Ready to Support Elephant Conservation," in *eTN Global Travel Industry News* (21 May 2014), <http://www.eturbonews.com/46018/china-good-friend-africa-ready-support-elephant-conservation>.

²⁷⁷ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

continued both within Tanzania and in Asian ports throughout 2014, indicating a continuing high level of trade.²⁷⁸

In 2014 the MNRT announced the development of a new National Wildlife Strategy, created in coordination with the UNDP.²⁷⁹ The strategy mandates further improvements to intelligence led anti-poaching operations, cross-border and interagency coordination, CBC management, awareness raising in destination countries, and law enforcement capacity.²⁸⁰

If sustained, these shifts in management practice and strategy have the potential to mitigate perturbations across the SES and possibly slow or halt the over-exploitation of the SES, allowing populations to recover and regain lost resilience.

Reforms to Wildlife Legislation

The potential for longer term shifts in SES management rest on recent changes to wildlife legislation, which again attempt to decentralize wildlife management. In 2012, the MNRT released new rules and regulations for WMAs, which began unwinding the past decade-long effort at recentralization. The 2012 regulations address some of the primary issues with previous rules and regulations, including the issues of benefit sharing and control over the allocation

²⁷⁸ BNO News, "Tanzanian Police Seize More Than 200 Elephant Tusk Pieces," in *WireUpdate.com* (31 October 2012), <http://www.wireupdate.com/2012/10/31/tanzanian-police-seize-more-than-200-elephant-tusk-pieces/>.

²⁷⁹ Sabahi, "Tanzania to Employ 500 Wildlife Conservators," in *AllAfrica.com* (23 June 2014), <http://allafrica.com/stories/201406240185.html>.

²⁸⁰ Gerhard R. Damm, "Tanzania Intensifies War against Poaching," in *African Indaba* 13, no. 1 (February 2015), <http://africanindaba.com/2015/02/tanzania-intensifies-war-against-poaching-february-2015-volume-13-1/>.

of hunting concessions. Under the new regulations, CBCs in WMAs can enter into agreements with tour operators and other investors, including hunting concerns, to utilize wildlife resources in WMAs. Though still subject to approval by the WD, the changes represent a significant shift because CBCs are allowed under the law to advertise for investors, and to be part of the selection process. The regulations also extend out the period for contracts from three to five years, making investments in operations more attractive. The regulations significantly shift the revenue sharing between the central state and local communities, allocating 75 percent of block fees to the WMAs, with the WD receiving 25 percent. For other fees associated with the hunting blocks, the WMAs receive 45 percent, with the remainder shared between the Wildlife Division, Treasury, and District government. The regulations also allow for CBCs to charge rates higher than those set by the government, if they can find investors willing to pay.²⁸¹

In 2013, the government moved to strengthen laws and address corruption and mismanagement within the WD when it passed the Tanzania Wildlife Management Authority Act. The Act replaced the WD with a new body, the Tanzania Wildlife Management Authority (TAWA). TAWA will manage game reserves, wildlife management areas, and hunting blocks in addition to performing anti-poaching functions.²⁸² According to public statements the

²⁸¹ "Long-Needed Reform for Wildlife Management Areas in Tanzania," in *Maliasili Initiatives* (18 January 2013), <http://www.maliasili.org/long-needed-reform-for-wildlife-management-areas-in-tanzania/>.

²⁸² United Republic of Tanzania, "The Tanzania Wildlife Management Authority Act," ed. Ministry of Natural Resources and Tourism (July 2013).

agency will be fully funded and autonomous, mirroring TANAPA and the NCA, and will benefit from the hiring of hundreds of additional rangers.²⁸³

Transformation of the SES

Despite some significant advances it remains difficult to determine to what extent these efforts will impact long-term conservation efforts. Current policies largely mirror past policies, with slight upgrades and additional donor support. The government remains invested in revenue generation as a solution to conservation concerns, and has increased the role of NGOs in conservation. These facts suggest continued stress on the SES as economics trumps conservation.

It is unclear if Tanzania can break with past patterns and processes to reform and transform governing authorities. In practice it appears that the strategy to combat wildlife crime does not differ significantly from previous practices and rules.

The state remains wedded to neo-liberal conservation and the commodification of its wildlife resources as a method for conservation through CBCs, despite little evidence market approaches achieve either goals of improving social and economic well-being or conserving wildlife and habitats. The MNRT publicly stated the goal of increasing revenue generation by

²⁸³ Rugonzibwa, "Tanzania: Govt Mulls New Body, Force to Combat Poaching". Ashery Mkama, "Setting Pace in Natural Resource Management," in *Daily News* (13 November 2014), <http://dailynews.co.tz/index.php/features/38214-setting-pace-in-natural-resource-management>.

around 30 percent by 2015.²⁸⁴ This would occur through increased tourism, including hunting tourism, and presumably take place in continually expanding PAs.²⁸⁵ The violent expansion of PAs continued in 2015 with mass evictions of communities to increase the number of hunting blocks available for sale on the international market. This further undermines trusts and conservation norms.

Incentives clearly remain for authorities to pursue rent seeking activities. Transferring power to local communities is akin to transferring wealth and control of resources, a difficult prospect when state institutions are not transparent and when resources are highly valued. As Benjaminsen et al. note, "The decentralization of natural resource management demands solid policies, functioning laws, accountable governments, and an engaged and informed citizenry."²⁸⁶ These are all lacking in Tanzania.²⁸⁷ Structural mechanisms to continue rent-seeking activities, though altered through the 2012 legislation, remain in place. The new TAWA, similar to the WD, has the authority to change policies in WMAs and to alter use practices in game reserves and other PAs without consultation.²⁸⁸ NGOs and IGOs have also doubled down on CBCs and the role income generating initiatives can play in conserving wildlife, without addressing the role park and PA expansion have in fomenting intense conflicts

²⁸⁴ "Setting Pace in Natural Resource Management".

²⁸⁵ Masako Melissa Hirsch, "Tanzania Officials in Dallas Say Lifting Ivory Import Ban Would Actually Help Elephants," in *Dallas News* (7 August 2014), <http://www.dallasnews.com/news/metro/20140807-tanzania-officials-visit-dallas-seek-end-to-u.s.-ivory-import-ban.ece>.

²⁸⁶ Benjaminsen et al., "Wildlife Management in Tanzania: State Control, Rent Seeking and Community Resistance."

²⁸⁷ *Ibid.*, 1088.

²⁸⁸ Lusekelo Philemon, "Tanzania Wildlife Authority Has Mandate to Change Policies, Use of Game Reserves - Nyalandu," in *IPPmedia.com* (20 January 2015), <http://www.ippmedia.com/frontend/index.php?l=76872>.

between communities and conservation authorities and wildlife.²⁸⁹ Past patterns and processes suggest that the government and corrupt officials throughout conservation agencies will continue to craft rules and regulations to serve rent seekers.

At the national level Tanzania has not discounted the possibility of future ivory sales.²⁹⁰ The government continues to research ways to preserve its stockpile in order to reevaluate the feasibility of sales at a later date, a move that could, if implemented, trigger another poaching crisis by stoking demand.²⁹¹

The state's commitment to increased enforcement has not been demonstrated. Poaching rates remain high in the south, in particular in the Ruaha National Park, and are increasing in the north of the country and in cross-border locations in Mozambique.²⁹² While arrests of low-level traffickers increased, ring leaders continue to operate with impunity in Tanzania.²⁹³ As EIA investigations uncovered, most of the primary players in the poaching crisis in Tanzania remain at large, and many active poaching syndicates remain unaffected by these increased enforcement efforts.²⁹⁴ Lack of arrests of king-pins or higher level operators within poaching rings reinforces the belief in many that corrupt officials are covering up the involvement of politicians.²⁹⁵ The government continues to suppress information about poaching levels or complicity of government officials

²⁸⁹ Guardian, "Undp: Community Involvement Crucial in Fight against Poaching," *ibid.* (12 May 2014), <http://www.ippmedia.com/frontend/index.php?l=67750>.

²⁹⁰ EIA, "Open Season: The Burgeoning Illegal Ivory Trade in Tanzania and Zambia".

²⁹¹ "Uk to Help Preserve Tanzania's 137 Tonnes of Stockpiled Ivory," in *IPPmedia.com* (11 July 2014), <http://www.ippmedia.com/frontend/index.php?l=69824>.

²⁹² Mtambalike.

²⁹³ Tanzania Daily News, "Tanzania: Four Nabbed in Dar over Government Trophies," in *AllAfrica.com* (28 January 2014), <http://allafrica.com/stories/201401280746.html>.

²⁹⁴ EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

²⁹⁵ Guardian, "Special Report: Why Anti-Poaching Campaign Ineffective".

and Chinese diplomats in poaching and trafficking rings.²⁹⁶ It also continues to cover up poaching incidents, threatening to retaliate against NGOs reporting increases.²⁹⁷ In 2015 Tanzania passed a cybercrimes act aimed at NGOs and media outlets that makes it illegal to share information online the government considers false. Another controversial law makes it illegal to publish statistics the government does not agree with, challenging the ability of NGOs or others to publish accurate numbers on wildlife populations or criminal acts occurring in wildlife habitats.²⁹⁸

It is unclear how the increased role of non-government actors across the conservation spectrum will impact resource governance structurally. In the past, government authorities have used the involvement of donors as an avenue for revenue accumulation. Despite the embedded nature of NGOs and the influence they have over policy in Tanzania, they have been unable to force long-lasting institutional change, as evidence by Tanzania's quick reversal on long-negotiated devolution. Considerable incentives remain for authorities to seek rents, in particular as the value of wildlife continues to increase on the global market. Nelson and Agarwal note the ability of governing officials to implement reform

²⁹⁶ Reuters, "Tanzanian Ivory Not Being Sold to Chinese Diplomats Allegations of Buying Sprees Fabricated: Officials," in *ABC News Australia* (7 November 2014), <http://www.abc.net.au/news/2014-11-08/tanzanian-ivory-smuggled-out-by-chinese-delegates-group-says/5876878>; EIA, "Vanishing Point: Criminality, Corruption and the Devastation of Tanzania's Elephants".

²⁹⁷ ITV News.

²⁹⁸ Maraya Cornell, "You Could Go to Jail for Tweeting This in Tanzania," in *National Geographic: A Voice for Elephants* (13 May 2015), <http://voices.nationalgeographic.com/2015/05/13/you-could-go-to-jail-for-tweeting-this-in-tanzania/>.

strategies just to the point required to gain access to financial resources, and no more.²⁹⁹

Relationships between communities and wildlife, as well as between communities and wildlife authorities, remain strained and are defined by conflict and distrust. Harsh enforcement tactics threaten local communities and degrade relations between conservation authorities and communities, and between wildlife in communities. Continued evictions send powerful messages to communities that the government values the commodification of wildlife over community needs. People are afraid of conservation, afraid of conservation authorities, and view wildlife and the expansion of PAS as a direct threat to lives and livelihoods.³⁰⁰

Conclusion

Application of the SESF to the Tanzanian case reveal cross-level and cross-scale interactions which are leading to the uncontrolled transformation of the SES. Single factor explanations such as 'corruption' or 'mismanagement' are inadequate to explain the complex interactions across the SES.³⁰¹ Both endogenous and exogenous forces simultaneously pressure both the social and ecological components of the system, with negative impacts for resilience of both.

²⁹⁹ Nelson and Agarwal, "Patronage or Participation? Community Based Natural Resource Management Reform in Sub-Saharan Africa."

³⁰⁰ Guardian, "Special Report: Why Anti-Poaching Campaign Ineffective".

³⁰¹ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

While Tanzania should have been well suited for the application of neo-liberal conservation- a large and seemingly resilient SES, adequate legislative framework, ample funding and support- conditions within the governing authorities, and within the application of reforms, instead imperiled the resource system.

The colonial history of centralization of resource control, eviction and exclusion of resource users, deference to international conservation agendas at the expense of local resource users, endemic corruption, and the purposive pursuit of economic gains to wildlife interact within an overheated global market for ivory to facilitate the near destruction of Tanzania's elephant resources. Neoliberal conservation has led to the displacement of communities and their dispossession of resource rights because the land and resources gain value as a global commodity, incentivizing conservation authorities to increase the area of land under protection and officials to structure rules and regulations to benefit rent seeking.³⁰² Under the current governing system NGOs have been able to develop and control large-scale conservation programs on community lands, with nominal input and participation from local communities.³⁰³

Folke et al. explain adaptability as the ability of an SES to learn and adjust to both internal and external factors and processes, and to continue developing within the stability domain.³⁰⁴ The system in Tanzania is not adapting, and proposed solutions to the challenges facing wildlife have not evolved in any way-

³⁰² Benjaminsen and Bryceson, "Conservation, Green/Blue Grabbing, and Accumulation by Dispossession in Tanzania."

³⁰³ Goldman, "Strangers in Their Own Land: Maasai and Wildlife Conservation in Northern Tanzania."

³⁰⁴ Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability."

they continue to grow PAs, rely heavily on foreign donors for technical and financial aid, exclude local peoples from decision-making, and commodity wildlife and habitats.

Tanzania stands in contrast to Botswana, the last case examined for this project, where the elephant population has exploded to over 200,000, with poaching rates at less than .05% of the population, and little evidence of any large scale organized wildlife crime.³⁰⁵ Botswana has emerged as a champion for elephant conservation and a driving force behind efforts to halt the illegal traffic of ivory from Africa to Asia. The threats facing Botswana's SES, deforestation, desertification, and water shortages do, however, similar to those facing Tanzania, relate to global markets and changing valuations to land. In Botswana's case, the values accruing to cattle, and elite motivations to protect those values, create competition for resources within the SES. Though this competition has not yet impacted elephant populations, both human communities and other wildlife populations have been transformed by these interactions.

³⁰⁵ Mduma, S., A. Lobora, C. L. Foley, and T. Jones. "Tanzania National Elephant Management Plan 2010-2015." Arusha: Tanzania Wildlife Research Institute, 2011.

