

# What Sustains Wildlife Crime? Rhino Horn Trading and the Resilience of Criminal Networks

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## 1. INTRODUCTION

For the last several thousand years, humans have regarded other sentient and non-sentient species as resources and tradable commodities, a perspective that has often had negative impacts on biodiversity. The practice of procuring and trading exotic animals can be traced back to both the Egyptians, from 2500 BC, and the Greeks, from the 7th century BC.<sup>1</sup> In Roman times demand escalated significantly when ‘quite impressive’ numbers of animals were used and killed for entertainment in the amphitheatre games from as early as 186 BC until the last games in AD 523.<sup>2</sup> Animal harvesting by the Romans may have resulted in extinctions, or at least severe reductions, in populations.<sup>3</sup>

Illegal poaching also has the potential to drastically reduce biodiversity by driving species to extinction. Over-harvesting, including by way of illegal poaching, together with habitat destruction, pollution, and the introduction of invasive species, led to an estimated decline in populations of all vertebrates—excluding humans—of on average 30 percent between 1970 and 2005.<sup>4</sup> According to some, biodiversity loss today is as serious a problem as climate change in ‘eroding our own life support system from under our feet.’<sup>5</sup>

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<sup>1</sup> Michael Mackinnon, *Supplying Exotic Animals for the Roman Amphitheatre Games: New Reconstructions Combining Archaeological, Ancient Textual, Historical and Ethnographic Data*, 6 *MOUSEION* 137–161 (2006).

<sup>2</sup> *Id.* at 142.

<sup>3</sup> The Atlas or Carthaginian elephant that inhabited northern Africa, for instance, became extinct in that region around the 2nd century BC due to overhunting to supply the games, for use in war, and for ivory. See RICHARD E. LEAKEY & ROGER LEWIN, *THE SIXTH EXTINCTION: PATTERNS OF LIFE AND THE FUTURE OF HUMANKIND* (1996).

<sup>4</sup> JONATHAN E.M. BAILLIE, JANINE GRIFFITHS, SAMUEL T. TURVEY, JONATHAN LOH, & BEN COLLEN, *EVOLUTION LOST: STATUS AND TRENDS OF THE WORLD’S VERTEBRATES* (2010).

<sup>5</sup> Will Steffen, *Rio+20: Another Step on the Journey towards Sustainability*, *THE CONVERSATION* (29 June 2012), <http://theconversation.edu.au/rio-20-another-step-on-the-journey-towards-sustainability-7885>.

The regulation and criminalisation of transnational trading in wildlife did not occur until the 20th century. In 1973 the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was agreed to by 80 countries meeting in Washington, DC. It came into force on 1 July 1975. There are currently 176 parties. CITES aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival. Close to 35,000 species of animals and plants are listed in one of the Convention's three appendices. Each appendix grants a different level of protection to the listed species.<sup>6</sup> Parties are required to implement the Convention in their national laws, taking appropriate measures to penalise trade in or possession of relevant specimens. Complementing CITES are a number of other international agreements relating to biodiversity.<sup>7</sup>

Implementation of international agreements such as CITES has involved a range of practical measures, as well as an outpouring of rhetoric in national and international forums. Yet illegal trading in wildlife continues. Given that the trade is increasingly meeting with resistance from states and the international community in the form of law enforcement and regulatory initiatives, the question arises as to why it persists. What makes it sustainable and provides support to those involved in it? Clearly it is highly profitable. The global value of the illegal trade in wildlife is unknown, although it has been estimated at around US\$7.8–\$10 billion, excluding timber and fisheries.<sup>8</sup> It has been variously ranked as the third most valuable illicit market after drugs and arms<sup>9</sup> or the fifth most valuable illicit market after counterfeiting and the

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<sup>6</sup> 993 U.N.T.S. 243. CITES 'uplisting' (e.g., from the less protected Appendix II to the more protected Appendix I) may lead to an increase in the commercial value of a species and consequentially to more illegal trading in that species. Philippe Rivalan and his colleagues note that the price of rhino horn on Korean markets increased by more than 400 percent within two years of listing, and this coincided with an increase in poaching of Black rhinos for the illegal horn trade. See Philippe Rivalan et al., *Can Bans Stimulate Wildlife Trade?* 447 NATURE 529–530 (2007).

<sup>7</sup> In addition to CITES, the main agreements are the Convention on Biological Diversity, 5 June 1992, 1760 U.N.T.S. 79, entered into force on 29 December 1993; the Convention on the Conservation of Migratory Species of Wild Animals, 23 June 1979, 1651 U.N.T.S. 333, entered into force on 1 November 1983; the Convention on Wetlands of International Importance Especially as Waterfowl Habitat, 2 February 1971, 996 U.N.T.S. 245, entered into force on 21 December 1975; the International Treaty on Plant Genetic Resources for Food and Agriculture, 3 November 2001, 2400 U.N.T.S. 303, entered into force on 29 June 2004; and the Convention concerning the Protection of the World Cultural and Natural Heritage, 16 November 1972, 1037 U.N.T.S. 151, entered into force on 17 December 1975. These are supplemented by regional agreements, such as the Convention on the Conservation of European Wildlife and Natural Habitats, 19 September 1979, 1284 U.N.T.S. 209, entered into force 1 June 1982, and agreements that relate to specific parts of the globe, such as the Convention on the Conservation of Antarctic Marine Living Resources, 20 May 1980, 1329 U.N.T.S. 47, entered into force 7 April 1982.

<sup>8</sup> Jeremy Haken, *Transnational Crime in the Developing World*, Report for Global Financial Integrity (Washington, D.C., February 2011), at 11. [http://www.gfintegrity.org/storage/gfip/documents/reports/transcrime/gfi\\_transnational\\_crime\\_web.pdf](http://www.gfintegrity.org/storage/gfip/documents/reports/transcrime/gfi_transnational_crime_web.pdf).

<sup>9</sup> See TRAFFIC, *Wildlife Trade: What Is It?* <http://www.traffic.org/trade/>.

trades in drugs, people, and oil.<sup>10</sup> But while profit provides a motivation for continuing the illegal trade, it does not alone determine its persistence in the face of challenge.

Any explanation for the persistence of the illegal wildlife trade requires an understanding of the criminal networks involved.<sup>11</sup> These may include organisations, gangs, syndicates, and other collectivities. Designing effective policies to reduce the illegal wildlife trade requires an understanding of the individuals and groups driving wildlife crime, specific to the geographical area and species.<sup>12</sup> The literature has mostly dealt with this issue tangentially, focusing primarily on the plight of various species and the advantages and disadvantages of possible solutions, ranging from stricter penalties and greater efforts to enforce,<sup>13</sup> to the application of situational crime prevention techniques<sup>14</sup> and community-based solutions.<sup>15</sup>

Actor networks have usually been described only in general terms. Knowledge of these networks is, however, slowly growing. Warchol, for example, describes various networks involved in trafficking of South African and Namibian wildlife. Pires tells of the poachers and middlemen involved in the illegal parrot trade throughout the neo-tropics. South and Wyatt discuss the associations and networks involved in the illegal wildlife trade in

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<sup>10</sup> See Global Financial Integrity, *Transnational Crime in the Developing World: Rankings*, <http://transcrime.gfintegrity.org/>.

<sup>11</sup> A network can be defined as 'a set of nodes (e.g., persons, organizations) linked by a set of social relationships (e.g., friendship, transfer of funds, overlapping membership) of a specified type'. See Nitin Nohria, *Is a Network Perspective a Useful Way of Studying Organizations?* in NETWORKS AND ORGANIZATIONS: STRUCTURE, FORM, AND ACTION 1–22, 4 (Nitin Nohria & Robert G. Eccles eds., 1992). The term 'criminal networks' is used in this article to mean forms of criminal organising where linkages of communication and exchange among actors are predominantly lateral or horizontal, giving these forms of organising more flexibility and adaptive capacity than vertically configured hierarchies. See Phil Williams, *Transnational Criminal Networks*, in NETWORKS AND NETWORKS: THE FUTURE OF TERROR, CRIME AND MILITANCY 61–97 (John Arquilla & David Ronfeldt eds., 2001). That is not to say that hierarchies cannot form parts of networks.

<sup>12</sup> Vanda Felbab-Brown, *The Disappearing Act: The Illicit Trade in Wildlife in Asia*, Working Paper No. 6 (Brookings Institution, Washington, D.C., June 2011), at 13.

<sup>13</sup> John T. Webb, *Prosecuting Wildlife Traffickers: Important Cases, Many Tools, Good Results*, 2 Vt. J. ENVTL. L. 1–12 (2000–2001); Melanie Wellsmith, *Wildlife Crime: The Problems of Enforcement*, 17 EUR. J. CRIM. POL. RES. 125–148 (2011); Mara E. Zimmerman, *The Black Market for Wildlife: Combating Transnational Organized Crime in the Illegal Wildlife Trade*, 36 VAND. J. TRANSNAT'L L. 1657–90 (2003).