CHAPTER 7

BOTSWANA

Problem Statement

Botswana's social-ecological system stands in stark contrast to those of Kenya and Tanzania. Elephant populations have exploded in Botswana, spilling over into neighboring countries, with an impact on the region's SES. Poaching rarely occurs. Communities generally support conservation and express positive views on wildlife.

Several factors in play at the national level have impacted the positive ecological outcomes evident in Botswana's SES including high-level support for conservation; effective policing and enforcement; a unified strategy for commercial tourism development; positive conservation norms; and rules and regulations which facilitate local decision-making about resource usage. Botswana's challenge moving ahead is to maintain its level of resilience in the face of growing threats to regional populations, evidenced by increasing poaching rates in most of its neighbors, as well as the broader threats facing the entire resource system.

At one time Botswana believed the country's elephants, and its ivory trade, could be sustained even in the context of a global ivory trade. Increasingly governance authorities in Botswana recognize their elephants as part and parcel of the global SES, and that in order to safeguard local wildlife, the entire system

must be shored up. Adapting to changing realities across the continent, President Ian Khama has linked the safety of Botswana's elephants with that of the entire African elephant SES. Botswana has framed the safety of their national herd as inextricably linked to the patterns and processes at work, including mass killings and hyper consumption, severely impacting other sections of the SES. As such, the country is working to both buttress protections within the local SES and to strengthen simultaneously enforcement and conservation of the international SES.

However, some adaptations of governance strategies, meant to decrease vulnerabilities within the system, may prove to degrade SES resilience. Management of the SES continues to be impacted by a pre-colonial history of racism and exploitation of the minority San peoples by the majority Tswana, in addition to the acute competition between cattle-grazing users and local users of the SES.¹ Botswana's early and continuous emphasis on commercial cattle ranching, and the pursuit of diamond deposits as the primary pathways to development, have shaped interactions between resource users in the system, with damaging consequences for social and, in some instances, ecological components of the system.

Following the SESF, this chapter first provides a description of Botswana's resource system and units, highlighting the large areas devoted to conservation, the large size of Botswana's elephant herds, and its importance regionally and globally. The next section examines the governance system in Botswana and key

¹ USAID, Usaid Country Profile: Property Rights and Resource Governance: Botswana, (Washington, DC: USAID), http://usaidlandtenure.net/sites/default/files/country-profiles/full-reports/USAID_Land_Tenure_Botswana_Profile.pdf.

interactions between the state and resource users which link the local SES to global markets, ultimately contributing to a resilient conservation system, which economically benefits the entire country. The chapter then examines the steps the governance system has undertaken to address threats to the SES, which link the health of local populations to that of the entire continental SES, while also bolstering local protections through proactive and adaptive measures. The conclusion highlights the utility of the SESF in illustrating how interactions at the domestic level, such as legislation and the actions of resource users, can impact the international system in a positive fashion.

Resource System and Resource Units

While Botswana has largely escaped the current elephant poaching epidemic, significant perturbations are creating vulnerabilities in the SES, most of which relate to the degradation of the landscape resulting from commercial cattle herding, which competes with conservation as the key rural development mechanism, and cross-border poaching threats.²

Like Tanzania, Botswana devotes a significant portion of its landmass to conservation. Around 39 percent of the country is under some form of conservation, in the country's three national parks, seven game reserves, forest reserves and Wildlife Management Areas (WMAs).³ The total land-area under

² Michael Chase and Kelly Landen, "View from the Top," *Africa Geographic* 19, no. 7 (2011).

³ Lesley P. Boggs, "Community Power, Participation, Conflict and Development Choice: Community Wildlife Conservation in the Okavango Region of Northern Botswana," *Evaluating Eden Series Discussion Paper No. 17* (2000).

protection stands at 170,850km².⁴ In addition the government has divided the entire country into 163 controlled hunting areas (CHAs) for the apportionment of hunting quotas and guided development.⁵

Botswana's SES is tightly interlinked with neighboring systems through its northern conservation regions which connect to a larger conservation system, the Kavango Zambezi Conservation Area. This area spans northern Botswana, Zambia, Namibia, Zimbabwe, and Angola. As a complex system incorporating multiple states and varying governance systems and local SESs, it is unclear whether promoting the interconnections of the system will increase resilience, or introduce vulnerability, across as the poaching crisis moves out of east Africa to the southern portions of the continent.⁶ The system includes three dozen national parks, game reserves, forest reserves, game/wildlife management areas, and other protected concessions.⁷ The conservation area encompasses both the Chobe National Park and much of the Okavango Delta.⁸

Botswana's physical landscape consists of both wetlands and woodland area with permanent water and seasonal flooding in the north and semi-arid desert in the south of the country. The country's most famous wildlife area, the Okavango Delta, is recognized as a World Heritage Site for the abundance of

⁴ Seanama Conservation Consultancy, Botswana National Report for the United Nations Conference on Sustainable Development (Rio+20), (New York: UNDP, June 2012), <https://sustainabledevelopment.un.org/content/documents/1006National%20Report%20-%20Botswana.pdf>.

⁵ Larry A. Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana," *Global Environmental Politics* 5, no. 3 (2005).

⁶ Berkes, Colding, and Folke, "Introduction."

⁷ Kavango-Zambezi Transfrontier Conservation Area, "About Kaza," <http://www.kavangozambezi.org/about-kaza>.

⁸ "Botswana: Anti Poaching Efforts Bear Fruit," in *AllAfrica.com* (23 February 2015), <http://allafrica.com/stories/201502240237.html>.

wildlife, and is listed under the 1996 Ramsar Convention on Wetlands as a wetland of international importance. The southern 70 to 80 percent of the country consists of the Kalahari Desert, characterized by recurring and prolonged droughts, poor soils, and few permanent water sources.⁹

Unlike Tanzania and Kenya, Botswana is sparsely populated, limiting negative human-wildlife interactions within the SES. Less than 37 percent of Botswana¹⁰ live in rural areas, leaving much of the SES free from people.¹¹ Encroachment and competition within the SES relate to the country's three million cattle. Domesticated livestock threatens wildlife through fencing; increased pressure on water resources; expansion into wildlife territory; overgrazing; desertification; and through increased incidence of human-wildlife conflict.¹² Fences erected to keep wild animals separate from cattle to stop the spread of disease impede wildlife movements and stop animals reaching seasonal water sources, which can trigger mass die-offs. During a drought in the 1980s 50,000 animals died when fences impeded their movement towards water.¹³ Wildlife declines related to fencing continue to be a challenge. In Ngamiland, 11 of 14 species declined by an average of 61 percent from 1999 to the present. Some animals, such as wildebeest, have declined by 90 percent. In

⁹ Seanama Conservation Consultancy. African Wildlife Foundation, "Botswana," <http://www.awf.org/country/botswana>.

¹⁰ Botswana is a general term to describe citizens of Botswana.

¹¹ Trading Economics, "Rural Population (% of Total Population) in Botswana," <http://www.tradingeconomics.com/botswana/rural-population-percent-of-total-population-wb-data.html>. USAID, "Usaid Country Profile: Property Rights and Resource Governance: Botswana".

¹² Jeffrey Barbee, "Botswana Seems to Show the Way Ahead in Conservation - but Poaching Is Still on the Rise," in *The Guardian* (21 March 2015), <http://www.theguardian.com/world/2015/mar/21/botswana-game-hunting-ban>.

¹³ Boggs, "Community Power, Participation, Conflict and Development Choice: Community Wildlife Conservation in the Okavango Region of Northern Botswana."

the same area tsessebe and warthog populations fell by over 80 percent. In addition to expansive fencing, a twenty-year drought that began in the 1980s is a major factor in these declines.¹⁴

Lack of water due to climate change, drought, and depletion of natural water sources threaten wildlife in the SES. Conservationists are particularly concerned about a large population of elephants that migrate between Zimbabwe's Hwange National Park and Botswana's Chobe National Park. Boreholes are drying up along the animals' migration route, threatening as many as 30,000 elephants with death from lack of water.¹⁵ Deforestation, habitat fragmentation, desertification, wild fires, and encroachment into wildlife territories also threaten the SES.¹⁶

Resource Units

Botswana hosts the continent's largest population of elephants, as well as endangered wild dogs, lions, cheetahs, and numerous species of antelope. The most bio diverse region of the country is the north where permanent water sources exist.¹⁷ Africa's largest concentration of wildlife occurs in the Chobe National Park, also home to the largest elephant population in Africa.¹⁸

¹⁴ Chase and Landen, "View from the Top."

¹⁵ Barbee.

¹⁶ Chase and Landen, "View from the Top."

¹⁷ Boggs, "Community Power, Participation, Conflict and Development Choice: Community Wildlife Conservation in the Okavango Region of Northern Botswana."

¹⁸ African Wildlife Foundation, "Botswana". Siyabona Africa, "Chobe National Park," http://www.botswana.co.za/africa_chobe_national_park.html.

Like most of the rest of Africa, Botswana experienced mass poaching in the 1980s, closely associated with conflict across the region. Organized poaching syndicates with connections to the South African military, various insurgencies, and warring factions across the region engaged in poaching to raise funds and purchase weapons.¹⁹ Poachers targeted the Okavango Delta for its large population of elephants and relative inaccessibility to authorities.²⁰

Elephant range changes seasonally depending on the availability and location of water year to year from around 120,000 km² to about 93,000 km². As in Kenya and Tanzania, most elephant range exists beyond park and protected area boundaries. Only between 23 to 32 percent of Botswana's elephants live in protected areas, fluctuating between wet and dry seasons.²¹

Botswana's elephant population is critically important for the health of the regional population, and has proven resilient to cross-border threats. Botswana essentially became a refuge for elephants fleeing violence and insecurity in neighboring states. In recent years those same elephants began repopulating neighboring countries, at one point expanding their range across 250,000 km², over multiple international borders.²² As poaching rates have again risen across

¹⁹Stephen Ellis, "Of Elephants and Men: Politics and Nature Conservation in South Africa," *Journal of Southern African Studies* 20, no. 1 (1994).

²⁰Dan Henk, "The Botswana Defence Force and the War against Poachers in Southern Africa," *Small Wars & Insurgencies* 16, no. 2 (2005).

²¹Paul Steyn, "Counting Elephants from the Air in Africa's Newest World Heritage Site," in *National Geographic News* (5 September 2014), <http://news.nationalgeographic.com/news/2014/09/140904-elephant-census-botswana-okavango-poaching-ivory-africa-science/>.

²²Ibid.

borders, the elephant dispersal to neighboring Namibia, Zambia and Angola has largely stopped.²³

Since the last poaching epidemic, illegal killing of elephants in Botswana has been rare. According to MIKE analysis, Botswana lost less than 120 elephants per year during much of the recent poaching crisis.²⁴ Botswana likely houses more than a third of all elephants in Africa.²⁵ Elephant populations in the Okavango Delta and Chobe stand at around 130,000, based on aerial estimates between 2010 and 2012. Another 70,000 live in other parks, protected areas, and unprotected areas across the SES. Some herds contain as many as 500 elephants.²⁶ Most of the country's elephants live in the north, with smaller populations in the eastern tip of the country.²⁷

Utilizing wildlife has been a key component of Botswana's governance system until recently. Hunting of all but a few protected animals was allowed under a licensing and quota system. Botswana generally issued licenses to kill around four hundred elephants per year. Botswana's elephants are listed under CITES Appendix II. The country participated in both the 1999 and 2007 sale of ivory.²⁸

²³ Don Pinnock, "Southern African Elephant Corridors Blocked by Poachers," in *Daily Maverick* (9 January 2014), http://www.elephantswithoutborders.org/downloadpapers/Southern%20African%20elephant%20corridors%20blocked%20by%20poachers%20_%20Daily%20Maverick.pdf.

²⁴ CITES, "Fifteenth Meeting of the Conference of the Parties: Interpretation and Implementation of the Convention Species Trade and Conservation Issues: Elephants: Monitoring of Illegal Hunting in Elephant Range States," (Doha, Qatar: CITES, 13-25 March 2010).

²⁵ Steyn.

²⁶ *Ibid.*

²⁷ *Ibid.*

²⁸ CITES, "Press Release: Ivory Auctions Raise 15 Million Usd for Elephant Conservation," (7 November 2008), http://www.cites.org/eng/news/pr/2008/081107_ivory.shtml.

Botswana is heavily dependent on the health of the SES for both the tourism industry and cattle production. Tourism in Botswana has increased on average over eight percent per year since 1994. Numbers increased by 50 percent between 2000 and 2009. The over one million visitors per year account for over 12 percent of the country's GDP.²⁹ According to the USDA, 85 percent of Botswana's agricultural output is derived from livestock, primarily cattle production, though the cattle industry accounts for less than three percent of Botswana's GDP.³⁰

Governance System and Resource Users

Per the SESF literature, an examination of social and ecological processes and the linkages between them within a specific SES can answer questions about how the system developed into its present state, how it operates currently, and how it might change in the future.³¹ Exogenous forces, including liberalization, privatization, and globalization emerged early on as important factors influencing early land-use decisions and the development of the SES in Botswana. As Young et al. note, globalization is a key factor in exposing an SES

²⁹ Susan Snyman, "Partnership between a Private Sector Ecotourism Operator and a Local Community in the Okavango Delta, Botswana: The Case of the Okavango Community Trust and Wilderness Safaris," *Journal of Ecotourism* 12, no. 2-3 (2014).

³⁰ USDA Foreign Agricultural Service, Botswana: Agricultural Economic Fact Sheet, (9 June 2015), http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Agricultural%20Economic%20Fact%20Sheet_Pretoria_Botswana_6-9-2015.pdf.

³¹ Redman, Grove, and Kuby, "Integrating Social Science into the Long Term Ecological Research (Lter) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change," 166.

to both resilience and vulnerability.³² Globalization has had a clear impact on Botswana's SES in terms of both the system's resilience- funded in large part through the country's diamond reserves- and its vulnerabilities, which correspond primarily to degradation caused by the commercial cattle industry and threats associated with the massive expansion of the global ivory market. The globalization of the cattle industry in Botswana has resulted in large-scale fencing, degradation of communal lands, increased pressure on water sources, and an overall decline in most large mammal species, as well as multiple deleterious impacts on human communities.³³

Similar, and linked, endogenous forces driving the development of the economy and the production of a national identity, including heavily centralized resource control and de-racialization of resource allocation, have impacted how governance over wildlife resources developed over time.³⁴ Botswana early on addressed issues of land tenure and privatization to spur the growth of the economy and aid in the development of a national identity. These imperatives have shaped the decisions on resource use and governance within the SES.