<sup>14</sup> Jacqueline Schneider, *Reducing the Illicit Trade in Endangered Wildlife: The Market Reduction Approach*, 24 J. CONTEMP. CRIM. JUSTICE 274–95 (2008); Adam Graycar & Marcus Felson, *Situational Prevention of Organised Timber Theft and Related Corruption*, in SITUATIONAL PREVENTION OF ORGANISED CRIMES 81–92 (Karen Bullock, Ronald V. Clarke, & Nick Tilley eds., 2010); Melanie Wellsmith, *The Applicability of Crime Prevention to Problems of Environmental Harm: A Consideration of Illicit Trade in Endangered Species*, in GLOBAL ENVIRONMENTAL HARM: CRIMINOLOGICAL PERSPECTIVES 132–49 (Rob White ed., 2010); Stephen F. Pires & William D. Moreto, *Preventing Wildlife Crime: Solutions That Can Overcome the 'Tragedy of the Commons'*, 17 EUR. J. CRIM. POL. RES. 101–23 (2011).

<sup>15</sup> Felbab-Brown, *supra* note 12.

Russia, comparing that trade to the illicit market in drugs. And Milliken and Shaw have recently produced a comprehensive report on the trafficking of South African rhino horn to Vietnam that includes a section on the criminal networks plying the trade.<sup>16</sup>

However, network descriptions have yet to explain what makes those networks strong and gives them resilience when external forces such as law enforcement make their operations difficult. The more resilient a network, the harder it is to disrupt. Both the sources of a network's resilience and the necessary policies to deal with those sources will presumably be different for poor villagers poaching wildlife for subsistence than for an organised criminal gang seeking huge profits from international sales.

This article specifically addresses the illegal trade in rhinoceros horn that now poses an existential threat to most rhino species. It begins by describing the current rhino horn trade and the kinds of networks involved in the trade. Moving on to the question of the trade's persistence, the concept of resilience is explored. Possible sources of resilience, both internal and external to the networks involved, are examined. A final section considers the implications for how the trade should or could be dealt with and for future research.

## 2. THE RHINO HORN TRADE

Historically, the transnational trade in rhinoceros horn has two main markets. The first is in carved rhino horn handles for traditional daggers or *jambiya* carried by Yemeni men as a sign of social status. Since the importation of rhino horn was banned in Yemen in 1982, demand for horn has gradually diminished and is now met largely from substitutes, such as water buffalo horn or plastic. Yemen is no longer a significant player in the illegal rhino horn trade,<sup>17</sup> although Vigne and Martin report that there remains a stable demand for rhino horn *jambiyas* among northern tribesmen and some demand among younger, more prosperous men in the capital, Sana'a.<sup>18</sup>

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<sup>16</sup> Greg L. Warchol, *The Transnational Illegal Wildlife Trade*, 17 CRIM. JUSTICE STUDIES 57–73 (2004); Stephen F. Pires, *The Illegal Parrot Trade: A Literature Review*, 13 GLOBAL CRIME 176–190 (2012); Nigel South & Tanya Wyatt, *Comparing Illicit Trades in Wildlife and Drugs: An Exploratory Study*, 32 DEVIAN'T BEHAVIOR 538–61 (2011); Tom Milliken & Jo Shaw, *The South Africa-Viet Nam Rhino Horn Trade Nexus: A Deadly Combination of Institutional Lapses, Corrupt Wildlife Industry Professionals and Asian Crime Syndicates* (A TRAFFIC Report, Johannesburg 2012), [http://www.traffic.org/species-reports/traffic\\_species\\_mammals66.pdf](http://www.traffic.org/species-reports/traffic_species_mammals66.pdf).

<sup>17</sup> TRAFFIC Network Report, *On a Knife's Edge: The Rhinoceros Horn Trade in Yemen* (May 1997), [http://www.traffic.org/species-reports/traffic\\_species\\_mammals30.pdf](http://www.traffic.org/species-reports/traffic_species_mammals30.pdf); Rhishja Cota-Larson, *Yemen No Longer Major Destination for Illegal Rhino Horn* (13 January 2010), [http://savingrhinos.org/rhino\\_horn\\_yemen.html](http://savingrhinos.org/rhino_horn_yemen.html).

<sup>18</sup> Lucy Vigne & Esmond Martin, *Yemen's Attitudes towards Rhino Horn and Jambiyas*, 44 PACHYDERM 45–53 (2008).

The second market for the horn trade lies in Asia. Rabinowitz traces trade in rhino horn in China back as far as 2600 BC.<sup>19</sup> Rhino horn appeared in the ancient Chinese scriptures such as the Divine Peasant's Herbal from the 1st century BC and the Pen Ts'ao Kang Mu (or Bencao Gangmu, 本草纲目) from the 16th century.<sup>20</sup> From ancient times, rhino horn cups were thought capable of indicating if the liquid they held was poisonous.<sup>21</sup> In traditional Chinese medicine (TCM) rhino horn, ground to a powder and taken orally, is regarded as having curative properties ranging from hangover relief to palliation of fever, rheumatism, gout, and stroke.<sup>22</sup> More recently, a rumour that rhino horn can cure cancer has spiked demand for the horn in Vietnam.<sup>23</sup> There is no scientific evidence for any medicinal value for rhino horn, which is composed of keratin, just like human hair and fingernails. Recognising this, most TCM countries in Asia, including China, Japan, Taiwan, and South Korea, but excluding Vietnam, have removed rhino horn from their traditional medicine pharmacopoeias.<sup>24</sup> This has not, however, eliminated demand. Traditional medicine places great emphasis on the spirit of the animal as embodied in its flesh and bones, so an absence of scientific proof for medicinal qualities is not regarded as determinative. Belief in the curative properties of rhino horn remains deep-seated in Chinese-related cultures.

Rhino horn also has symbolic value. A pair of rhino horns constituted one of eight treasures, known as the Eight Precious Things or *pa pao*,<sup>25</sup> represented on mandarin squares worn as badges of rank by military officials during the Ming and Qing dynasties.<sup>26</sup> In this 'Asian century,' rhino horn is still regarded as a status symbol. It is used by elites as a gift to obtain favour and influence and in cultural 'face consumption' practices,<sup>27</sup> that often occur at corporate

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<sup>19</sup> Alan Rabinowitz, *Helping a Species Go Extinct: The Sumatran Rhino in Borneo*, 9 CONSERVATION BIOLOGY 482–488 (1995).

<sup>20</sup> *Id.*

<sup>21</sup> Stephen Lang, Rhinoceros Libation Cups, Penn Museum Blog (29 July 2011), <http://www.penn.museum/blog/museum/rhinoceros-libation-cups/>.

<sup>22</sup> Contrary to many media reports, rhino horn has never been prescribed by TCM practitioners as an aphrodisiac, although recent marketing in Vietnam of horn for this purpose has been documented. See Milliken & Shaw, *supra* note 16, at 15.

<sup>23</sup> This rumour is attributed to a report that a Vietnamese official was cured of his liver cancer by taking it, but neither the official nor the source of the rumour can be located. See TRAFFIC, Lid Lifted on Vietnamese Rhino Horn Trade (24 May 2011), <http://www.traffic.org/home/2011/5/24/lid-lifted-on-vietnamese-rhino-horn-trade.html>.

<sup>24</sup> Milliken & Shaw, *supra* note 16, at 105.

<sup>25</sup> According to Lang, the others are a wish granting pearl, double coins, coral, a sceptre, double lozenges, a stone chime, and an ingot. See Lang, *supra* note 21.

<sup>26</sup> Florence Li-Hwa Lee, Interpretation of Chinese Officials Ranks by the Insignias Found on Mandarin Squares (unpublished Master's Report submitted in partial fulfilment for the M.Sc., Kansas State University, 1969), <http://krex.k-state.edu/dspace/handle/2097/7229>; PATRICIA B. WELCH, CHINESE ART: A GUIDE TO MOTIFS AND VISUAL IMAGERY (2008); Lang, *supra* note 21.