The highly centralized management system, which developed has also introduced both resilience and vulnerability into the system. Botswana's resilience is evidenced by its strong legislation addressing wildlife crime and effective enforcement mechanisms, and is reinforced by its focus on utilization

³² Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research."

³³ Michael B. K. Darkoh and Joseph E. Mbaiwa, "Globalization and the Livestock Industry in Botswana," *Singapore Journal of Tropical Geography* 23, no. 2 (2002).

³⁴ Parakah Hoon, "Elephants Are Like Our Diamonds: Recentralizing Community Based Natural Resources Management in Botswana, 1996-2012," *African Studies Quarterly* 15, no. 1 (2014). Amy R. Poteete, "Defining Political Community and Rights to Natural Resources in Botswana," *Development and Change* 40, no. 2 (2009). Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana."

programs that foster positive conservation norms for most Batswana. Unlike Tanzania and Kenya, Botswana has managed the development of its wildlife resources as a means to pursue national development goals. The government has invested heavily in the protection of wildlife assets, and is less reliant on NGOs for key conservation services.³⁵ As such, the elephant population has exploded in the country, and wildlife industries have become a key driver of economic development in rural communities. However, vulnerabilities emerge in contested political and geographic spaces because the government continues to support land uses which are incompatible with wildlife conservation, favoring elite concerns over national priorities. Moreover, some adaptations of governance strategies meant to decrease vulnerabilities within the system, such as the ban on hunting and shifts to rules and regulations, which recentralized control over community-based conservation programs, may prove to degrade SES resilience.

Despite their significant damage to the SES, both within social and ecological components of the system, Botswana continues to support large-scale globalized cattle production and diamond mining through subsidies and preferential land-use policies at the expense of wildlife and local resource users.³⁶ Other challenges relate to the decision to treat wildlife resources in the same manner as other national assets, meaning central management and national allocation of benefits.

These challenges, though significant, do not diminish Botswana's achievements in protecting its elephant herds and increasing the relevancy of its

³⁵ "Botswana: Anti Poaching Efforts Bear Fruit".

³⁶ Gallop, "Linkages between Vulnerability, Resilience, and Adaptive Capacity." Poteete, "Defining Political Community and Rights to Natural Resources in Botswana."

wildlife assets for the country. Moreover, Botswana's dual strategy for addressing wildlife crime, consisting of an emphasis on the local/global nature of the SES while simultaneously strengthening local mechanisms for protection, has proven effective to date at both raising the profile of wildlife crime at the international level and increasing protections locally.

Park Development under the British Protectorate

Unlike in Kenya and Tanzania, it was not immediately obvious that conservation was desirable or feasible in Botswana, then called Bechuanaland Protectorate. Early explorers and adventurers over-exploited Botswana's wildlife, resulting in the mass depletion of wild animals, in particular elephants, by the turn of the nineteenth century. European settlement and grazing began changing the landscape from the 1890s when Afrikaners from Transvaal moved into what would become Botswana, foreshadowing current challenges to the SES. Large-scale cattle ranching degraded the landscape through overuse of scarce water resources, overgrazing, and depletion of veld products.³⁷ By 1890 animal populations were at an all-time low, before being further decimated by an outbreak of rinderpest.³⁸

These early usage patterns and the reality of a degraded SES devoid of wildlife led colonial administrators to ignore international trends in conservation

³⁷ Chasca Twyman, "Participatory Conservation? Community-Based Natural Resource Management in Botswana," *The Geographical Journal* 166, no. 4 (2000).

³⁸ Siyabona Africa, "Wildlife Conservation: National Parks of Botswana," http://www.botswana.co.za/Wildlife_Conservation-travel/botswana-national-parks.html.

emerging at the time. Instead colonial administrators chose to promote the protectorate's capacity as a cattle producer, supporting policies incompatible with wildlife conservation from the turn of the 20th century.³⁹ Authorities argued wildlife management was a waste of time, considering the degradation of the SES in the early part of the century. As a result, the British Protectorate did not establish the first game reserve in the Okavango Delta until 1940. In the 1960s the park system was expanded to include the Central Kalahari Gam Reserve (CKGR) and the Moremi Game Reserve.⁴⁰

As elsewhere, under the colonial authorities and after independence, the government centralized land and wildlife management and claimed ownership of all wildlife.⁴¹ Evictions occurred to make way for gazzettment of parks and protected areas. In some instances the colonial authorities consulted local peoples, while in other instances, such as in the creation of the CKGR, particularly important to hunter-gatherer communities, consultations did not occur.⁴² Chobe, long recognized as an important area for biodiversity, did not receive protections until the late 1960s.⁴³ In 1966 a formal conservation policy was devised.⁴⁴ Usage patterns which developed in the protectorate era- centralizing control over wildlife resources and favoring cattle interests over wildlife- continue to inform governance of the SES.

³⁹ Boggs, "Community Power, Participation, Conflict and Development Choice: Community Wildlife Conservation in the Okavango Region of Northern Botswana."

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana."

⁴³ Siyabona Africa, "Wildlife Conservation: National Parks of Botswana".

⁴⁴ Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana."

Governing Post-Independence

Wildlife policy in Botswana post-independence continued to be top-down and highly centralized.⁴⁵ The state remained focused on commercial cattle production in much of the SES, impacting the patterns of resource use, which emerged, including fencing to facilitate the expansion of the cattle industry. After the discovery of diamonds, mineral extraction drove GDP growth. Wildlife conservation did not emerge as an economic driver of development until the late 1980s. At that time Botswana embraced community based conservation and developed a national marketing strategy to raise the value of wildlife resources on the global market. With rising values to wildlife, conservation has become entangled in a national debate over resource allocation and national identity.

Governance Authorities

The Ministry of Environment, Wildlife, and Tourism, (MEWT) manages the country's wildlife assets through the department of environmental Affairs (DEA). MEWT consists of eight departments, one parastatal (the Botswana Tourism Organization), and one not-for-profit company (Forest Conservation Botswana). Under MEWT, the Department of Wildlife and National Parks (DWNP) is the primary organization responsible for overseeing wildlife conservation and

⁴⁵ Nelson and Agarwal, "Patronage or Participation? Community Based Natural Resource Management Reform in Sub-Saharan Africa."

managing utilization. The DWNP account for 92 percent of MEWT's revenues.⁴⁶ As in Kenya and Tanzania, the managing authorities have a wide range of responsibilities. The department conducts research on wildlife; enforces wildlife laws; develops managing plans; conducts the building of infrastructure; is responsible for community outreach and education programs; manages the country's fisheries; and runs the Botswana Wildlife Training Institute.⁴⁷ Botswana's approach to wildlife control is community-based and allows communities to utilize wildlife on their land and in the Wildlife Management Areas (WMAs), recognizing traditional user rights.⁴⁸ The laws and policies in Botswana allow the local communities to hunt in Wildlife Management Areas without a permit, for food.⁴⁹

Though not to the same extent as in Kenya and Tanzania, IGOs and NGOs play a role in the management of wildlife in Botswana, particularly in influencing the reform process and the adoption of community based management since the 1980s. NGOs produce research on wildlife populations in the country, assist in monitoring wildlife movements, and promote and facilitate Community Based Natural Resource Management (CBNRM) programs. USAID

⁴⁶ R. S. Murali, Scoping Study - Per-Enr in Botswana, (Gaborone: PEI UNDP-UNEP Botswana, August 2013), http://www.unpei.org/sites/default/files/e_library_documents/Botswana_PER-ENR_Scoping_Study_2013.pdf.

⁴⁷ Office of the Auditor General, Management of Protected Areas by the Department of Wildlife and National Parks (Dwnp): Performance Audit Report, (Gaborone: Office of the Auditor General 2010), http://www.environmental-auditing.org/Portals/0/AuditFiles/Botswana_f_eng_Management-of-Protected-Areas.pdf.

⁴⁸ Sifuna Nixon, "Wildlife Damage and Its Impact on Public Attitudes Towards Conservation: A Comparative Study of Kenya and Botswana, with Particular Reference to Kenya's Laikipia Region and Botswana's Okavango Delta Region," *Journal of Asian and African Studies* 45, no. 3 (2010).

⁴⁹ Ibid.

in particular was instrumental in the development and adoption of CBNRM as a conservation strategy in Botswana.

In the late 1980s when Botswana began focusing heavily on its wildlife sector as an engine of rural growth, authorities developed a national use strategy focused on attracting high-end, low-volume tourism. This decision was made in recognition of a weak tourism infrastructure and the desire to limit environmental impacts related to mass tourism.⁵⁰

Legislation

Effective, and enforced, legislation in Botswana increases the resilience of the SES. The primary legislation on wildlife in Botswana is the Wildlife Conservation and National Parks Act of 1992 (WCNPA) and supporting legislation including the Tourism Policy of 1990, the National Conservation Strategy of 1990, and the Tourism Act of 1992.⁵¹ The WCNPA implements Botswana's obligations under CITES in addition to regulating the domestic trade in wild animal meat, trophies and other wildlife products.⁵² The CBNRM policy of 2007 governs local management of wildlife.⁵³

Unlike in Kenya and Tanzania, laws against illegally killing and trafficking wildlife in Botswana were strong before the current poaching epidemic.

⁵⁰ Siyabona Africa, "Wildlife Conservation: National Parks of Botswana".

⁵¹ Library of Congress, "Wildlife Trafficking and Poaching: Botswana," <http://www.loc.gov/law/help/wildlife-poaching/botswana.php>.

⁵² *Ibid.*

⁵³ Bame Piet, "Botswana: Mps Welcome Cbnrm Policy," in *AllAfrica.com* (24 July 2007), <http://allafrica.com/stories/200707241030.html>.

Moreover, penalties for poaching and illegal hunting practices under the WCNPA are much higher than in most African countries. Hunting any animal without a license can result in two years in jail and a fine. Illegally killing a protected game animal carries harsher punishments, starting with seven-year terms for animals like cheetahs, ten years for an elephant, and increasing to a fifteen years for a rhinoceros. Repeat offenders face fines and sentences fifty percent greater.⁵⁴ Laws are written to facilitate prosecution and law enforcement, so an individual does not have to be caught in the act or with a trophy to be prosecuted. For example, trespassing onto private land or unauthorized entry into a park with a weapon is a punishable offence, as is travelling along a road with a loaded weapon other than a pistol.⁵⁵ Wildlife enforcement officers have broad powers to enforce wildlife laws, including warrantless searches and seizures if they can establish reasonable suspicion of the commission of a crime under the WCNPA. For instance, a wildlife or police officer may “stop, seize and search any vehicle, boat or aircraft which he believes to have been used in the commission of the offence, or to contain anything which might provide evidence of the offence.”⁵⁶ Authorities retain the right to seize trophies, meat, animals, and weapons as evidence, in addition to holding some prosecutorial powers to charge suspect and convey summons.⁵⁷ The law also addresses the need for compensation for

⁵⁴ Library of Congress, "Wildlife Trafficking and Poaching: Botswana".

⁵⁵ Ibid.

⁵⁶ Republic of Botswana, "Wildlife Conservation and National Parks Act (Chapter 38:01)," (1992).

⁵⁷ Library of Congress, "Wildlife Trafficking and Poaching: Botswana".

victims of wildlife crime, and provides a provision for property owners to kill wildlife in order to protect property or lives from damage or death.⁵⁸

To further support law enforcement and limit opportunities to kill wildlife illegally, the government issued a temporary hunting ban in 2014. The ban impacts all commercial hunting, and all hunting in public areas, turning designated hunting zones into photographic areas.⁵⁹ The move was in response to the significant declines in wildlife populations. The ban impacts all CHAs and WMAs in Botswana. Quotas for those areas were suspended. The ban did not affect hunting in private game ranches.⁶⁰

Militarized Anti-Poaching

Bolstering Botswana's strong legal mechanisms to address perturbations in the SES is its robust anti-poaching force, which is led by the country's military force, the Botswana Defense Force (BDF). Botswana initially turned to the BDF to support anti-poaching operations to address militarized cross-border poaching in the late 1980s. The BDF was immediately successful, after which the anti-poaching mission was extended to the rest of the force.⁶¹

The unit works closely with the DWNP and the police to enforce anti-poaching laws and protect wild animals. The BDF's anti-poaching operations

⁵⁸ Republic of Botswana, "Wildlife Conservation and National Parks Act (Chapter 38:01)."

⁵⁹ BBC News, "Botswana to Ban Hunting over Wildlife Species Decline," in *BBC.com* (29 November 2012), <http://www.bbc.com/news/world-africa-20544251>.

⁶⁰ Lori Robinson, "The Shocking Truth Behind Botswana's Hunting Ban," in *Saving Wild* (10 February 2014), <http://savingwild.com/2014/02/10/botswanas-hunting-ban/>.