<sup>27</sup> Face consumption involves 'acts of conspicuous consumption in order to enhance, maintain or save face.' See Milliken & Shaw, *supra* note 16, at 135.

events. Mixed with wine, it is promoted on Vietnamese websites as ‘the alcoholic drink of millionaires.’<sup>28</sup>

Today, there are five species of rhinoceros, all of which sport horns. Two are in Africa - the White or Square-lipped rhino (*ceratotherium simum*) and the Black or Hook-lipped rhino, (*diceros bicornis*). One is in the region of India and Nepal—the Indian or Greater One-Horned Rhino (*rhinoceros unicornis*). Two more are in Southeast Asia—the Javan or Lesser One-horned rhino (*rhinoceros sondaicus*) and the Sumatran or Hairy rhino (*dicerorhinus sumatrensis*). About 80 percent of the remaining global rhinoceros population is in South Africa.<sup>29</sup> In the period from 1970 until 1987, 85 percent of the world’s rhinoceros population was killed. In 1977, recognising that the rhino population was moving towards extinction, parties to CITES listed the rhino in Appendix I of the Convention. All species remain there, except the southern White rhino, which was moved to Appendix II (in 1994 for the South African population and 2004 for the Swaziland population).<sup>30</sup> Listing in Appendix I effectively instituted a ban on international trade in rhino products. This prohibition was extended to domestic trade in 1987.

The modern rhinoceros family, the Rhinocerotidae, has existed for roughly 35 million years, since the late Eocene. Three of the five species, the Black, Sumatran, and Javan rhinos, now have ‘critically endangered’ status on the IUCN Red List of Threatened Species.<sup>31</sup> The Indian rhino is regarded as ‘vulnerable,’ so still ‘threatened,’ and the White rhino as ‘near threatened.’<sup>32</sup> While habitat destruction partially drives the decline in numbers of rhinoceros, poaching for horn is the main culprit. In the last five years the numbers of rhinoceros poached in South Africa alone has increased every year, from 13 in 2007 to 83 in 2008, 122 in 2009, 333 in 2010, and 448 in 2011.<sup>33</sup> A total of

<sup>28</sup> Adam Vaughan, Affluent Vietnamese Driving Rhino Horn Poaching in South Africa, Report Warns, THE GUARDIAN, 23 July 2012, <http://www.guardian.co.uk/environment/2012/jul/23/vietnam-rhino-horn-poaching-south-africa>.

<sup>29</sup> John Scanlon, Ivory and Insecurity: The Global Implications of Poaching in Africa, Testimony of the Secretary-General of CITES to the Senate Foreign Relations Committee (Washington, D.C., 22 May 2012), [http://www.foreign.senate.gov/imo/media/doc/Scanlon\\_Testimony.pdf](http://www.foreign.senate.gov/imo/media/doc/Scanlon_Testimony.pdf).

<sup>30</sup> The recovery of White rhino numbers in southern Africa was due in part to the success of the trophy-hunting business and of pioneering wildlife management strategies in South Africa. See Millken & Shaw, *supra* note 16, at 46.

<sup>31</sup> IUCN, Red List of Threatened Species, [http://www.iucn.org/about/work/programmes/species/our\\_work/the\\_iucn\\_red\\_list/](http://www.iucn.org/about/work/programmes/species/our_work/the_iucn_red_list/). Schneider, *supra* note 14, at 284, says that the Red List ‘provides taxonomic and conservation status of species to determine the relative risk of extinction and to highlight those taxa facing higher risks of global extinction.’

<sup>32</sup> For a detailed explanation of these terms, see IUCN, Red List Categories and Criteria (14 February 2012), [http://www.iucn.org/about/work/programmes/species/our\\_work/the\\_iucn\\_red\\_list/resources/iucn\\_red\\_list\\_categories\\_criteria/](http://www.iucn.org/about/work/programmes/species/our_work/the_iucn_red_list/resources/iucn_red_list_categories_criteria/). The International Rhino Foundation defines ‘critically endangered’ to mean that a species has at least a 50 percent chance of becoming extinct within three generations (about 30–60 years). See International Rhino Foundation, 25 Things You Might not Know about Rhinos, <http://www.rhinos.org/25-things-you-didn-t-know-about-rhinos>.

<sup>33</sup> Rhino Survival Trust, Rhino Files: Poaching Statistics, <http://rhinosurvival.org/rhino-files/stats/>.

668 rhinos were poached in South Africa in 2012 was already 618, almost a 50 percent increase on the 2011 total figure.<sup>34</sup> South Africa's estimated 20,700 rhino has a population growth rate of only 6 percent a year.<sup>35</sup> This has given rise to much concern and debate over what can and should be done to prevent the extinction of the species, especially in Africa. Current populations of the different rhino species are estimated by the International Rhino Foundation as 35–44 Javan rhinos, 152–199 Sumatran rhinos, 3,270 Indian rhinos, 4,837 Black rhinos, and 20,143 White rhinos.<sup>36</sup> One forecast of the probable date for the total extinction of wild rhinos in Africa, given current rates of decline, is 2025.<sup>37</sup>

White rhino can be traded internationally only as live animals 'to appropriate and acceptable destinations,' or as hunting trophies. All other specimens of White rhino are deemed to be included in Appendix I and the trade in them is regulated accordingly. Black rhino can be traded internationally as hunting trophies but in strictly limited numbers (five from each of South Africa and Namibia per year). This highly regulated trade is allowed in order to 'provide additional incentives for conservation and habitat protection'<sup>38</sup> in those areas of these range states where the Black rhino population has been recovering because of effective conservation programmes. No trade is allowed in Sumatran, Javan, and Indian rhino products.

This limited trade can be contrasted with the black market for rhinoceros horn. While trade has peaked in different Asian countries (China, Japan, South Korea, and Taiwan) at various times in the past, currently Vietnam is widely regarded as the main black market. There has been a rapid increase in South African trophy-hunting permits granted to Vietnamese nationals and in hunts conducted by Vietnamese citizens, which number more than permits

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<sup>34</sup> South Africa, Department of Environmental Affairs, Minister Molewa updates South Africans on the rhino situation and measures to thwart poaching (10 January 2013), [http://www.environment.gov.za/?q=content/molewa\\_updates\\_southafricans\\_rhinosituation\\_measures](http://www.environment.gov.za/?q=content/molewa_updates_southafricans_rhinosituation_measures). Poaching also occurs in a number of other African countries, including Kenya and Zimbabwe, as well as in parts of Asia where rhinos live. Poaching resulted in the death of the last remaining Javan rhino in Vietnam (*Rhinoceros sondaicus annamiticus*) in October 2011. See WWF Global, Javan Rhinoceros, [http://wwf.panda.org/what\\_we\\_do/ endangered\\_species/rhinoceros/asian\\_rhinos/javan\\_rhinoceros/](http://wwf.panda.org/what_we_do/ endangered_species/rhinoceros/asian_rhinos/javan_rhinoceros/). The Western Black rhino (*diceros bicornis longipes*) was also declared extinct in 2011. See IUCN, *supra* note 31; Scanlon, *supra* note 29.

<sup>35</sup> Sue Blaine, South Africa's Rhino Population Dwindles, BDLIVE, 17 July 2012, [http://www.businesslive.co.za/southafrica/sa\\_markets/2012/07/17/south-africas-rhino-population-dwindles](http://www.businesslive.co.za/southafrica/sa_markets/2012/07/17/south-africas-rhino-population-dwindles). WWF claims that rhino poaching increased 3,000 percent between 2007 and 2011. See WWF, Illegal Wildlife Trade: Overview, <http://www.worldwildlife.org/what/globalmarkets/wildlifetrade/>.

<sup>36</sup> See International Rhino Foundation, <http://www.rhinos.org/>. Scanlon, *supra* note 29, at 8, estimates that there are 25,000 rhinos left in the wild.

<sup>37</sup> African Wildlife Foundation, Rhino Summit Emergency Plan of Action: Toward a Comprehensive Response to the Rhino Poaching Crisis, Version 1.0 (Nairobi, Kenya, 3 April 2012), <http://www.awf.org/documents/RhinoActionPlan2.pdf>.

<sup>38</sup> CITES, Establishment of Export Quotas for Black Rhinoceros Hunting Trophies, Resolution Conf. 13.5 (Rev.CoP14), available <http://www.cites.org/eng/res/13/13-05R14C15.php>.

granted since 2003.<sup>39</sup> Anecdotal evidence suggests that horn fetches as much as US\$75,000 per kg in Vietnam,<sup>40</sup> more than the price of gold. A single rhino horn may weigh up to 6 or 7 kilograms, so the sale of even one is clearly very lucrative. The view that Vietnam constitutes the principal market for horn is rejected, however, by Vietnamese government officials, who claim that it is merely a transit country for horn, having too few links with South Africa and being too poor to support such a market.<sup>41</sup> At the same time, Vietnam has expressed willingness to cooperate with South Africa and relevant non-government organisations in efforts to stem the trade.<sup>42</sup>

### 3. NETWORKS INVOLVED IN THE TRADE

For details of the networks involved in the rhino horn trade in South Africa, expert reports published by TRAFFIC can be consulted.<sup>43</sup> The following categorisation of networks is more general but useful as a basis for the discussion of resilience. The categorisation is also functionalist, that is, it is based on what the networks do rather than their motivations or impacts.

#### 3.1 Harvesting Networks

Harvesting networks include *poaching networks* of varying degrees of sophistication. Groups of poor villagers from Mozambique, for example, are known to slip through holes in the border fence to poach rhino on foot in South Africa's Kruger National Park. However, organised crime syndicates are also suspected of involvement in poaching, taking horn themselves or providing incentives for villagers to do so.<sup>44</sup> These syndicates have increasingly become the focus of state concern. There is evidence of the use of advanced technologies to kill or disable the animals, including helicopters, night vision goggles, infrared sensors, tranquilising drugs, high-powered weapons and silencers,<sup>45</sup> which are well beyond the financial or technical reach of African villagers. Smuggling methods, too, display high degrees of organisation.<sup>46</sup> It is likely

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<sup>39</sup> Milliken & Shaw, *supra* note 16, at 52ff.

<sup>40</sup> Damien Mander, Damned if You Do and Damned if You Don't—Legalising the Rhino Horn Trade (10 June 2012), <http://www.iapf.org/images/documents/vietnam.pdf>.

<sup>41</sup> Asia News Network, Vietnam Denies Being Main Rhino Horn Market, JAKARTA POST, 27 August 2012, <http://www.thejakartapost.com/news/2012/08/27/vietnam-denies-being-main-rhino-horn-market.html>.

<sup>42</sup> TRAFFIC/WWF, Viet Nam Acknowledges Severity of Rhino Trade (20 September 2012), <http://www.traffic.org/home/2012/9/20/viet-nam-acknowledges-severity-of-rhino-trade.html>.

<sup>43</sup> Milliken & Shaw, *supra* note 16.

<sup>44</sup> Scanlon, *supra* note 29.

<sup>45</sup> Humane Society International, Rhino Horn Trade (15 September 2011), [http://www.hsi.org/issues/rhinoceros\\_poaching/facts/rhino\\_horn\\_trade.html](http://www.hsi.org/issues/rhinoceros_poaching/facts/rhino_horn_trade.html).

<sup>46</sup> For example, in November 2011 customs officers in Hong Kong opened a shipping container that came from Cape Town and was declared as scrap plastic. They found 33 rhino horns, 758 ivory chopsticks,



that the technique of using shell companies to obscure the money trail and hide from view the high level perpetrators of ivory and caviar trafficking are also being employed for rhino horn trafficking.<sup>47</sup>

Harvesting networks also include syndicates that misuse or corrupt the legal avenues available for obtaining horn, such as the trophy hunting scheme in place in various African countries. Under the South African scheme, a person may only hunt and export one White rhino for trophy purposes per year.<sup>48</sup> A recent example of the abuse of that scheme by a *pseudo-hunting network* involved a Thai national, Chumlong Lemtongthai, who hired prostitutes and strippers to pose as hunters in order to obtain multiple hunting permits. The women were reportedly given a holiday, while a professional hunter under the supervision of a South African game farmer conducted the killing. The women then posed with guns for photographs beside the dead rhinos. The resulting trophies were mounted cheaply and exported to the Thai homes of the women involved.<sup>49</sup> Arraigned in South Africa, Lemtongthai pleaded guilty to 52 charges, including trading in rhino horn, breaching the Customs and Excise Act, and tax fraud. On 4 November 2012 he was sentenced to 40 years imprisonment, but plans to appeal.<sup>50</sup>

The apparent abuse of the trophy permit system has spurred the South African government to change how permits are granted. Applicants now must provide proof of hunting experience in their country of usual residence, or of African species, or of membership in a registered hunting association, and their passport. South African authorities must also consider whether the countries in which foreign applicants live have sufficient laws against illegal rhino horn trading.<sup>51</sup> The Department of Environmental Affairs has also recommended to all Provincial Conservation Authorities, which are responsible for issuing

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and 127 ivory bracelets. See Shaun Smillie, More Syndicates Focusing on Rhino Poaching, IOL NEWS, 9 March 2012, <http://www.iol.co.za/news/crime-courts/more-syndicates-focusing-on-rhino-poaching-1.1252987>. Writing about the illegal reptile trade, Herbig documents some of 'the ingenious methods used by poachers to transport their illegal bounty', many of which are amenable also to the smuggling of other wildlife products, including rhino horn. See Joe Herbig, *The Illegal Reptile Trade as a Form of Conservation Crime: A South African Criminological Investigation*, in GLOBAL ENVIRONMENTAL HARM: CRIMINOLOGICAL PERSPECTIVES, 110–131, 124 (Rob White ed., 2010). South and Wyatt *supra* note 16, at 549–551, document a range of smuggling methods for wildlife and note overlaps between these methods and those for illicit drugs, including the use of bribery to ensure that goods pass borders without inspection and with minimal difficulty.

<sup>47</sup> Tom Cardamone, The Global Implications of Poaching in Africa, Testimony of the Managing Director of Global Financial Integrity to the Senate Foreign Relations Committee (Washington, D.C., 24 May 2012), [http://www.foreign.senate.gov/imo/media/doc/Tom\\_Cardamone\\_Testimony.pdf](http://www.foreign.senate.gov/imo/media/doc/Tom_Cardamone_Testimony.pdf).

<sup>48</sup> CITES, Illegal Killing of Rhinoceros in South Africa, CoP15 Inf. 32, Annex I, 2.5, Fifteenth Meeting of the Conference of the Parties, Doha, 13–25 March 2010, <http://www.cites.org/common/cop/15/inf/E15i-32.pdf>.

<sup>49</sup> Julian Rademeyer, Rhino Butchers Caught on Film at North West Game Farm, MAIL & GUARDIAN ONLINE, 9 November 2012, <http://mg.co.za/article/2012-11-08-rhino-butchers-caught-on-film>.

<sup>50</sup> Shaun Smillie, Joy as Rhino Smuggler Gets 40 Years, IOL NEWS, 10 November 2012, <http://www.iol.co.za/news/crime-courts/joy-as-rhino-smuggler-gets-40-years-1.1420788>.

hunting permits, that all applications for White rhino hunting permits by hunters whose state of usual residence is Vietnam be refused, until Vietnam has confirmed that all rhino trophies exported since 2010 are still in the possession of the hunters. These requirements have stopped the flow of applications for hunting permits from Vietnam, China, and Thailand.<sup>52</sup>

Another system that has been abused is the legal domestic trade in rhinos for conservation or game reserves. The criminal networks involved here might be termed *pseudo-conservation networks*. The Groenewald gang is a South African group comprised of two veterinarians, two safari operators, a professional hunter, and several others who are currently awaiting trial in South Africa for racketeering. Over a period of more than four years, this gang is alleged to have legally procured rhinos from game farms, wildlife parks, and reserves, purportedly for conservation purposes but actually in order to dehorn them, killing in the process almost all of the rhinos and thereby profiting from the sale of the horns. This is one of the biggest rhino horn cases in South Africa's history, involving 1,872 charges of racketeering.<sup>53</sup>

### 3.2 Theft Networks

Another way to obtain rhino horn is through theft. Thefts have been reported from stockpiles of rhino horn, both governmental and private.<sup>54</sup> In addition, thefts from institutions such as museums are increasing. The spate of thefts from institutions has not been limited to range states. In Europe alone, Europol had recorded, as of March 2012, 57 thefts and 12 attempted thefts of rhino horn since the beginning of 2011 from museums and private collections in 15 countries.<sup>55</sup> Police allege that many of these crimes have been perpetrated by an Irish gang nicknamed the Rathkeale Rovers that is better known for drug trafficking, robbery, distributing counterfeit products, tarmac fraud, and money laundering.<sup>56</sup> Museums and other institutions have reacted by tightening security and replacing horns with fakes or removing them from public display.<sup>57</sup>

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<sup>51</sup> South Africa Rhino Poaching Targeted by Tightened Hunting Rules, HUFF POST GREEN, 16 April 2012, [http://www.huffingtonpost.com/2012/04/16/south-africa-rhino-poaching-rules\\_n\\_1428191.html](http://www.huffingtonpost.com/2012/04/16/south-africa-rhino-poaching-rules_n_1428191.html).

<sup>52</sup> South Africa, Department of Environmental Affairs, Department of Environmental Affairs Clarifies Its Efforts to Thwart Rhino Poaching in the Country, Media Release 3 July 2012, [http://www.environment.gov.za/?q=content/efforts\\_thwart\\_rhino\\_poaching](http://www.environment.gov.za/?q=content/efforts_thwart_rhino_poaching).

<sup>53</sup> South African Police Service, R55 Million Assets Seized from Poachers, Media Statement, 9 May 2012, [http://www.saps.gov.za/\\_dynamicModules/internetSite/newsBuild.asp?myURL=1498](http://www.saps.gov.za/_dynamicModules/internetSite/newsBuild.asp?myURL=1498).