⁶¹ Henk, "The Botswana Defence Force and the War against Poachers in Southern Africa."

focus primarily on cross-border poaching, while the DWNP focuses on local meat poachers. At any one time, as many as ten percent of the BDF may be deployed fighting poachers. The BDF patrols in all border areas of the country on anti-poaching patrols. Anti-poaching training exposes troops to wild animals at its headquarters, allowing soldiers to learn about animals, how to handle them, and to gain an appreciation for their value.⁶² The BDF and DWNP also coordinate through a regional Joint Military Commission to share intelligence on poaching and coordinate operations.⁶³

The success of anti-poaching operations in Botswana is attributed to multiple factors including superior training and professionalism evident in the BDF; support from the local population; and high-level political support. Botswana's current president, Ian Khama, was intimately involved with the decision to deploy the BDF to fight poaching in the late 1980s.⁶⁴ A self-described conservationist, Khama specifically sought out personnel with the right skills to track and interdict poachers. The force remains successful after over two decades on the mission due to high standards of discipline and good leadership; high levels of education among recruits; relationships with foreign militaries and foreign military training; ability to maintain resources; and regular and generous pay.⁶⁵

Despite significant success, the BDF's anti-poaching mission presents multiple challenges including the requirement to patrol large and remote areas;

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Ibid.

the harsh climate; danger of wild animals;⁶⁶ small number of troops dedicated to the anti-poaching mission; exclusion of the local populace from anti-poaching operations lenient penalties in neighboring countries; and regional political instability.⁶⁷

Community Based Management and Competition within the SES

Two factors drove the emergence of community based conservation in Botswana. First, similarly to Kenya and Tanzania, the government realized after the poaching epidemic of the 1980s that protecting wildlife required community involvement and some devolution of authority to community members. Second, community based conservation arose in response to the government sanctioned expansion of the cattle industry further into wildlife territories through the Tribal Grazing Lands Policy (TGLP), and the subsequent declines in wildlife populations that followed.⁶⁸ The DWNP considered the TGLP a threat to conservation as a rural development tool, and supported the 1986 Wildlife Conservation Policy laying the groundwork for later community based conservation efforts.⁶⁹

The TGLP, sponsored and funded by the World Bank, was meant to raise the standards of cattle production to meet European standards in addition to

⁶⁶ Ibid.

⁶⁷ Jackson John Sekgwama, "Recommendations for Making Anti-Poaching Programs More Effective in the Southern African Region through the Analysis of Key Variables Impacting Upon the Poaching of Elephants in Botswana" (U.S. Army Command and General Staff College, 2012).

⁶⁸ Joy Sammy and Christopher Opio, "Problems and Prospects for Conservation and Indigenous Community Development in Rural Botswana," *Development Southern Africa* 22, no. 1 (2005).

⁶⁹ Poteete, "Defining Political Community and Rights to Natural Resources in Botswana."

addressing issues of land degradation.⁷⁰ The TGLP developed in part as a response to the Beef Protocol Agreement between Botswana and the European Economic Community (EEC), meant to promote economic development in several southern African nations.⁷¹ The TGLP essentially enclosed and privatized communal lands under the guise of protecting wild areas, and to avoid a 'tragedy of the commons.'⁷² The policy aimed to provide a more efficient way to deliver services, control diseases, and monitor cattle breeding.⁷³ The TGLP expanded privatization, already well under way in Botswana from the late 1960s, by rezoning rangeland to include areas for communal use, commercial ranches, and reserved areas. The policy essentially divided the land in terms of current and future livestock production, ignoring the needs or role of wildlife, favoring commercial enterprise over subsistence and other non-commercial uses of the land.⁷⁴

Instead of slowing degradation, the TGLP divided and damaged the SES, irrevocably transforming parts of the SES. Under the subsidies, land has become more valuable for livestock purposes than for wildlife.⁷⁵ The policy was ultimately meant to strengthen beef standards in Botswana in order to meet European import requirements, receive subsidies and other development

⁷⁰ Darkoh and Mbaiwa, "Globalization and the Livestock Industry in Botswana."

⁷¹ K. Mulale et al., "Formal Institutions and Their Role in Promoting Sustainable Land Management in Boteti, Botswana," *Land Degradation & Development* 25, no. 1 (2014).

⁷² Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana."

⁷³ Land tenure is mixed in Botswana between communal or tribal lands, state-held/public lands, and private lands. Ibid.

⁷⁴ Poteete, "Defining Political Community and Rights to Natural Resources in Botswana."

⁷⁵ Liz Rihoy and Brian Maguranyanga, "The Politics of Community-Based Natural Resource Management in Botswana," in *Community Rights, Conservation and Contested Land*, ed. Fred Nelson (New York: Earthscan, 2010).

assistance. The EEC required strict animal health measures, in particular the separation of livestock from wild animal populations. To meet these requirements Botswana built hundreds of miles of veterinary fences, with disastrous consequences for wildlife.⁷⁶ Fencing divides the country into disease control areas and quarantine areas. The fences interrupt major wildlife migrations, prevent animals from reaching water sources, and become targets for poachers searching for trapped wildlife.⁷⁷ Fencing policies have not stopped the spread of disease and have had a deleterious effect on migrating wildlife.⁷⁸ The subsidies created incentives for ranchers to push into areas inappropriate for commercial cattle production, prone to erosion, with salty soil, poor vegetation, inadequate groundwater resources, and low rain, degrading an already marginal landscape unsuited to agro-pastoral enterprises.⁷⁹ Fencing and expansion onto communal lands has the additional impact of preventing the hunter-gatherer communities from accessing veld products and pursuing traditional livelihood practices.⁸⁰ Moreover, because rights to graze in communal lands were not rescinded,

⁷⁶ J. S. Perkins, *Ecological Impact Evaluation of Current Rangeland Management Regimes in Botswana, with Special Reference to the Eastern Kalahari*, (Gaborone: University of Botswana, 2007). 87.

⁷⁷ Joseph Mbaiwa and Onaleshepo I. Mbaiwa, "The Effects of Veterinary Fences on Wildlife Populations in the Okavango Delta," *International Journal of Wilderness* 12, no. 3 (2006).

⁷⁸ Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana."

⁷⁹ Mulale et al., "Formal Institutions and Their Role in Promoting Sustainable Land Management in Boteti, Botswana."

⁸⁰ Michael B. K. Darkoh and Joseph E. Mbaiwa, "Perceived Effects of Veterinary Fences on Subsistence Livestock Farming in the Okavango Delta, Botswana," *UNISWA Research Journal of Agriculture, Science and Technology* 12, no. 1 (2009).

wealthy cattle owners graze their animals first in common areas, then on their own lands, leading to a “tragedy of the commons.”⁸¹

Despite significant wildlife declines, fencing to support cattle grazers was bolstered by the 1997 the Diseases of Animals Act (1997), which promoted further veterinary fencing across the country.⁸² This policy led directly to massive declines in wildlife over the past decade and a half, radically shifting the SES from a resilient system to one experiencing unplanned transformation.

Devolution and the Development of CBNRM

Community based natural resource management programs were implemented differently in Botswana than in Tanzania and Kenya, emphasizing to a greater degree transparency, inclusion, and more completely devolved authority over revenues. However, some of the same criticisms of CBNRM ultimately emerged and the government very quickly recentralized programs.

CBNRM developed in Botswana through a close partnership with USAID. The program ran for one decade, from 1989-1999, after which NGOs took up the mantle of assisting communities in developing and managing CBNRM

⁸¹ Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana." Poteete, "Defining Political Community and Rights to Natural Resources in Botswana."

⁸² Mulale et al., "Formal Institutions and Their Role in Promoting Sustainable Land Management in Boteti, Botswana."

programs.⁸³ CBNRM was shaped to align with the government's overall strategy to focus the tourism industry on high-value/low-volume tourists.⁸⁴

CBNRM programs operate across the SES in areas outside of national parks in WMAs and CHAs.⁸⁵ Communities within CHAs can apply to manage wildlife in their area, run photo safaris or cultural tourism ventures, or for the commercial harvest of veld products. CHAs are zoned for multiple use, so grazing and agriculture are also allowed, though with restrictions. More restrictions apply on CHAs that fall within WMAs. These areas are reserved for primarily wildlife centered enterprises.⁸⁶ Two types of CBOs emerged, those engaged in wildlife management through joint venture agreements (JVAs) with hunting outfits or photo safaris, and those partnering with NGOs or private companies to exploit veld products.⁸⁷

Significant differences exist between how CBNRM programs developed in Botswana compared to Kenya and Tanzania. First, CBNRM programs in Botswana adopted a "sustainable use" model in which local people can both sell the rights to wildlife but also utilize wildlife for their own needs through a quota system.⁸⁸ Utilization also includes the commercial gathering of "veld products,"

⁸³ Boggs, "Community Power, Participation, Conflict and Development Choice: Community Wildlife Conservation in the Okavango Region of Northern Botswana."

⁸⁴ Siyabona Africa, "Wildlife Conservation: National Parks of Botswana".

⁸⁵ Botswana is divided into 163 Controlled Hunting Areas (CHAs). These CHAs overlap with other forms of land use, so one WMA may contain pieces of multiple CHAs. The government has zoned 42 CHAs for community management. Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana."

⁸⁶ Ibid.

⁸⁷ Ibid.

⁸⁸ Hoon, "Elephants Are Like Our Diamonds: Recentralizing Community Based Natural Resources Management in Botswana, 1996-2012."

such as thatching grass or medicinal plants.⁸⁹ Second, under CBNRM communities gained the ability to negotiate directly with tour operators and hunting outfitters through JVAs, or run concerns themselves.⁹⁰ Leases begin with one-year renewals, followed by a three-year contract, and then sets of five-year contracts.⁹¹ Third, CBNRM programs were designed taking local knowledge on animal behavior and ecosystem attributes into account to determine hunting quotas, camping spots, and other land use decisions.⁹² Locals directly take part in the management of wildlife by monitoring wildlife populations, movements, and death and renewal rates, and in increasing knowledge on wildlife behaviors and characteristics.⁹³ Fourth, communities keep 100 percent of the proceeds generated through ventures under the initial CBNRM framework,⁹⁴ and make decisions on how to allocate or utilize revenues gained through the utilization of resources.⁹⁵ Some successful programs were earning hundreds of thousands of dollars annually.⁹⁶ By 2003 communities collectively earned more than \$4 million annually.⁹⁷ Access to funds and participation in management decisions allowed communities to gain a sense of ownership over wildlife resources and craft

⁸⁹ Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana."

⁹⁰ Ibid.

⁹¹ Ibid.

⁹² T. C. Phuthago and R. Chanda, "Traditional Ecological Knowledge and Community-Based Natural Resource Management: Lessons from a Botswana Wildlife Management Area," *Applied Geography* 24 (2004).

⁹³ Ibid.

⁹⁴ E. Madzudzo, J. HaBarad, and F. Matose, Policy Brief 22: Outcomes of Community Engagement in Community-Based Natural Resource Management Programmes, (Bellville, South Africa: Institute for Poverty, Land and Agrarian Studies, University of the Western Cape, 2006), <http://www.plaas.org.za/plaas-publication/PB22>.

⁹⁵ Phuthago and Chanda, "Traditional Ecological Knowledge and Community-Based Natural Resource Management: Lessons from a Botswana Wildlife Management Area."

⁹⁶ Rihoy and Maguranyanga, "The Politics of Community-Based Natural Resource Management in Botswana."

⁹⁷ Poteete, "Defining Political Community and Rights to Natural Resources in Botswana."

locally relevant plans for development.⁹⁸ According to government documents, the CBNRM Policy raised the value of wildlife concessions by over 100% from 2002-2012.⁹⁹ Unlike in Kenya and Tanzania where resistance to CBNRM is acute, in Botswana communities seek out opportunities to participate in WMAs.¹⁰⁰

However, despite the relative success of CBNRM, significant challenges exist, many of them corresponding to those already discussed for Kenya and Tanzania. Rules to establish a CBNRM program are complex and onerous, creating barriers to local management.¹⁰¹ Because finding and retaining local skilled workers to manage a CBNRM is a challenge, communities are forced to rely on venture partner, aid organizations, or government officials,¹⁰² shifting authority away from communities to boards and other governance structures. In practice communities are often times totally left out of the management process.¹⁰³ Wage benefits are not evenly spread through communities, creating a disconnect for a large number of those living in WMAs who do not directly benefit, and who may only very slightly indirectly benefit.¹⁰⁴ Other challenges relate to unequal benefits among the community, and the attendant conflicts,

⁹⁸ Phuthago and Chanda, "Traditional Ecological Knowledge and Community-Based Natural Resource Management: Lessons from a Botswana Wildlife Management Area."

⁹⁹ Seanama Conservation Consultancy.

¹⁰⁰ Ibid.

¹⁰¹ Rihoy and Maguranyanga, "The Politics of Community-Based Natural Resource Management in Botswana."

¹⁰² T. Moren Stone, "Community Based Natural Resource Management and Tourism: Nata Bird Sanctuary, Botswana," *Tourism Review International* 15 (2011).

¹⁰³ Sammy and Opio, "Problems and Prospects for Conservation and Indigenous Community Development in Rural Botswana."

¹⁰⁴ Snyman, "Partnership between a Private Sector Ecotourism Operator and a Local Community in the Okavango Delta, Botswana: The Case of the Okavango Community Trust and Wilderness Safaris."

which ensue from that inequality.¹⁰⁵ Overhyped promises of development; requirements to relinquish use of land or limitations on usage; lack of inclusion within management mechanisms once JVAs are established; lack of knowledge on the goals of CBNRM; and a general feeling of disconnect between communities and conservation operations characterize CBNRM in Botswana.¹⁰⁶

These challenges were exacerbated by the lack of a legal framework to govern CBNRM programs. As in Kenya, Botswana did not draft legislation or a policy framework to support CBNRM until long after programs were established. The community organizations operated on a draft of the policy for at least fifteen years, opening up the organizations to manipulations by authorities in various agencies.¹⁰⁷ Thakadu argues the system was really designed for co-management of resources as opposed to the actual devolution of authority.¹⁰⁸ The DWNP retained ownership of wildlife and land and exercised approval authority over local decisions in terms of wildlife management and quotas and revenue allocation and investment.¹⁰⁹

¹⁰⁵ Boggs, "Community Power, Participation, Conflict and Development Choice: Community Wildlife Conservation in the Okavango Region of Northern Botswana."

¹⁰⁶ Lesego S. Sebele, "Community-Based Tourism Ventures, Benefits and Challenges: Khama Rhino Sanctuary Trust, Central District, Botswana," *Tourism Management* 31 (2010).

¹⁰⁷ Rihoy and Maguranyanga, "The Politics of Community-Based Natural Resource Management in Botswana."

¹⁰⁸ O. T. Thakadu, "Success Factors in Community Based Natural Resources Management in Northern Botswana: Lessons from Practice," *Natural Resources Forum* 29 (2005).

¹⁰⁹ Nelson and Agarwal, "Patronage or Participation? Community Based Natural Resource Management Reform in Sub-Saharan Africa."

Recentralization

Despite initial success and widespread acceptance of the programs, throughout the 2000s the government recentralized wildlife authority and reversed key aspects of its devolution initiative through its 2007 CBNRM policy and later ban on hunting.¹¹⁰ The policy backtracked on the original tenets of CBNRM, which indicate communities should gain the most from conservation revenues. This occurred in Botswana for a number of reasons related less to critiques over the management of resources and more to conflicts and contest between the allocation of revenues accruing to conservation. As Rihoy argues, CBNRM became “socially and politically contested in Botswana, with resource rights and benefits subjected to struggles amongst local communities and political economic elites.”¹¹¹

Shifts in the CBNRM policy were justified on two primary grounds. First, under Botswana’s constitution, all natural resources are national assets to be managed centrally for equitable allocation. Local management of wildlife resources seemed to run counter to the constitutional requirement, in particular because local communities received 100 percent of revenues accruing to conservation ventures.¹¹² CBNRM seemed to disproportionality benefit San.¹¹³ The development of local control of resources and revenues also set a

¹¹⁰ Hoon, "Elephants Are Like Our Diamonds: Recentralizing Community Based Natural Resources Management in Botswana, 1996-2012."

¹¹¹ Rihoy and Maguranyanga, "The Politics of Community-Based Natural Resource Management in Botswana."

¹¹² Poteete, "Defining Political Community and Rights to Natural Resources in Botswana."

¹¹³ Hoon, "Elephants Are Like Our Diamonds: Recentralizing Community Based Natural Resources Management in Botswana, 1996-2012."

dangerous precedent for communities living in diamond-rich areas. Those communities began agitating for local control of diamond resources.¹¹⁴ As Poteete argues, “calls for mineral royalties to be paid to mining communities just as wildlife revenues are paid to wildlife communities challenge the government’s main source of revenues.”¹¹⁵

Second, and related, the shift was justified as a mechanism to promote national identity. In Botswana, rights accrue to national citizens, not as a result of membership in a certain racial, ethnic, or tribal group. Some communities wished to define membership in their CBNRM by ethnicity, which the government considered to be threatening to national unity.¹¹⁶ The government began portraying CBNRM as divisive, interfering with “collective ownership” of wildlife, and as negating the intent of shared resources.¹¹⁷

The policy reneged on some of the key aspects of CBNRM, including local ownership, resources access, and benefits sharing. Under the new policy the government took control of the processes to select companies and award JVAs to allocate revenues away from local communities. Tour operators now pay fees to the National Environmental Fund, managed by the central government, instead of directly paying local communities. Funneled through the central government, communities now receive 35 percent of funds, to be used on approved development projects. The MEWT allocates the rest of the money, per

¹¹⁴ Rihoy and Maguranyanga, "The Politics of Community-Based Natural Resource Management in Botswana."

¹¹⁵ Poteete, "Defining Political Community and Rights to Natural Resources in Botswana," 298.

¹¹⁶ Hoon, "Elephants Are Like Our Diamonds: Recentralizing Community Based Natural Resources Management in Botswana, 1996-2012."

¹¹⁷ Ibid.

its priorities, to CBNRM programs and ecotourism projects across the country.¹¹⁸ The new policy increases the oversight role of the central government and district councils, and limits community representation to a board chairperson and a secretary. Hoon argues that the 2007 legislation has resulted in a punitive, as opposed to enabling, system.¹¹⁹

Moreover, policy shifts, which equate wildlife resources to mineral resources fail to acknowledge the special challenges communities rich in wildlife face with which communities rich in mineral wealth do not have to contend. These include human-wildlife conflict, crop raiding, predation, and loss of access to resources, among other challenges. Minerals do not pose the same challenges or costs to locals.¹²⁰

Rihoy argues the devolution of resource management was more about managing people than resources. As she argues, the policy aims of the government did not correspond to community goals. The government sought to bring rural communities into a modern wage economy, which is not a goal for many in rural areas, in particular of those of older generations.¹²¹ According to Twyman, "implicit in the policy implementation process are mechanisms which constrain empowerment and dictate the forms of participatory conservation which

¹¹⁸ Republic of Botswana, "Community Based Natural Resources Management Policy: Government Paper No. 2 of 2007," (Gaborone: Ministry of Environment, Wildlife and Tourism, 2007).

¹¹⁹ Hoon, "Elephants Are Like Our Diamonds: Recentralizing Community Based Natural Resources Management in Botswana, 1996-2012."

¹²⁰ Rihoy and Maguranyanga, "The Politics of Community-Based Natural Resource Management in Botswana."

¹²¹ Twyman, "Participatory Conservation? Community-Based Natural Resource Management in Botswana."

can emerge.”¹²² Local communities become “rentiers with no opportunity for widening livelihood options and associated skills.”¹²³

Resource Users: Emerging Challenges to Conservation Norms

As the SES literature indicates, the history of interactions between resource user groups, the resource system, and governing authorities shape current patterns and processes of utilization within the SES. Patterns of degradation in parts of the Botswana SES reflect interactions within the system focused on economic objectives not tied to conservation, primarily cattle ranching, and elite privilege. At the same time, the lack of commercial poaching or intentional overexploitation of the system reflects positive conservation norms that developed partly based on cultural affinity and partly from effective and inclusive governance policies.

Most Botswana view wildlife and conservation positively, and consider conservation an important mechanism for economic development. These positive attitudes relate to several factors, the first of which is Botswana’s governance practice of allowing utilization of wildlife resources. By allowing local resource use, authorities not only encouraged local responsibility, but also created a connection between wildlife and communities and a sense of ownership. Positive attitudes also relate to the fact that interactions within the SES between human and wildlife are not as common as in Tanzania and Kenya, where

¹²² Ibid.

¹²³ Ibid.

communities push into wildlife areas. The SES in Botswana is sparsely populated, limiting human-wildlife conflict and competition. Most Batswana live in the east of the country, while the densest populations of wildlife are in the north, where communities are smaller and more spread out. The communities living closest to wildlife, San, have a long history of close association with the resource system, and deeply held conservation norms, which take center stage in their cultural practices.

The challenge for the governance authorities in Botswana is to preserve these positive conservation norms as the country proactively adapts to international threats to the SES. Steps taken to safeguard wildlife at the national level, including alterations to CBNRM, and the ban on hunting, coupled with rural development policies such as the TGLP which favor elite cattle ranchers over rural communities, may feed some long simmering resentment among San communities, long subjugated by the Tswana.

San have generally been marginalized in land use decisions, both in the pre-colonial era and under the Protectorate, and presently. Around 45,000 to 60,000 San live in Botswana.¹²⁴ They typically live in extreme poverty and depend on access to land and natural resources for their livelihood.¹²⁵ Their interactions within the resource system are 'managed,' as Potteete notes.¹²⁶

¹²⁴ Nicholas Olmstead, "Indigenous Rights in Botswana: Development, Democracy and Dispossession," *Washington University Global Studies Law Review* 3, no. 3 (2004).

¹²⁵ USAID, "Usaid Country Profile: Property Rights and Resource Governance: Botswana".

¹²⁶ Poteete, "Defining Political Community and Rights to Natural Resources in Botswana."

Increasingly development, whether through CBNRM or other programs, is perceived as threat to their tradition and culture.¹²⁷

As wildlife conservation has become more important at the national level, the impact on San has been, paradoxically, to create a disconnect between local users and the system as neo-liberal conservation development requires significant shifts in livelihood practices that threaten the survival of these cultures. Since the pre-colonial era, when San were subjugated under the Tswana, they have progressively experienced dispossession and marginalization by authorities. In some instances, as in Tanzania, indigenous people have been subject to eviction to create protected areas. Evictions occurred in Central Kalahari Game Reserve over three waves, between 1997 and 2005.¹²⁸ These Bushmen were the last in Botswana to live primarily off of the land through traditional means.¹²⁹ Removals were carried out under the banner of conservation, though after removing the San, diamond and oil prospecting began, raising questions over the underlying reasons for the evictions.¹³⁰ The government argues the evictions are about protecting wildlife and providing the San with access to services, and were not about accessing diamond resources.¹³¹

¹²⁷ "Bushmen Face Imminent Eviction for 'Wildlife Corridor'," in *Survival International* (24 May 2013), <http://www.survivalinternational.org/news/9253>.

¹²⁸ Ibid.

¹²⁹ "Bushmen Aren't Forever: Botswana: Diamonds in the Central Kalahari Game Reserve and the Eviction of Bushmen," in *Survival International* (3 September 2004), http://assets.survivalinternational.org/static/files/related_material/11_14_195_Diamonds_facts.pdf

¹³⁰ Survival International Report: Parks Need Peoples, (London: Survival International 2014), <http://assets.survivalinternational.org/documents/1324/parksneedpeoples-report.pdf>.

¹³¹ "Bushmen Aren't Forever' as Kalahari Diamonds Go on Sale," in *Survival International* (12 February 2015), <http://www.survivalinternational.org/news/10660>.

San have also been evicted in some areas of the Okavango delta. Other communities, in addition to San, were removed to create both the Chobi National Park and the Moremi game reserve.¹³² Evictions continue in Botswana, more recently as the government is trying to create wildlife corridors, most notably in areas surrounding the CKGR which have been deemed as key wildlife corridors connecting the reserve with the Kgalagadi Transfrontier Park. In many cases these evictions have been carried out with violence. In 2002 the government evicted one community and in the process destroyed water boreholes, removed remaining stocks of water, and forbade hunting and gathering.¹³³ The displaced often end up in settlement camps where they are unable to obtain employment and experience high rates of alcoholism, depression, and HIV/AIDS.¹³⁴ Those caught trying to re-enter parks and other restricted areas face violence by park officials, and allegations of torture and severe abuse have emerged.¹³⁵

Patterns of marginalization and dispossession also emerge in the development of the TGLP and, to a lesser extent, CBNRM, in particular as implemented under recentralization. The TGLP enclosed and/or degraded communal areas, limiting their potential for subsistence utilization.¹³⁶ The TGLP relegated San peoples to the reserve areas, which would later morph into WMAs,

¹³² Blaikie, "Is Small Really Beautiful? Community-Based Natural Resource Management in Malawi and Botswana."

¹³³ Gordon Bennett et al., "Negative Impacts of Wildlife Law Enforcement in Botswana, Cameroon and India," in *Survival International*, <http://assets.survivalinternational.org/documents/1369/negative-impacts-of-wildlife-law-enforcement.pdf>.

¹³⁴ "Survival International Report: Parks Need Peoples".

¹³⁵ "Exposed: Fracking Licenses Granted in Bushmen's Reserve," in *Survival International* (25 November 2013), <http://www.survivalinternational.org/news/9762>.

¹³⁶ Jeremy Sarkin and Amelia Cook, "The Human Rights of the San (Bushmen) of Botswana - the Clash of the Rights of Indigenous Communities and Their Access to Water with the Rights of the State to Environmental Conservation and Mineral Resource Exploitation," *Journal of Transnational Law & Policy* 20 (2010-2011).

the primary geographies for CBNRM programs. San, forced out of traditional livelihoods, are increasingly dependent on the CBNRM ventures. However, as they have developed and become more centralized, these are perceived as elite and reflective of international, not local norms and goals. Programs are referred to colloquially as *Dilo tsa Makgoa*, or “something for the white people.”¹³⁷

The recent hunting bans, imposed to safeguard wildlife in the face of international, rather than local, threats, are experienced by the San as a dispossession¹³⁸ and as an infringement on their traditional livelihoods.¹³⁹ The hunting ban, in their view, treats them as common poachers, without acknowledging their long relationship with and sustainable use of wildlife and landscape resources.¹⁴⁰ San increasingly resent the central government, blaming them for shifts in the SES including wildlife declines, land degradation, and water depletion, which they have witnessed over the past 150 years.¹⁴¹

Removing hunting rights and forcing San out of traditional communal lands threaten the survival of a culture dating back tens of thousands of years. San culture is deeply rooted in the landscape and in practices only possible through active utilization of wildlife resources.¹⁴² By removing the San and limiting their opportunities to fully develop and access their traditional knowledge

¹³⁷ Rihoy and Maguranyanga, "The Politics of Community-Based Natural Resource Management in Botswana." Sammy. Boggs, "Community Power, Participation, Conflict and Development Choice: Community Wildlife Conservation in the Okavango Region of Northern Botswana."

¹³⁸ Blaikie, "Is Small Really Beautiful? Community-Based Natural Resource Management in Malawi and Botswana," 1954.

¹³⁹ "Trophy Hunters, San Unite against Botswana Hunting Ban," in *news24.com* (15 December 2014), <http://www.news24.com/Green/News/Trophy-hunters-San-unite-against-Botswana-hunting-ban-20141215>.

¹⁴⁰ "Survival International Report: Parks Need Peoples".

¹⁴¹ Twyman, "Participatory Conservation? Community-Based Natural Resource Management in Botswana."

¹⁴² "Survival International Report: Parks Need Peoples".

and skills, the government is also removing a valuable resource from the landscape, given the deep knowledge and understanding of all parts of the SES innate in San communities. Advocates for the San note that in areas where they have been removed, poaching and degradation increase.¹⁴³

At the same time, because land use rules and regulations continue to support large-scale cattle ranching, elite resource users continue to adopt and enact practices, which damage portions of the SES. Tswana elites own most of the cattle concerns in Botswana.¹⁴⁴ The national cattle herd, over three million strong, depletes water and grazing with impacts for local resource users and the viability of the system. Instead of adapting to depletion of resources by reducing herd sizes, elites have responded by pushing cattle further into remote areas, previously used primarily by wildlife and rural dwellers. According to Swatuk “the dominant philosophy among this group of cattle keepers is more borehole development, not fewer head of cattle.”¹⁴⁵ Elites pursue their economic goals both in reaction to exogenous forces, primarily subsidies, and in relation to social relationships that have developed over centuries in which the Tswana majority feel entitled to subjugate San minority groups. These actions are not conducive to the health of either social or ecological components in the SES, and may prove, over time, to create vulnerabilities.

¹⁴³ Ibid.

¹⁴⁴ Darkoh and Mbaiwa, "Globalization and the Livestock Industry in Botswana."