<sup>54</sup> Humane Society International, Rhinoceros Horn Stockpiles—A Serious Threat to Rhinos (12 September 2011), [http://www.hsi.org/assets/pdfs/rhino\\_horn\\_stockpiles\\_report.pdf](http://www.hsi.org/assets/pdfs/rhino_horn_stockpiles_report.pdf); Milliken & Shaw, *supra* note 16, at 65–67.

<sup>55</sup> D. Hewitt, How the High Price of Rhino Horn Fuels European Museum Thefts, THE STAR.COM (Toronto), 1 July 2012, <http://www.thestar.com/news/world/article/1218519-how-the-high-price-of-rhino-horn-fuels-european-museum-thefts>.

<sup>56</sup> Ken Foy, Irish Rhino Smugglers Had Fake €120k, HERALD.IE (Dublin), 10 April 2012, <http://www.herald.ie/news/irish-rhino-smugglers-had-fake-120k-3075366.html>.

### 3.3 Distribution Networks

Harvesting and theft networks are clearly linked to or part of distribution networks. Some rhino horn will be distributed by poachers or their local contacts in domestic markets (*domestic retail networks*). Other horn is destined for foreign markets (*transnational smuggling networks*). Poachers pass it to middlemen who find buyers with international contacts. Those buyers, personally or through others involved in the export market, arrange for the horn to be smuggled out of the country.<sup>58</sup>

Distribution networks also include trading networks in non-source countries. As part of a recent multi-agency operation in the United States, Operation Crash,<sup>59</sup> search warrants executed in five different states resulted in the arrest in February 2012 of eight people, including a rodeo cowboy, an expert in antiques, a Vietnamese nail salon owner, and a Chinese businessman. Those detained were allegedly involved in buying up rhino horn, mainly in the form of trophies, across the United States, illegally moving it interstate and exporting it without authorisation to buyers in China. Thirty-seven rhino horns were recovered along with gold ingots, cash, and other proceeds of crime.<sup>60</sup> Five of the defendants have pleaded guilty to charges relating to rhino horn trafficking, including smuggling, conspiracy, and money laundering, and await sentencing.<sup>61</sup>

There are also suspicions, fuelled by extraordinarily high prices fetched at auctions of antique horn products, such as mounted horns and Chinese libation cups,<sup>62</sup> that some of these products are being sent to Asia for grinding down and use in traditional medicine.<sup>63</sup> For this reason, in March 2012 the European Commission, following the UK's earlier lead, published a guidance note urging stringent restrictions on the re-export of rhino horn products.<sup>64</sup> Since then no re-export certificates for rhino horns have been issued. The EC's Committee on Trade in Wild Fauna and Flora will review the trade suspension at the end of 2012.<sup>65</sup>

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<sup>57</sup> Hewitt, *supra* note 55.

<sup>58</sup> Warchol, *supra* note 16.

<sup>59</sup> Crash is the collective noun for rhinos.

<sup>60</sup> US Rhino Horn Trafficking Draws Motley Profiteers, RADIO NETHERLANDS WORLDWIDE, 10 May 2012, <http://www.rnw.nl/africa/bulletin/us-rhino-horn-trafficking-draws-motley-profiteers>.

<sup>61</sup> U.S., Department of Justice, *Members of Smuggling Ring Plead Guilty in Los Angeles to Crimes Relating to Illegal Trafficking of Endangered Rhinoceros Horn*, JUSTICE NEWS, 14 September 2012, <http://www.justice.gov/opa/pr/2012/September/12-enrd-1120.html>.

<sup>62</sup> Libation cups were used on ceremonial occasions for pouring liquids such as rice wine, tea, or water as an offering to the gods or to honour the dead. Some Chinese libation cups are elaborately carved.

<sup>63</sup> Humane Society International, *supra* note 54.

<sup>64</sup> European Commission, Guidance Document: Export, Re-export and Intra-Union Trade of Rhinoceros Horns (March 2012), [http://ec.europa.eu/environment/cites/pdf/rhino\\_horns.pdf](http://ec.europa.eu/environment/cites/pdf/rhino_horns.pdf).

<sup>65</sup> The agenda for the Committee on Trade in Wild Fauna and Flora's 60th Meeting in Brussels on 24 September 2012 [http://ec.europa.eu/environment/cites/pdf/ctwff/60\\_agenda.com.pdf](http://ec.europa.eu/environment/cites/pdf/ctwff/60_agenda.com.pdf).

#### 4. ORGANISED CRIME OR CRIMES THAT ARE ORGANISED?

Each of the groups that constitute the links in the supply chain for the illegal rhino horn trade may or may not meet the definition of organised crime that is set out in the United Nations Convention against Transnational Organized Crime (UNTOC).<sup>66</sup> The Convention does not apply, for example, to groups that are ‘randomly formed for the immediate commission of an offence’ (Art. 2(c)). A ‘structured group’ therefore needs to have a degree of permanence, although it need not have formally defined roles, continuity of membership or a developed structure (Art. 2(c)). Some rhino horn networks may nevertheless be opportunistic collectivities set up solely for the purpose of committing an offence, which afterwards fade back into the ‘criminal macro network,’<sup>67</sup> that is, the criminal milieu from which they coalesced. These groups commit ‘crimes that are organised,’<sup>68</sup> but would not qualify as organised criminal groups as defined by UNTOC.

However, other groups involved in the trade, including the Groenewald gang and the Rathkeale Rovers mentioned earlier, do appear to be longer-term arrangements. Milliken and Shaw suggest that the current trade in rhino horn from South Africa to Vietnam is largely the work of Asian syndicates involving individuals living and working in South Africa, including diplomatic personnel, who ‘recruit and orchestrate the movements of a highly fluid network of couriers and ‘mules’” to move the horn along the supply chain.<sup>69</sup>

A diversity of actors and organisational arrangements is not unusual in the field of wildlife crime. Like elephant poaching in parts of Africa and sturgeon poaching for the caviar trade in the Caspian Sea, the rhino horn trade appears to involve a mix of organised criminal groups and opportunists, including those who commit crime in order to survive. Pires and Moreto note that ‘[d]epending on the species and region of the world, “organised” can simply mean anything from three individuals who are loosely organised together to a vast criminal enterprise that comprises all stages of the wildlife trade (i.e., vertically integrated organisations).’<sup>70</sup>

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<sup>66</sup> 2225 U.N.T.S. 209. UNTOC obliges signatories to criminalize serious transnational crime committed by an organised criminal group (Article 3 (1)), defining serious crime broadly and an ‘organized criminal group’ as ‘a structured group of three or more persons, existing for a period of time, and acting in concert with the aim of committing one or more serious crimes or offences established in accordance with the convention, in order to obtain, directly or indirectly, a financial or other material benefit’ (Art. 2(a)).

<sup>67</sup> Toine Spapens, *Macro Networks, Collectives, and Business Processes: An Integrated Approach to Organized Crime*, 18 EUR. J. CRIME CR. L. CR. J. 185–215 (2010).

<sup>68</sup> James Finckenauer, *Problems of Definition: What Is Organized Crime?* 8 TRENDS IN ORG. CRIME 63–83 (2005).

<sup>69</sup> Milliken & Shaw, *supra* note 16, at 82.

<sup>70</sup> Pires & Moreto, *supra* note 14, at 104.

Understanding the constitution and organisation of different markets and their networks is important for building an understanding of how particular wildlife trades can be controlled and disrupted at each stage in the supply chain. So also is an understanding of how these networks withstand and respond to law enforcement attacks.

## 5. THE CONCEPT OF RESILIENCE

In ecology and disaster management, the resilience of species, of habitats, and of socio-ecological systems is regarded as a good thing. However, in considering criminal networks the concept of resilience takes on a more ominous meaning. Both institutionalised criminal groups, such as the mafia, yakuza, and triads, and some of the more fluid criminal networks that are becoming prevalent in the area of transnational environmental crime demonstrate resilience in the face of both opposition from authorities and changes in the economic and social conditions in which they operate. There is evidence, for example, of persistent offenders operating the trade in big cat products from India through Nepal into China, of long-standing mafia involvement in transnational hazardous waste disposal in countries such as Somalia, Lebanon, and Romania, and of drug gangs moving into the illegal timber trade in Central America.<sup>71</sup> This tends to suggest that the persistence of transnational environmental crime markets is assured, at least for the foreseeable future.