¹⁴⁵ Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana."

Illicit Users

The strength and resilience of Botswana's SES is evidenced by the almost complete lack of organized elephant poaching, even in the face of some local resistance to conservation and degradation of conservation norms. However both scholars and the governing authorities in Botswana are clearly concerned that organized poaching will move into the country as elephant populations in central and east Africa are poached to extirpation. Poaching of other high valued wildlife is increasing in Botswana.¹⁴⁶

In fact, some signs of the development of organized poaching in Botswana are beginning to emerge. Recent wildlife trafficking arrests have linked the Chinese immigrant business community to the trade in big cats and, to a lesser extent, ivory. Media reports suggest that Chinese construction crews are working with organized poachers to traffic ivory out of Botswana, launching poaching operations from construction sites.¹⁴⁷ However no evidence suggests Botswana is experiencing levels of illegal killing on par with east Africa.¹⁴⁸

Most of the poaching in Botswana, according to media reports, is cross-border poaching committed by small poaching gangs, sometimes including former guerrillas or militiamen, which use military style tactics and high caliber weapons.¹⁴⁹ Poaching militias operate in units of about seven people, with every

¹⁴⁶ Barbee.

¹⁴⁷ "Inside Botswana's Cocktail of Poaching Militias, Security Moles and Chinese Handlers," in *Sunday Standard* (14 February 2013), <http://www.sundaystandard.info/article.php?NewsID=16163&GroupID=1>.

¹⁴⁸ Tunomukwathi Asino, "Namibia: Chinese Man Gets Bail," in *AllAfrica.com* (4 August 2014), <http://allafrica.com/stories/201408042062.html>.

¹⁴⁹ "Inside Botswana's Cocktail of Poaching Militias, Security Moles and Chinese Handlers".

member of the group highly skilled in their area of specialization including providing surveillance intelligence, logistical support, or overall security. Poachers move into Botswana from Zimbabwe, Namibia, and Zambia, using local informants, sometimes subsistence hunters, to gather intelligence on wildlife.¹⁵⁰ Some reports indicate complicity with civil servants, law enforcement agencies, and security services. Poachers traffic ivory from Botswana through Zambia by truck for export, typically hidden with licit products.¹⁵¹

Despite these perturbations the SES remains resilient to these low-level threats.

Adaptation and Mitigation

Botswana's response to the poaching crisis has been two-fold. First, they have linked their local SES more closely to the international SES, framing the larger threats of uncontrolled transformation as locally relevant, in recognition of the interactions between levels and scales in the SES. Authorities in Botswana recognize the multi-level and multi-scalar nature of the SES.¹⁵² Second, Botswana is adapting policies and practices to strengthen local enforcement and management mechanisms to be pro-active and responsive to the increased threat from organized wildlife crime.

¹⁵⁰ Henk, "The Botswana Defence Force and the War against Poachers in Southern Africa." "Inside Botswana's Cocktail of Poaching Militias, Security Moles and Chinese Handlers".

¹⁵¹ "Inside Botswana's Cocktail of Poaching Militias, Security Moles and Chinese Handlers".

¹⁵² Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

On the international stage this has occurred through massive international public awareness raising campaigns in which Botswana has cast itself as a leader in conservation.¹⁵³ Botswana hosted two major conferences in 2013 and in 2015 to elevate the issue of wildlife trafficking within the international community. Both events brought leaders from across Africa and global leaders interested in combatting wildlife crime in an effort to develop a comprehensive approach to address the crisis.¹⁵⁴ These events laid the groundwork for follow-on international level meetings, symposiums, and conferences including large events in London, Tanzania, and South Africa. Through these venues and in separate initiatives, Botswana is actively developing partnerships with neighbors to address cross-border poaching and trafficking. Botswana joined the Wildlife Enforcement Network for Southern Africa (WENSA) to coordinate with regional neighbors on anti-poaching strategies for elephants, big cats, and other cross-border populations under threat.¹⁵⁵ Botswana is working with fellow African countries through regional initiatives such as the Southern African Development Community, and the Wildlife Protection and Law Enforcement Protocol to expand the scope of regional cooperation in the fight against wildlife poaching and trafficking.¹⁵⁶ Collaboration stretches to East Africa where Botswana signed an

¹⁵³ Xinhua News Agency, "Int'l Experts Gather in Botswana for Elephant Protection," in *GlobalTimes.cn* (23 March 2015), <http://www.globaltimes.cn/content/913608.shtml>.

¹⁵⁴ "Botswana Mps Want Wildlife Hunting Ban Lifted," in *news24.com* (17 March 2015), <http://www.news24.com/Green/News/Botswana-MPs-want-wildlife-hunting-ban-lifted-20150317>.

¹⁵⁵ Benjamin Shapi, "Botswana: Collective Response Can End Poaching," in *AllAfrica.com* (3 November 2014), <http://allafrica.com/stories/201411041178.html>.

¹⁵⁶ Xinhua News Agency, "Int'l Experts Gather in Botswana for Elephant Protection".

memorandum of understanding with Kenya to increase training opportunities for Kenyan rangers.¹⁵⁷

At the 2014 Wildlife Crime Symposium in London, Botswana pledged to put its ivory beyond economic use in recognition of the role a legal trade plays in covering for illegal trade. Botswana reversed its long-held stance on the feasibility and viability of an international ivory trade and dual-listing system for elephants. The country also agreed to support a ten year ban on all ivory sales through CITES.¹⁵⁸

Botswana took several proactive measures to protect wildlife within the local SES. Through a partnership with the AWF and the Kalahari Conservation Society, Botswana is drilling extra boreholes in the Makgadigadi National Park so elephants do not have to travel outside the park to obtain water, reducing poaching incidents and HWC.¹⁵⁹ Botswana also continues to track and interdict poachers. As cross-border poaching has increased, Botswana has adopted a “shoot to kill” policy, resulting in violent clashes with poachers.¹⁶⁰ The BDF continues to augment the park ranger force, working with intelligence services to track and interdict poachers.¹⁶¹ To stop rhino poaching, which could prove to be

¹⁵⁷ Thuso Kgakatsi, "Botswana: Govt, Kenya to Sign Memorandum of Understanding," in *AllAfrica.com* (3 June 2015), <http://allafrica.com/stories/201506040284.html>.

¹⁵⁸ Rebecca Morelle, "Four African Nations Spurn Ivory Sales," (2014).

¹⁵⁹ African Wildlife Foundation, *Tackling Poaching & Illegal Wildlife Trafficking in Africa*, (Nairobi: African Wildlife Foundation, 2014), https://www.awf.org/sites/default/files/media/Resources/Facts%20%26amp%3B%20Brochures/Wildlife%20trafficking%20booklet_lower-res.pdf.

¹⁶⁰ "Namibia and Botswana Clash over Elephant Poaching," in *99fm.com.na* (26 May 2015), <http://99fm.com.na/namibia-and-botswana-clash-over-elephant-poaching/>.

¹⁶¹ LeMonde.fr, "Protéger Les Elephants, Les Cinq Recettes Du Botswana," in *Gabonactu.com* (28 March 2015), <http://www.gabonactu.com/2015/03/protéger-les-elephants-les-cinq-recettes-du-botswana/>.

a precursor to mass elephant poaching, the government created a special unit, the Rhino Squad, with dedicated funding for equipment and training.¹⁶²

Botswana is attempting to address some of the challenges wildlife face due to fencing, though large-scale removal or discontinuation of the practice has not been seriously considered. More recently constructed fences have, however, been developed to be friendlier towards wildlife. The Makgadikgadi/Boteti fence, for example, was designed to zig-zag over a water course to allow cattle on one side of the fence, and migrating zebra and wildebeest on the other side of the fence, to both access water. In other cases the government has left gaps across critical wildlife corridors to allow the movement of migrating animals. In most cases, the government continues to erect fences as a first line of defense against the spread of disease, despite impacts on wildlife and lack of evidence that the fences actually control disease spread.¹⁶³

Other shifts in policy may, however, have unintended consequences and potentially perverse outcomes. One of the most popular aspects of the government's stance on wildlife conservation in Botswana has been the emphasis on utilization, both through local use and through the sale of resource rights to safari companies and hunting outfitters. Able to use wildlife under a quota system, Botswana have enjoyed a sense of responsibility for wildlife management. The hunting ban, implemented in 2014, has had the impact of further alienating and dispossessing local resource users. As skilled hunters and

¹⁶² Mbongeni Mguni, "Rhino Squad in Training for Botswana as Country Battles Poachers," in *Bloomberg Business* (16 March 2015), <http://www.bloomberg.com/news/articles/2015-03-16/rhino-squad-in-training-for-botswana-as-country-battles-poachers>.

¹⁶³ The Wild Foundation, "Cattle & Wildlife: Finding a Solution," <http://www.wild.org/where-we-work/veterinary-fence-issue/>.

trackers, these groups could become susceptible to the lure of poachers, as similar groups have in Gabon.¹⁶⁴ The same fear exists for professional hunters who could be attracted to illegal hunting, as has happened repeatedly in South Africa. The ban on hunting also costs jobs and money to communities.¹⁶⁵ Removing the ability to utilize wildlife, placing it as a commodity for wealthy Westerners to enjoy, may strain the positive conservation norms in Botswana, in particular as elephant populations expand with increasing impacts on human-wildlife conflict.

The government also continues to support the evictions of San and other communities from wildlife areas. In 2006 Botswana's High Court ruled the evictions were unlawful and unconstitutional, however the displaced peoples regained only limited access to the land and resources.¹⁶⁶ The government has not granted promised special exception licenses for hunter-gatherers wishing to access the CKGR. Specially designated enforcement authorities assigned to the GCKR, the Special Support Group, have targeted Bushmen communities and intimidated, threatened, and beaten the Bushmen. As noted by prominent advocates, "there is no evidence that the Bushmen of the CKGR hunt in any systematic way for sale, or use guns or vehicles, or hunt endangered species, or that their hunting is unsustainable. In the name of conservation they have had to pay a price out of all proportion to any threat that their subsistence hunting might

¹⁶⁴ Gettleman, "In Gabon, Lure of Ivory Is Hard for Many to Resist."

¹⁶⁵ Barbee.

¹⁶⁶ "Bushman Face Imminent Eviction for 'Wildlife Corridor'".

pose.”¹⁶⁷ The government’s attitude is that moving the San people out of “the dark ages” is about development and spreading mineral wealth.¹⁶⁸

Botswana continues to refine its CBNRM strategy in order to balance needs of local communities living near wildlife and the desire of the country to share the nation’s assets collectively. Reforms were under way at the time of publication.¹⁶⁹ However, reforms to the CBNRM process, while politically expedient, may prove to increase vulnerabilities in the SES. The centralized management of concessions and reallocation of assets fundamentally go against the principle of CBNRM and weakens the connections between local communities and the wildlife they live among. Communities lose their ability to prioritize development goals and are subject to state development priorities. Before the policy passed, communities retained the right to decide whether schools, hospitals, or other projects were the most important. Under the new policy they lose that authority and are the receivers of development projects determined by the central government. As Poteete notes, recentralization policies in Botswana did more to “transform wildlife into a national resource than it does to solve problems of local management and capacity.”¹⁷⁰ The shift in CBNRM programs also impacted NGO funding, much of which was withdrawn as the government increasingly recentralized control through the 2000s. Without

¹⁶⁷ Gordon Bennett et al., "Negative Impacts of Wildlife Law Enforcement in Botswana, Cameroon and India," *ibid.*, <http://assets.survivalinternational.org/documents/1369/negative-impacts-of-wildlife-law-enforcement.pdf>.

¹⁶⁸ BBC News, "Botswana Anger at Diamond Boycott over Bushmen Rights," in *BBC News* (3 November 2010), <http://www.bbc.com/news/world-africa-11685932>.

¹⁶⁹ Snyman, "Partnership between a Private Sector Ecotourism Operator and a Local Community in the Okavango Delta, Botswana: The Case of the Okavango Community Trust and Wilderness Safaris."

¹⁷⁰ Poteete, "Defining Political Community and Rights to Natural Resources in Botswana."

external support, CBNRM programs in most of Botswana struggle to recover costs and stay afloat.¹⁷¹

Conclusion

Applying the SESF to the Botswana case study illustrates how governing authorities understand linkages within the system, and the necessity to link local protections to international level actions, whether exploitive, consumptive, constructive, or preventative.

Botswana enjoys significant advantages over Kenya and Tanzania in terms of the small number of resource users living in and dependent upon the resource system, and the apparent lack of organized poaching, both of which, at the time of publication, contribute to the resilience of the SES. While Botswana has enjoyed these generally lucky circumstances, authorities are not relying on them to replace strategies to contend with perturbations to the system. And in fact Gabon, a country with similar attributes to Botswana- middle income status, a small number of people living near wildlife, and abundant elephant populations- has not developed resilient systems precisely for this reason. Gabon's SES is second only to Tanzania's in terms of over-exploitation and potential transformation, having lost two-thirds of its elephants in the past decade as a

¹⁷¹ Rihoy and Maguranyanga, "The Politics of Community-Based Natural Resource Management in Botswana."

result of weak laws, lack of enforcement, and estrangement and dispossession of local peoples.¹⁷²

The SESF illustrates how Botswana's strong laws, strict enforcement, essentially universal conservation norms, and transparent system of community based conservation initiatives increase resilience within its SES. By focusing both on domestic level actions and on the international level, governing authorities in Botswana are seeking a more permanent solution to the challenges associated with transnational organized crime to forestall the inevitable poaching onslaught which will occur if the system cannot adapt.

Botswana is attempting to adjust and adapt wildlife conservation strategies to meet the new realities of transnational criminal poaching before the resilience of its system is tested. By linking the local SES to the international SES, Botswana has raised the alarm within the international community, emerging as a global leader in and addressing preventing wildlife crime, and helped shape an understanding of local SESs as inextricably linked to the continental and global system.

At the time of publication Botswana is far better suited than Tanzania or Kenya to meet the onslaught and quickly identify and address perturbations in the system. But Botswana has not been challenged by transnational organized wildlife crime to any great extent. If ivory prices remain high, poachers will move into Botswana, and target the largest remaining herds of elephants in the world, testing the resilience of the system to absorb perturbations.

¹⁷² Gettleman, "In Gabon, Lure of Ivory Is Hard for Many to Resist."

The concluding chapter illustrates how the SESF, applied to this project, explains outcomes in the international SES and in the three case studies, Kenya, Tanzania, and Botswana through the lens of Cash's scale and level challenges to understanding SES dynamics.¹⁷³ Second, the chapter will focus on the three broad questions Ostrom argued the SESF can answer, as well as briefly address the hypotheses identified in the research design.¹⁷⁴ Next the chapter identifies areas for further research, and, finally, the chapter concludes with a synthesis of key insights.

¹⁷³ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

¹⁷⁴ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

CHAPTER 8

CONCLUSION

Multiple goals informed this research including, first, to explicate and describe the potential causal factors degrading or improving SES resilience related to poaching; second, to identify and explain cross scale and cross level challenges to SES performance; third, to describe and compare specific case studies utilizing the SESF; and fourth, to contribute to a critique of present conservation strategies related to social components of the SES.¹ The research essentially focused on three primary questions: What conditions exist which allow some states to better protect their wildlife than other states? How can states in the developing world withstand the pressures of rising global demand for limited wildlife resources? And, what group of factors operate together to protect wildlife and maintain sustainability?

The research was motivated largely by a concern over the exponential growth of wildlife crime, and its serious and negative impacts on wildlife and human communities. Transnational organized crime (TOC), taking advantage of global connectivity and complex interconnections which link remote wildlife areas with urban markets, coupled with climate change, habitat loss, and other man-made threats, is contributing to what scientists are calling the sixth mass extinction. Recent estimates suggest that 75 percent of all species will disappear within the next three generations. Wildlife ranging from coral reefs, Venus flytraps, and leeches to rhinoceros, elephants, sharks, and seahorses will be

¹ Berkes, Colding, and Folke, "Introduction."

impacted. Solutions to these environmental challenges must acknowledge the kind of scale dynamics the social ecological framework, applied throughout this project, can identify. Monocausal factors can provide some insights, but without contextualizing the information analysis becomes reductive and oversimplified, and worse, leads to inappropriate, ineffective, and damaging policies.

This final chapter will first illustrates how the SESF explained outcomes in the international SES and the three case studies, Kenya, Tanzania, and Botswana through the lens of Cash's scale and level challenges to understanding SES dynamics.² Second, the chapter will focus on the three broad questions Ostrom argued the SESF can answer, as well as briefly address the hypotheses identified in the research design.³ The subsequent section identifies areas for further research. And, finally, the chapter concludes with a synthesis of key insights.

Outcomes: Applying the SESF

Specific characteristics of the SESF, including its inclusion of variables as nested and tiered; acknowledgement of scale and level dynamics; and ability to disaggregate the features of globalization allow the framework to identify Cash's three scale and level challenges.⁴ These include not recognizing or ignoring scale dynamics entirely; the "persistent mismatch between levels and scales;"

² Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

³ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

⁴ Binder, "Comparison of Frameworks for Analyzing Social-Ecological Systems."

and “the failure to recognize heterogeneity in the way that scales are perceived and valued by different actors.”⁵ This section will provide examples from the case studies to illustrate how applying the SESF, specifically these features, provided greater insights into outcomes than simple mono-causal explanations that focus on the role of poverty; conservation norms; state level factors like weak governance and weak enforcement; land management strategies; the trade ban; and neo-liberal conservation reforms as largely separate explanations for current outcomes. A broad brush approach to poaching “in Africa,” does not take into account heterogeneity in problem sets; in interactions between the governing authorities and resource users; does not address specific challenges to governance which arise in a specific context and operate in a specific way. Ignoring heterogeneity ignores scale dynamics all together.

By applying the SESF to these three cases studies, linkages emerge across levels and scales of the SES, illustrating how interactions at the domestic level- such as legislation and the actions of resource users- can impact the international system, while international level factors such as increased illicit ivory use and CITES’ enforcement actions can shift outcomes in the domestic SES. No one factors, or small combination of factors can explain how the system developed either at the international level, or at national levels. At each level, SESs are complex non-linear systems.

⁵ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

Scale Dynamics

As Cash notes, the primary challenge occurs when policymakers fail to recognize or ignore entirely scale and level dynamics.⁶ Because the SESF acknowledges variables within nested tiers in the system, and their relationship across levels and scales of analysis- spatial, temporal, jurisdictional, institutional, management, networks, and knowledge- multiple perspectives of an SES can be studied simultaneously, if those portions impact ecological or social outcomes. Simply stated, how individual resource users operate in the system, and how the system impels or compels them to interact- in particular considering scale dynamics related to global trade- can reduce resilience in the system, or bolster it.

Because anthropogenic forces affecting ecosystems occur at all levels of social organization, any comprehensive account of the institutional dimensions of global environmental change must deal with processes at work at each of these levels.⁷ All of the case studies illustrate the importance of scale dynamics in explaining SES outcomes. Chapter 4 describes how interactions between parts of the international level SES- resources, users, governance systems, and the system, have largely occurred in the context of an open-access system, leading to local extirpation of elephant resources and the transformation of the SES over time. The outcomes of the international level SES, fragmentation, transformation, and shrinkage, relate to jurisdictional/geographic, institutional,

⁶ Ibid.

⁷ Young.

temporal, and knowledge challenges. Mechanisms at the international level lack enforcement capabilities; these deficiencies are mirrored at the tiers nested below in state enforcement systems. Laws restricting trade are essentially unenforced at all levels. Neither the governance systems involved nor non-consumptive resource users adequately fund measures to protect wildlife from the current scale of exploitation. CITES as an international governance authority is limited in its ability to protect species by lack of consensus amongst parties on the political, economic, and cultural valuations of endangered species. Ignoring these scale dynamics leads to inaccurate assessments of the challenges facing the SES at any level.

In Kenya linkages emerge across levels and scales of the SES, illustrating how interactions at the domestic level, such as legislation and the actions of resource users, can impact the international system, while international level factors such as increased illicit ivory use and CITES' pronouncements can shift outcomes in the domestic SES. Kenya's weak laws and lack of enforcement enable international ivory traffickers to penetrate its porous borders and move massive quantities of ivory to international markets, with impacts rippling across the international SES as elephant populations throughout Central Africa are poached to extirpation. By centralizing wildlife policies, the government has marginalized stakeholder participation in efforts to manage the SES and combat poaching, damaging indigenous conservation norms and removing the responsibility to conserve and protect from local communities. Similarly, the lack of a speedy response at the domestic level to changes in the global resource

system driven by shifting resource utilization strategies has impacted the health of the system, and its ability to absorb perturbations and disturbances.

In Tanzania resource users resist conservation and participate in commercial poaching, feeding global ivory markets and introducing vulnerability in the local system with impacts across scales. Application of the SESF to the Tanzanian case reveal cross-level and cross-scale interactions which are leading to the uncontrolled transformation of the SES. Single factor explanations such as “corruption” or “mismanagement” are inadequate to explain the complex interactions across the SES.⁸ This is because both endogenous and exogenous forces simultaneously pressure both the social and ecological components of the system, with negative impacts for resilience of both. The interplay of globalizing forces, including the hyper consumption of Asian consumers; connectivity of global markets; and application of perverse forms of neoliberal conservation, combined with processes occurring at the domestic level including corruption, and rent seeking, have severely degraded conservation norms. These patterns of conflict between users and authorities together explain SES outcomes.⁹

Similarly, in Botswana an examination of nested tiers of the SES reveals how forces can positively impact the local and international SES. Scale dynamics are specifically acknowledged through Botswana’s domestic policies meant to increase safety of local populations within the context of a global threat. Governance authorities in Botswana recognize their elephants as part and parcel

⁸ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas."

⁹ Young et al., "The Globalization of Socio-Ecological Systems for Scientific Research."

of the global SES, and that in order to safeguard local wildlife, the entire system must be shored up.

Understanding cross-scale and cross-systems interactions helps explain why resource usage changes in an area. With the advent of globalization, decisions at one level of organization in one geographical location impact people and resources elsewhere.¹⁰ Global change is linked to a complex set of local processes, and vice versa.¹¹ Hyper-consumption in Asia, global trade, neo-liberal conservation trends, and privatization have played important roles in shaping the SESs examined, with specific impacts on outcomes, both positive and negative. In all three case studies, indigenous people with deep knowledge and understanding of resource dynamics were largely excluded from governance of the resource system, constructed as environmental villains or as backward and anti-modern. The antidote, community-based conservation, was meant to address the outcomes of fortress based conservation, namely over-exploitation; human wildlife conflict; weak conservation norms; and resentment towards wildlife. As the case studies illustrate, through globalization and market processes, some of the most marginalized people in the world are now “at the center of global environment and development discourse and practice.”¹² Their interactions within the resource system have become the object of interest of national governments and international conservation organizations and IGOs expressly because their interactions with the resource system not only impact

¹⁰ Folke, "Social–Ecological Systems and Adaptive Governance of the Commons."

¹¹ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

¹² Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana."

local SESs, but also trickle up and across the system to affect broader outcomes.¹³

The SESF allows for the examination of **temporal** shifts in patterns and processes, and takes into account how past patterns and processes shape a system in order to, when appropriate, examine scale dynamics operating across time to help explain outcomes. By closely examining historical interactions, policymakers can better shape locally appropriate solutions, which acknowledge past challenges. Temporal scale dynamics proved important in this study for each of the cases. As Young argues, because “institutions that yield acceptable results during some stages of their existence may contribute to the occurrence of significant environmental problems during other stages,” it is crucial to constantly examine the fit between resource users and governance systems, including how those organizations and the rules and regulations that shape them came to be.¹⁴ In each of the cases studied, the SESF illustrated how conditions of the modern SES relate to policies and practices stretching into the earliest colonial era, and in some cases the pre-colonial era, creating a more nuanced understanding of the differences in outcomes across systems. Fortress-style conservation worked prior to in-migration to conservation areas and cycles of over-consumption proved it untenable. Colonial policies generally centralized decisions on wildlife and land usage, marginalizing and in some cases alienating resource users within the system, inculcating a lack of conservation norms and removing any sense of responsibility for the health of the resource system. Where that occurred

¹³ Ibid.

¹⁴ Young.

less, in Botswana, the SES has developed to be more resilient. Devolving centralized control proved to be a challenge in each case. CBNRM programs, as the case studies illustrate, similarly emerged as elite vehicles which did not ultimately strengthen wildlife norms or increase feelings of responsibility towards wildlife, and in some cases, actually increased the sense of competition between communities and conservation.

Mismatch between Levels and Scales

As Cash notes, the SESF also reveals the “the persistence of mismatches between levels and scales.”¹⁵ A mismatch can refer to a poor fit between the size and range of a resource system and the governing authority overseeing it, or refer to “the challenge of matching the scale of knowledge about a problem (global climate change models, biodiversity loss), and the scale of jurisdiction for solving that problem.”¹⁶

Mismatches in the size of the resource system and the level of governance and authority are evident when examining each case study as a subset or lower tier of the international SES, and apply broadly to the challenge of CITES to provide oversight to the management of the international SES. The countries studied all increasingly link, at least rhetorically, SES outcomes to interactions and governance at the supra-state level. This emphasis overstates the role of CITES in protecting species from exploitive trade, while underplaying

¹⁵ Cash et al., "Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World."

¹⁶ Ibid.

interactions between other variables in the system, many beyond the ability of CITES or other supranational authorities to influence. Their willingness to address sub-state levels, however, will ultimately have the greatest impact on each individual system's ability to absorb perturbations.

As the case studies illustrate, examining the challenges facing the international SES as a mismatch between scales of knowledge about a problem and the scale of jurisdiction for solving the problem, also proved informative. Issues facing the SES are framed and shaped according to political, cultural, and economic expedience by the most voracious resource users, creating a disconnect between how the system is valued by local users as opposed to distant users.

As Chapter 4 notes, the groups with the most potential capability to immediately disrupt the disturbances in the system- Asian, in particular Chinese, governing authorities and Asian consumers- do not recognize poaching in Africa as a problem that can be met under their jurisdiction. The lack of conservation norms or a deep understanding of SES dynamics, either in terms of elephant biology or the weakness within nested tiers of the governance system, partly explains Chinese policies to promote utilization over conservation. The governing institutions have not been able to halt the over-exploitation of the system or to mitigate or control illicit resource users. By shaping poaching problems as related more to African governance and enforcement failures than as a market

response to hyper-demand, Chinese leaders and consumers can justify continued mass consumption.¹⁷

On the flip side, Botswana governing authorities note challenges to their local SES as specifically related to the global SES, and as under the jurisdiction of international authorities which they have repeatedly called upon to act.

Heterogeneity

The last scale challenge Cash identified is the failure to recognize heterogeneity in the way that scales are perceived and valued by different actors, even at the same level. Treating actors as homogenous and motivated by the same values and goals assumes a universality of norms that does not exist, limiting the potential for tailored, culturally relevant and effective solutions. Depending on how they perceive perturbations in the system, actors can choose to shape a problem as local or global, to either draw attention to the problem or to off-set responsibility.¹⁸

While similarities exist, each country studied has had a different experience with wildlife management, experienced different outcomes, and operates in a different geographic and socio-cultural historic context. Not all actors in the system view the problem the same way. Ignoring heterogeneity also ignores the scale dynamics in the system. The scale challenges noted above can be recast as failures to recognize heterogeneity in the system.

¹⁷ Ibid.

¹⁸ Ibid.

In Kenya, factors at tiers nested below the international SES impacting outcomes include the small size of the resource system; increasing human populations in wildlife buffer zones; inadequate land use and tenure policies; corruption within the port administration and police; incompatible land use strategies; and weak conservations norms. In Tanzania, deep distrust of conservation authorities; intense human wildlife conflict; degraded conservations norms; and rules and regulations favoring short-term exploitation for rent-seeking elites provide a backdrop to market-driven overexploitation of the system enabled by sophisticated and well connected transnational organized crime syndicates. In contrast, in Botswana dedicated leadership; strong enforcement mechanisms; a proactive and multi-scalar approach to addressing wildlife crime; a sparsely human populated resource system; and deep seeded conservation norms contribute to a resilient system.