But while resilience in an engineering sense relates to the stability of systems, their ability to ‘jump back’ (the meaning of the Latin *resilire*) when subjected to disturbance, the meaning of *ecological resilience* is broader, recognising that systems can exist in multiple steady states. A system subjected to sufficient disturbance can move from one state to another.<sup>72</sup> This concept has been applied in many different fields, including organisational studies. Here, resilience involves two capacities: the ability to absorb and thereby withstand disruption,<sup>73</sup> and the capacity to adapt, when necessary, to changes arising from that disruption.<sup>74</sup>

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<sup>71</sup> Environmental Investigation Agency, *Enforcement not Extinction: Zero Tolerance on Tiger Trade* (EIA Report, Washington, D.C., 2010), <http://www.eia-international.org/enforcement-not-extinction>; Monica Massari, & Paola Monzini, *Dirty Businesses in Italy: A Case-study of Illegal Trafficking in Hazardous Waste*, 6 *GLOBAL CRIME* 285–304 (2004); Grace Wyler, *Now Mexican Drug Cartels Are Shooting Villagers for Timber*, *BUS. INSIDER*, 6 July 2011, <http://www.businessinsider.com/now-mexican-drug-cartels-are-illegally-logging-ancient-forests-2011-7>; William Allen, *The Fight to Save Guatemala’s Maya Nature Reserve from Drug Gangs*, *THE GUARDIAN*, 8 October 2012, <http://www.guardian.co.uk/environment/2012/oct/08/guatemala-maya-nature-reserve-drug-gangs?CMP=EMCNEWEMML1355>.

<sup>72</sup> For a more detailed explanation, see Julie Ayling, *Criminal Organizations and Resilience*, 37 *INT’L. J. L., CRIME & JUSTICE* 182–196 (2009).

<sup>73</sup> This is defined by Bouchard, when discussing illegal markets, as ‘elasticity.’ See Martin Bouchard, *On the Resilience of Illegal Drug Markets*, 8 *GLOBAL CRIME* 325–344, 330 (2007).

<sup>74</sup> *Id.*; Ayling, *supra* note 72.

In the field of business, both legal and illegal, the ability to absorb disturbances and adapt to change is essential to survival. Adaptation can involve anything from minor adjustments up to robust transformation of business structures, modes of operation, and activities. In the case of illegal business, for example, a law enforcement intervention that results in a participant's arrest or the seizure of an illegal shipment may result in a minor adjustment such as the replacement of the arrestee or a more major adaptation such as the adoption of a new smuggling route or technology. Kenney, for example, reports that in 1981 the US law enforcement interception of cocaine being smuggled by air between Colombia and Florida led to the relevant smuggling group developing a system of air drops of well-wrapped, waterproof, and buoyant cocaine bales into the Gulf of Mexico for eventual collection and transportation by boat.<sup>75</sup>

The dynamism of illicit business thus makes the job of regulators and law enforcement officials more difficult, because it requires of them a degree of co-evolution.<sup>76</sup> They need both to keep abreast of adaptations made by illegal businesses and be adaptive themselves in order to continue to deal effectively with those businesses.

Resilience does not necessarily require, then, a fixed coterie of participants. The criminal networks that constitute an illicit market, whether for drugs, exotic animals, or other illegal products, often endure despite personnel changes due to arrests, imprisonment, desistance, death, and new recruits. Replenishment of participants can be easy or difficult, depending on the nature of the market. Where a market is highly rewarding and there are low barriers to market entry, replenishment either through recruitment into existing networks or the creation of new networks is unlikely to be problematic.<sup>77</sup> The market for illegal wildlife products is one such high-value market, as noted earlier. Due to years of neglect by states and international organisations, most of which have given it a low priority as reflected in lower penalties and less rigorous enforcement than other forms of organised crimes, it is also a relatively low risk enterprise. Offences are not too difficult to carry out, particularly if combined with other kinds of illegal goods trade,<sup>78</sup> and the illegal trade is hence highly attractive.

Criminal networks do experience a number of challenges, however, some of them specifically due to the illegality of their business. One of the main ones, of course, comes from law enforcement. The ability of any system to adapt to the environmental jolts caused by a sustained or sudden onslaught

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<sup>75</sup> MICHAEL KENNEY, FROM PABLO TO OSAMA; TRAFFICKING AND TERRORIST NETWORKS, GOVERNMENT BUREAUCRACIES AND COMPETITIVE ADAPTATION (2007).

<sup>76</sup> Kenney terms this 'competitive adaptation,' *id.*, at 104.

<sup>77</sup> Bouchard, *supra* note 73.

<sup>78</sup> Zimmerman, *supra* note 13.

from external sources, such as the state, depends on its resilience. As the sources of its resilience increase, so does the system's ability to adapt.<sup>79</sup> The converse is also true. When considering how to deal with criminal networks, then, identifying and reducing these sources of resilience should be a priority for states.<sup>80</sup>

The sources of resilience of illicit networks are numerous. Research suggests there are two main categories: the characteristics of the networks and the environments in which they operate.<sup>81</sup> These give the networks social, political, and economic assets essential for longevity.

The literature in criminology mostly focuses on a network's structure as its primary source of resilience. Structure includes its size and architecture or nodal configuration (whether, for example, it is flat or hierarchical), degrees of trust between participants, role and skill distribution among network nodes, and the nature of leadership. Horizontal structures, unlike hierarchical ones, are thought to bestow advantages in terms of information transmission and secrecy, creativity, and organisational learning.<sup>82</sup> In relation to size, Bouchard notes that a market constituted by small firms is more likely to persist because smallness reduces costs and means that firms can often avoid the inertia that larger organisations may suffer.<sup>83</sup>

Also of significance to the resilience of criminal trading networks is the environment in which they operate. Illicit markets flourish globally, and many are transnational, but certain environments make survival easier. 'Thick' crime habitats—environments that host multiple opportunities for crime to be both planned and conducted and contain few 'discouragers of crime'<sup>84</sup>—are conducive to resilience because they facilitate exchange of criminal knowledge and skills and the building of strategic alliances, providing a powerful tool for adaptation.<sup>85</sup> Thick crime habitats are plentiful in, although not necessarily limited to, large urban conglomerates, particularly in weak or failing states.

Community support for criminal activity may also be significant in the persistence of an illicit business. Wildlife poaching, for example, can be at least tacitly supported by poor communities because the financial benefits to the community outweigh those available from legitimate employment or state welfare services.

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<sup>79</sup> Donald R. Nelson, W. Neil Adger, & Katrina Brown, *Adaptation to Environmental Change: Contributions of a Resilience Framework*, 32 ANN. REV. ENVIRON. RESOUR. 395–419 (2007).

<sup>80</sup> Ayling, *supra* note 72.

<sup>81</sup> Williams, *supra* note 11; Ayling, *supra* note 72; Bouchard, *supra* note 73.

<sup>82</sup> Williams, *supra* note 11; Ayling, *supra* note 72; KENNEY, *supra* note 75.

<sup>83</sup> Bouchard, *supra* note 73.

<sup>84</sup> Marcus Felson, *Those Who Discourage Crime*, in CRIME AND PLACE 53–66 (John E. Eck & David Weisburd eds., 1995); MARCUS FELSON, CRIME AND NATURE (2006).

<sup>85</sup> Phil Williams, *Transnational Criminal Organizations: Strategic Alliances*, 18 WASHINGTON QUARTERLY 57–72 (1995); Ayling, *supra* note 72.

Symbiotic relationships between licit and illicit spheres also provide a source of resilience. As White has noted, ‘Part of the success of business done at the licit/illicit interface is that it can embody several different types of organisational relationship and entrepreneurial activity.’<sup>86</sup> Legitimate actors may be willing, unwilling or unwitting facilitators of crime.<sup>87</sup> While the corruption of legitimate business and public office by criminal networks is a well-studied phenomenon, interdependence between underworld and upperworld is less well understood. Legitimate actors are not always orchestrated by criminals, with many such actors playing a positive role in structuring criminal networks through provision of services and facilitation of operations.<sup>88</sup> Some illegal trade could not be conducted at all without corrupting public officials who in exchange for financial or other benefits provide official documents or otherwise bend the rules.

## 6. THE RESILIENCE OF RHINO HORN NETWORKS AND THE PERSISTENCE OF MARKETS

### 6.1 Identifying Network Challenges

Resilience is a quality that is only tested under challenge from external sources.<sup>89</sup> While neglect by states of transnational environmental crime has historically been the norm,<sup>90</sup> there is now a strong movement towards a more proactive anti-poaching stance by rhino range states and others in the global community, based on the perceived urgency of the situation. In southern Africa particularly, the government, non-governmental organisations, private individuals (particularly business people), and community groups have been developing a plethora of strategies aimed at reducing poaching and catching offenders. These include:

- increased penalties and strengthened enforcement strategies—more rangers on the ground, and investments in training, communications, and detection technologies and weaponry, military patrols, and the use of dogs to track poachers;<sup>91</sup>

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<sup>86</sup> ROB WHITE, *CRIMES AGAINST NATURE: ENVIRONMENTAL CRIMINOLOGY AND ECOLOGICAL JUSTICE* (2008), at 173.

<sup>87</sup> Nikos Passas, *Cross-Border Crime and the Interface between Legal and Illegal Actors*, in *UPPERWORLD AND UNDERWORLD IN CROSS-BORDER CRIME* 61–84 (Petrus C. van Duyne, Klaus von Lampe, & Nikos Passas eds., 2002).

<sup>88</sup> Carlo Morselli & Cynthia Giguère, *Legitimate Strengths in Criminal Networks*, 45 *CRIME, LAW AND SOCIAL CHANGE*, 185–200 (2006).

<sup>89</sup> Bouchard, *supra* note 73.

<sup>90</sup> Glen Wright, *Conceptualising and Combating Transnational Environmental Crime*, 14 *TRENDS IN ORGANIZED CRIME* 332–346 (2011).

<sup>91</sup> Sapa, *Dogs to Help Curb Rhino Poaching*, NEWS24, 14 July 2012, <http://www.news24.com/SouthAfrica/News/Dogs-to-help-curb-rhino-poaching-20120714>.



- specific enforcement operations, known as National Enforcement Blitzes, conducted by regulatory agencies, examining compliance with the regulatory framework relating to the hunting of wildlife and post-hunt treatment of trophies, an example being the August 2012 *Operation Skhumba* targeting regulatory compliance by tanneries and taxidermists;<sup>92</sup>
- science-based interventions—such as dehorning animals;<sup>93</sup> dyeing and poisoning horns;<sup>94</sup> technologies to monitor rhinos, such as tracking devices inserted in horns; microchipping of rhinos; technologies to spot poachers, such as thermal imaging, radar and ultra-light aerial patrols,<sup>95</sup> and forensic tracking of rhinos and horns through DNA ‘barcoding’, both for use in prosecutions and to identify hot spots for poaching;<sup>96</sup>
- registration of private horn stockpiles;<sup>97</sup>
- investment in community-based eco-tourism projects or conservancies; and
- entry into bilateral agreements, usually memorandums of understanding, to cooperatively curb the illegal trade.<sup>98</sup>

A total of 267 arrests related to the illegal rhino horn trade were made in South Africa for 2012. This compares to total arrest figures of 165 for 2010 and 232 for 2011.<sup>99</sup> Although arrest data represent only the ‘tip of the iceberg’ of those involved in the trade, these statistics do signify some of the pressures under which illegal networks now operate. There is no shortage of challenges for them.

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<sup>92</sup> South Africa: Operation Skhumba Focus on Tannery and Taxidermy Industries, ALLAFRICA, 23 August 2012, <http://allafrica.com/stories/201208240726.html>.

<sup>93</sup> Leigh-Anne Hunter, Cut and Conserve, THE CITIZEN ONLINE, 4 July 2012, <http://www.citizen.co.za/citizen/content/en/citizen/lifestyle-features?oid=290608&sn=Detail&pid=146826&Cut-and-conserve>.

<sup>94</sup> Chemical Makes Rhino Horns Toxic, SYDNEY MORNING HERALD, 8 September 2011, <http://www.smh.com.au/environment/conservation/chemical-makes-rhino-horns-toxic-20110908-1k06g.html>.

<sup>95</sup> Hunter, *supra* note 93; Lindsey Tugman, Saving Africa’s Rhinos with Technology, TODAY’S THV, 6 February 2012, <http://www.todaysthv.com/news/article/194490/288/Saving-Africas-rhinos-with-technology>; South African National Parks, KNP Rangers Will Fly to Stop the Slaughter, Media Release, 5 June 2012, <http://www.sanparks.org/about/news/default.php?id=1909>.

<sup>96</sup> Tessa Reed, Rhino DNA Project Sees Arrests, ITWEB, 20 April 2012, [http://www.itweb.co.za/index.php?option=com\\_content&view=article&id=53739](http://www.itweb.co.za/index.php?option=com_content&view=article&id=53739).

<sup>97</sup> Milliken & Shaw, *supra* note 16; Masoka Dube, Minister Cracks Whip on Horn Stockpiles, NEWS24, 5 April 2012, <http://www.news24.com/SouthAfrica/News/Minister-cracks-whip-on-horn-stockpiles-20120405>.

<sup>98</sup> Siyabonga Mkhwanazi, Molewa Eyes China in Anti-Poaching Fight, THE NEW AGE 2 (South Africa), 10 August 2012, [http://www.thenewage.co.za/58677-1007-53-Molewa\\_eyes\\_China\\_in\\_antipoaching\\_fight](http://www.thenewage.co.za/58677-1007-53-Molewa_eyes_China_in_antipoaching_fight); Sue Blaine, Agreement with Vietnam ‘Marks Turning Point’ for Rhino Conservation, BDLIVE, 10 December 2012, <http://www.bdlive.co.za/national/science/2012/12/10/agreement-with-vietnam-marks-turning-point-for-rhino-conservation>.

<sup>99</sup> South Africa, Department of Environmental Affairs, *supra* note 34.

## 6.2 Sources of Resilience

But if rhino horn trading networks must show a certain degree of resilience in order to survive, where might that resilience come from and what kinds of assets are involved?

Internal sources of resilience stem from network structure. In the past, the illegal wildlife networks operating in South Africa and Namibia had ‘no one distinct profile’ but both poachers and traffickers of rhino horn and ivory tended to be predominantly individuals or informal groups rather than organised criminal gangs.<sup>100</sup> Poachers were relatively unsophisticated, the middlemen who bought from them were numerous, and they in turn found it fairly simple to find buyers with international contacts and secretly transfer goods to them. This assessment, which is less than ten years old, reflected a context in which ‘[e]lephant and rhinoceros poachers in South Africa and Namibia [were] few in number and [did not] constitute much of a threat.’<sup>101</sup>

Today, by contrast, while a few of the harvesting networks still consist of poor and relatively unsophisticated people from rural areas, many others now have markedly different characteristics.

The features of these more sophisticated, present day networks include:

- small-sized syndicates;
- participants with distinct types of skills and expertise, such as hunting, veterinary work, book-keeping, and logistics;
- highly specialised roles within the network;
- access to expensive equipment;
- a willingness to cooperate across nationality/ethnicity lines; and
- well-developed connections beyond the network itself that facilitate smuggling.

These features are evident to different degrees in different harvesting and distribution networks, such as the Groenewald gang, the Chumlong Lemtongthai group, and the syndicate uncovered by Operation Crash. Overall, then, the trade seems to be becoming more organised, and perhaps more organised crime is now involved. Certainly, the latter view is increasingly favoured at the international level. Interpol’s Environmental Crime Programme, for example, is predicated on the proposition that ‘[a] significant proportion of both wildlife and pollution crime is carried out by organized criminal networks’ and ‘environmental crime often occurs hand in hand with other offences such as passport fraud, corruption, money laundering and murder.’<sup>102</sup> Milliken and

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<sup>100</sup> Warchol, *supra* note 16, at 65.

<sup>101</sup> *Id.*

<sup>102</sup> INTERPOL, Environmental Crime, <http://www.interpol.int/Crime-areas/Environmental-crime/Environmental-crime>.

Shaw report that an organised crime dimension to the rhino horn syndicates trafficking between South Africa and Vietnam is undoubtedly present, not only in terms of internal organisational structures but also in relation to their involvement in other illegal wildlife trades (live animals, abalone, and ivory) and other types of organised crime (such as drug smuggling and vehicle theft).<sup>103</sup>

The significance of the apparent smallness of the various networks involved is hard to assess. In some instances, it may contribute to the ability of networks to avoid detection, such as reducing the need for intra-network transactions. Small networks also have more flexibility than larger, more cumbersome networks to adapt their modes of operation, if necessary, by opening up new avenues of trade when others are closed down. On the other hand, smallness and high levels of participant specialisation can be liabilities if they result in little built-in redundancy in the network, such that if one participant ceases to be operative because of ill health, desistance, or arrest, the operation is stymied until such time as a new player with similar skills can be located.<sup>104</sup> Small size in that case would suggest vulnerability rather than resilience.

From the data in the small numbers of examples to which researchers can gain ready access, it is hard to measure with any precision the degree to which rhino horn trading networks are resilient and how flexible and adaptable they will prove when challenged. It would help if law enforcement agencies consistently mapped the structures and modes of operation of detected syndicates. At least two important gaps in the knowledge base are evident. The first concerns how network participants locate each other and establish trusting relationships. This is a particularly interesting question because of the apparent prevalence in some of these networks of first-time offenders, many of whom are professionals in legitimate fields. The second set of missing data concerns how these networks communicate and trade across national borders. Do they only have 'loose couplings' and 'weak ties' with overseas buyers, or are those ties such that the syndicates might be considered as integral parts of larger, perhaps organised, crime networks? Clearer mappings of the networks involved would show the shape those networks take.<sup>105</sup> It would also reveal ways in which incipient trust relationships might be disrupted, by targeting, for example, key positions, such as the brokers who link otherwise disconnected clusters within a network, or different networks, and on whom these clusters/networks rely for access to resources beyond their immediate reach.<sup>106</sup>

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<sup>103</sup> Milliken & Shaw, *supra* note 16.