Resilience, Adaptability, and Transformability:

Ostrom's Primary Research Questions

This study provides insights into the three primary questions Ostrom's SESF proposes to uncover which feed into determinations of an SES's resilience, adaptability, or transformability. To reiterate from Chapter 3, the questions are:¹⁹

What patterns of interactions and outcomes such as overuse, conflict, collapse, stability, and increasing returns, are likely to result from using a particular set of rules for the governance, ownership, and use of a

¹⁹ Ostrom, "A Diagnostic Approach for Going Beyond Panaceas," 15182.

resource system and specific resource units in a specific technological, socioeconomic, and political environment?

What is the likely endogenous development of different governance arrangements, use patterns, and outcomes with or without external financial inducements or imposed rules?

How robust and sustainable is a particular configuration of users, resource system, resource units, and governance system to external and internal disturbances?

Applying these questions to the specific case studies explored in this project, one can alter the questions to read:

1. What patterns of interactions and outcomes (such as overuse, conflict, collapse, stability, and increasing returns), are likely to result from the implementation of centralized wildlife management coupled with neo-liberal conservation and community based resource management in Kenya, Tanzania, and Botswana?
2. What is the likely endogenous development of community based management, use patterns, and outcomes without external financial inducements or imposed rules?
3. How robust and sustainable is the SES in Kenya, Tanzania, and Botswana to external and internal disturbances?

The patterns of interactions and outcomes which emerged through an examination of the primary mode of conservation in the three cases studies- are conflict, decreasing returns, overuse, and in at least one instance, Tanzania,

collapse. Even in Botswana, which has experienced almost no organized wildlife crime, almost all wildlife populations, with the notable exception of elephants, are in decline; resource users are increasingly isolated from the process of governance of wildlife resources; and competition between wildlife and human communities are increasing, to the detriment of the ecological system which is suffering from water depletion, desertification, wildfires, and other degradation caused primarily by anthropogenic forces.

These forms of control over wildlife and conservation developed squarely in the context of the international conservation discourse, first shaped by notions of centralized exclusive control of wildlife and resources; then through fortress-style conservation and the separation of communities and wildlife; and later through the widespread adoption of neoliberal conservation and the broader Washington Consensus agenda pushed through the international development community.²⁰ As the case studies reveal, despite rhetoric focused on community empowerment governments have progressively recentralized control over wildlife resources, bolstering existing literature on CBNRM. CBNRM, absorbed back into central governing authorities or as controlled by elites and private companies, has become more about managing people and capturing control of resources than about conservation.²¹

As evidence from the cases presented illustrate, Kenya, Tanzania, and Botswana represent varying levels of resilience, adaptability, or transformability.

²⁰ McAfee, "Selling Nature to Save It? Biodiversity and the Rise of Green Developmentalism."

²¹ Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana." Poteete, "Defining Political Community and Rights to Natural Resources in Botswana." Twyman, "Participatory Conservation? Community-Based Natural Resource Management in Botswana."

Per Folke, Kenya's SES can be said to be in an adaptive stage. Adaptability is about the human management of resilience in the system. Adaptability refers to the ability of an SES to learn; adjust to both internal and external factors and processes; and to continue developing within the stability domain.²² Kenya is attempting to manage resilience through adaptation of its governing systems and relations to and interactions with resource users. Tensions continue to exist within Kenya between the centralizing tendencies of the wildlife establishment and the ethics and rhetoric of decentralization espoused in public policy. If Kenya cannot resolve these tensions resource users will continue to make decisions that best benefit their immediate needs, not the longer terms requirements for resource conservation.

When stability domains shift beyond thresholds and 'new' systems emerge one may consider the SES to have 'transformed,' impacting both societies and environments.²³ While transformation does not have to be uncontrolled or unplanned, or result from sudden shifts in the SES, that is what occurred in Tanzania. Tanzania has experienced an uncontrolled transformation, with portions of its SES in collapse. While Tanzania should have been well suited for the application of neo-liberal conservation- a large and seemingly resilient SES, adequate legislative framework, and ample funding and support- conditions within the governing authorities, and within the application of reforms, instead imperiled the resource system.

²² Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability."

²³ B. H. Walker, N. Abel, J. M. Anderies, and P. Ryan, "Resilience, Adaptability, and Transformability in the Goulburn-Broken Catchment, Australia," *ibid.* 14, no. 1 (2009).

At the other end of the spectrum, Botswana is strengthening its system's resilience in anticipation of emergent threats. The leadership in Botswana recognizes that more resilient systems can absorb larger shocks and withstand more disturbance. As a resilient system, Botswana has effectively adjusted policies, practices, and procedures to adapt to threats emerging at the international, and increasingly regional, level of the SES.²⁴

Hypotheses

The dissertation also posed six hypotheses. These are:

Hypothesis 1: In SESs where more modes of authority exist, systems will be less resilient to perturbations.

Hypothesis 2: The imposition of rules from external organs increase the resilience of an SES.

Hypothesis 3: When local communities engage in the management of wildlife industries the SES will be more resilient to disturbances than in cases where communities do not engage in the management of wildlife industries.

Hypothesis 4: Resource stress or collapse is more likely to occur in states with weak wildlife crime legislation and/or poor enforcement of wildlife crime legislation than in states with strong wildlife crime legislation and effective enforcement.

²⁴ Carl Folke et al., "Resilience Thinking: Integrating Resilience, Adaptability and Transformability," *ibid.* 15, no. 4 (2010).

Hypothesis 5: In areas where human-wildlife conflict is not effectively addressed, the SES will be less resilient than in areas where human wildlife crime is effectively addressed.

Hypothesis 6: An SES characterized by geographic fragmentation is less resilient to disturbances than a contiguous SES.

The case studies provided information and analysis on each of these hypotheses, affirming hypotheses 1, 4, 5, and 6. More modes of authority did not increase SES resilience in any of the cases. In Tanzania where multiple government agencies and hundreds of NGOS operate to oversee wildlife conservation and CBNRM, SES outcomes are the direst. Multiple and overlapping authorities have not provided extra protections. States with weak wildlife legislation do suffer a higher percentage of illegal killings, as evidenced by Tanzania and Kenya which both have far higher rates of illegal killings than Botswana. SES resilience is challenged by human-wildlife conflict. In Tanzania, where communities express an intense sense of conflict and competition with governing authorities and wildlife, the most illegal killings occur. And lastly, in all cases fragmentation of the SES presented challenges both in the short and long term, creating threats for wildlife from both illegal killing and lack of access to water, forage, breeding grounds, and other essential landscape features required for survival.

The case studies did not affirm hypotheses 2 and 3. As the case studies and Chapter 4 illustrate, the imposition of external rules has not increased the resilience of local SESs. In many cases states have been remiss in

implementing rules and regulations suggested by CITES or pushed by NGOs and IGOs. And lastly, little evidence suggests that community management of wildlife achieves any of the goals of community-based conservation, either in terms of the social or ecological components of the system, as evidenced throughout the cases.

Areas for Further Research

Because of the comprehensive nature of this research, multiple questions flow from the findings, in particular about the application of neoliberal principles to conservation and related to community-based wildlife management.

Scholars continue to propose that the sales of endangered species can fund conservation efforts. Both wild-caught and farmed wild animals supply products for growing markets. Important questions focused on how marketing, product differentiation, constant expansion, and competition among suppliers impact endangered species must be explored. As media reports illustrate, products initially marketed as luxury goods inevitably evolve into mainstream products. This phenomenon can be seen in the production of caviar. Initially marketed as an elite food, health and beauty products, including shampoo, now contain caviar, marketed for its moisturizing properties and ability to boost "shine" in hair. Similarly, bear bile- once only used sparingly in traditional Chinese medicine- is now used in shampoo, throat lozenges, toothpaste, wine, and tea.²⁵

²⁵ Cages of Shame, "About Bear Bile Farming in China," <http://www.cagesofshame.com/page2.html>.

While in the case of ivory scale dynamics operating across levels of the SES are depleting wildlife, in other cases local consumption of wildlife products, increasingly coveted as status symbols, drives resource depletion. Forests in Central Africa are being denuded of animals for the local bush meat trade. Studies focused on the drivers of trade can highlight how scale dynamics within nested tiers of an SES impact outcomes and exacerbate challenges.

As governance authorities and conservation organizations continue to push CBNRM programs as the best solution to conservation challenges, more in-depth studies of the power dynamics between groups can help policymakers anticipate impediments to implementation. Maasai, Baswara, and Batwa peoples, for example, have been treated as threats to wildlife when in reality these groups' cultures all evolved within the context of wildlife. In fact, their continued existence as peoples in part depends on maintaining their relationships with wildlife to reproduce culture through myths, stories, and key interactions. At the same time, these groups are all marginalized, and have experienced evictions and dispossessions to protect wildlife. Considered backward and anti-modern by African governments, programs which devolve authority and control over increasingly valuable resources to these groups are unlikely to succeed.

A common refrain from critics of conservation in Africa focus on the role of western NGOs in driving policy. However, local activists, journalists, and political leaders across Africa have emerged as important advocates for wildlife. Research focused on how local activists successfully drive change can inform western NGOs and assist in developing best practices for the transfer of norms.

Conclusion

After the last poaching crisis in the 1980s, the international community agreed on two approaches to fighting poaching- an ivory trade ban, which worked until it was undermined by the two “one-off” sales through CITES; and the adoption of community based natural resource management, or community based conservation, which was never really accepted or fully implemented by the African governments examined in this study. These are the same exact strategies now being bandied about as solutions to the crisis facing wildlife, with little real discussion over the challenges to both. The social-ecological systems framework was designed by Ostrom to allow researchers and policymakers to move beyond panacea approaches to resource crises, such as a sales ban or CBNRM, applied without full understanding of the social-ecological dynamics operating across levels and scales in the system.

Applying the SESF, cross-scale and multilevel challenges help explain why the sales ban and CBNRM have failed to safeguard much of the SES. Challenges to the ban, explored in Chapter 4, include uneven implementation at the sub-state level, meaning a legal domestic trade continued after 1989 in many countries; Chinese government policies promotion of ivory sales; the emergence of ivory investors and speculators; and the emergence of transnational organized crime, operating in the context of vastly increased global trade. Challenges to CBNRM, examined in the case studies, include elite capture of revenues; government resistance to devolution and loss of authority over communities and

resources; deep seeded resistance to conservation authorities; population expansion into wildlife buffer zones and dispersal areas; and the global/local arbitrage on land values in the international market.

While the tide is turning against “one-off” sales, with reversals in support from Tanzania and Botswana in particular, support remains for the expansion of CBNRM. Yet little evidence exists suggests the two outcomes expected from CBNRM programs- the “maintenance of wildlife habitats and preservation of species, and improved social and economic well-being of the communities”- have been achieved on a large scale.²⁶ As evidenced by the case studies, after about two decades of operations across multiple countries, the ability of CBNRM to achieve either of these goals is highly questionable. Governments have resisted the redistribution of authority to local communities over resource use or the revenues generated. As Swatuk points out, typically the blame for project failure is pushed onto receiving countries and communities, ignoring power dynamics between donors, NGOs, governments, local communities.²⁷ However, as the case studies indicate, socio-cultural dynamics and interactions between resource users, resource units, and the governance systems, occurring over decades and in some cases centuries, has hampered the implementation of these programs. Dynamics which have occurred over the last century between resource users, units, and governance authorities in the system also impact ecological outcomes, not simply the rise in demand in Asia. Centralization of authority; exclusion of

²⁶ Songorwa, "Community-Based Wildlife Management (Cwm) in Tanzania: Are the Communities Interested?."

²⁷ Swatuk, "From "Project" to "Context": Community Based Natural Resource Management in Botswana."

local peoples; distrust of conservation officials; the perception that wildlife and conservation are “for the whites;” perceptions of dispossession; weak laws and enforcement; and unmet expectations have been factors in the interactions between users and the system. In theory, CBNRM addressed these challenges to conservation, though in practice communities are not closely involved with management or land-use decisions; revenues flow to elites or, in the case of Tanzania and Botswana, back through the central government; and resource users express a disconnect with wildlife and feelings of intense competition with animals and conservation authorities over their basic rights.

Solutions must acknowledge scale dynamics and scale challenges. Stopping the illegal trade in ivory will not solve the larger problem of wildlife crime. Wildlife crime must be rigorously and vigorously pursued. The market for wildlife products is growing, not only in Asia, but in the west. Any approach to wildlife crime must acknowledge the scope and scale of the crimes, and look past charismatic species. The global market moves very fast. By the time regulators recognize a new trend, wildlife populations will be depleted. An ivory only approach that seeks to stop one traffic, but continues to ignore others, will result in a cycle of crisis as species after species is forced into crisis.

Applying the SESF to the cases revealed that poaching is not necessarily the greatest threat to each system. In Kenya the SES is beset by challenges due to overcrowding, the small size of its system of protected areas, ad hoc development, lack of rules and regulations on land use, and the added challenges which will likely emerge as CBNRM programs become more

widespread. Similarly, in Tanzania- assuming poaching can be addressed- the SES will still struggle with weak conservation norms, distrust of wildlife officials, a sense of acute competition between resource users and authorities, deep resentment towards wildlife, and a broken governance system. Botswana's primary challenge is reconciling development priorities to align with social and economic goals, while staving off encroachment of transnational organized crime, now operating in neighboring states.

Solutions must acknowledge scale dynamics and scale challenges. Stopping the illegal trade in ivory will not solve the larger problem of wildlife crime. Wildlife crime must be rigorously and vigorously pursued. The market for wildlife products is growing, not only in Asia, but in the west. Any approach to wildlife crime must acknowledge the scope and scale of the crimes, and look past charismatic species. The global market moves fast. By the time regulators recognize a new trend, wildlife populations will be depleted. An ivory only approach that seeks to stop one traffic, but continues to ignore others, will result in a cycle of crisis as species after species is forced into distress and possible extirpation.

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