<sup>104</sup> Williams, *supra* note 11; Ayling, *supra* note 72.

<sup>105</sup> For a discussion of different types of criminal networks, such as chain, hub and spoke, centre/periphery, and web, see Williams, *supra* note 11.

<sup>106</sup> CARLO MORSELLI, *INSIDE CRIMINAL NETWORKS* (2009).

Any strategy for removing network members may not, however, break up a network if its environment provides it with sources of resilience. Relatively unsophisticated rural poaching networks, for example, gain resilience when they are supported by the communities from whence they come. This is nothing new. There was solid local and popular support for poachers in 18th century England.<sup>107</sup> Effectively tackling community support usually requires that local people are provided with or can themselves acquire other, equivalent sources of income, sufficient to dissuade them from participating in criminal acts. This is where government-supported schemes for community conservancies can assist.<sup>108</sup> As the film *Milking the Rhino* suggests, in order to be protected by a community, wildlife may have to show payback, by becoming a tourist attraction, for example.<sup>109</sup>

The more sophisticated poaching, distribution, and trading networks pose different challenges. Environmental factors can provide these networks with resilience, by making their operating environments ‘safe’ and, thus, repaying continued investment in the criminal exploitation of wildlife, even in the face of setbacks, such as the occasional prosecution. The factors at work include:

- a practical disconnect between rules to restrict illegal trade and their implementation, as when there is lax law enforcement or weak penalties;
- the existence of social norms that conflict with rules, as with the cultural uses of wildlife in traditional medicines in China and Vietnam; and
- the existence of complex or ambiguous rules, such as those in the US banning the sale of horn across state lines and restricting the import and export of horn.

Confronting such problems might appear to be simple, requiring only a greater investment in law enforcement, a tightening of rules or the launch of campaigns to help remind people of their legal obligations and educate them

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<sup>107</sup> Douglas Hay, *Poaching and the Game Laws on Cannock Chase*, 189–253, in DOUGLAS HAY, PETER LINEBAUGH, JOHN G. RULE, E. P. THOMPSON, & CAL WINSLOW, *ALBION’S FATAL TREE: CRIME AND SOCIETY IN EIGHTEENTH CENTURY ENGLAND* (1975).

<sup>108</sup> A conservancy is defined by the National Association of Conservancies (South Africa) as ‘a registered voluntary association between land users/owners who cooperatively wish to manage their natural resources in an environmentally sustainable manner without necessarily changing the land-use of their properties,’ <http://www.nacsa.org.za/>. Conservancies are often touted as examples *par excellence* of free market environmentalism as they provide a means to avoid the ‘tragedy of the commons.’ See TERRY L. ANDERSON & DONALD R. LEAL, *FREE MARKET ENVIRONMENTALISM*, ch.11 (rev. ed., 2001).

<sup>109</sup> See *Milking the Rhino* (Kartemquin Films 2009) for an illustration of how conservancies and similar community-based strategies are being used in Namibia (amongst the Himba in the Marienfluss Valley) and Kenya (amongst the Maasai in the Il Ngwesi area) to further the conservation of wildlife and defend it from poaching.

about the consequences of their consumption of wildlife products. Efforts can also be made to increase the risks and difficulties of trading illegally and to decrease its rewards, as suggested by situational crime prevention theory.<sup>110</sup> Such solutions are not without effectiveness. When it comes to dealing with sophisticated organised criminal networks, however, their capacity to evolve and adapt has to be taken into account.<sup>111</sup> Here, one-time and narrowly targeted solutions can be insufficient because networks can displace activities to alternative and unregulated modes of operating, to other commodities for which protective measures have not yet been put in place, such as other wildlife products, or to other places more conducive to trade. An assumption cannot be made that arresting several network participants will necessarily put an end to the network's criminal activities, or that more stringent rules or better enforcement will necessarily stop the trade.

Corruption is also a source of resilience for criminal networks. Unfortunately, many rhino range countries score low on Transparency International's Corruption Perceptions Index.<sup>112</sup> Several of the South African networks so far identified have involved people in positions of power vis-à-vis rhinos, such as game farmers, vets, and National Park rangers. But the effective distribution of horn to overseas markets undoubtedly requires participation by other currently unidentified private and public sector individuals and businesses. These are people who supply criminal networks with false documentation, laundering facilities for wildlife or products, and transport and holding facilities. Resilience-enhancing intersections between the illicit and licit spheres might be uncovered by investigating financial institutions using follow-the-money strategies, and investigating transit points, such as ports and airports, transport providers, export agents, and storage facilities. More could be done also to identify corrupt and delinquent professionals, such as lawyers, accountants, estate agents, and chemists, who can also be sources of resilience.

## **7. A TIME FOR 'AD HOCERY', TARGETED RESEARCH, OR GRAND EXPERIMENTS?**

Thanks to the work of a multitude of actors, the effects of poaching on global populations of rhino and other fauna are well established, enabling estimation of the value of the various wildlife markets. Seizures of wildlife

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<sup>110</sup> Ronald V. Clarke, *Situational Crime Prevention*, in *BUILDING A SAFER SOCIETY: STRATEGIC APPROACHES TO CRIME PREVENTION* 91–150 (Michael Tonry & David P. Farrington eds., 1995).

<sup>111</sup> KENNEY, *supra* note 75; Julie Ayling, *Gang Change and Evolutionary Theory*, 56 *CRIME, LAW AND SOCIAL CHANGE* 1–26 (2011).

<sup>112</sup> Transparency International, *Corruption Perceptions Index 2011*, <http://cpi.transparency.org/cpi2011/results/> (accessed 10 December 2012). This index ranks countries on perceived levels of public sector corruption: the lower the score, the higher the perception of corruption.

products also give a general picture of global trade routes and smuggling methods,<sup>113</sup> and a restricted glimpse of smuggling volumes, given that seizures constitute an unknown proportion of all products smuggled. However, arrests and prosecutions of perpetrators, such as they are, provide only a patchy and inaccurate picture of the harvesting, theft and distribution networks involved. Furthermore, their sources of resilience, which enable them to bounce back from challenges made by the state and others have yet to be systematically studied. In this context, the current large and varied toolkit of strategies to fight wildlife crime is essentially being developed and deployed ad hoc.

A resilience perspective highlights the fact that there are many sites of possible intervention located both in the networks themselves and in their operating environments. Knowing more about the sources of resilience would enable more targeted strategic and operational approaches to counteracting criminal wildlife trading networks. With more resources for research and analysis, law enforcement and other government and international agencies could do a lot to fill in the gaps of what we know about resilience. Much more, in other words, could be done.

In the case of some species, however, such as wild rhinos, there may not be time to wait until more money and greater political plug the knowledge gaps that might stave off extinction. Alternatives are, therefore, being explored. In mid-July 2012, for example, well-known South African conservationists from Ezemvelo KZN (KwaZulu Natal) Wildlife presented a formal proposal to the International Wildlife Management Congress to establish a government-owned central agency that would sell ‘clean’ rhino horn—that is, public and private stockpiles and safely and legally harvested horns from live rhinos—to Asian pharmaceutical companies in a regulated manner three to four times a year.<sup>114</sup> Horns would be certified by chemical analysis and transponder chips. Buyers would also be certified. The objective would be to flood the market with legal rhino horn, undercutting the criminal networks and, thus, reducing demand for illegally obtained product. Some of the money derived from sales would be used for rhino conservation efforts, and the plan would be reviewed for its success after five years. It is acknowledged by those presenting the proposal that there is no guarantee that poaching will be stopped.

Critics of legalising the trade in this or any other way argue that an increase in horn on the market will simply increase demand, drive up prices, and make it impossible to flood the market. Poachers would still have customers.

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<sup>113</sup> Milliken & Shaw, *supra* note 16, at 131ff, for example, discuss routes and methods for trafficking of rhino horn from South Africa to Vietnam.

<sup>114</sup> Tony Carnie, Plan to Sell Rhino Horns to China, IOL NEWS, 13 July 2012, <http://www.iol.co.za/news/politics/plan-to-sell-rhino-horns-to-china-1.1340599>.

Legalisation, they say, sends the wrong message: that demand is legitimate.<sup>115</sup> Further, legalisation simply makes way for additional profit-making by business people with a stake in rhinos, through stockpiling and rhino farming,<sup>116</sup> and, since much of the trade now rides on the back of the little legal trade that exists, there would be more opportunities for crime, not less.<sup>117</sup> Critics also point out that there was no long-term reduction in elephant poaching after one-off auctions of ivory stocks were approved under CITES in 1997 and 2008 for Namibia, Botswana, Zimbabwe, and, in 2008 only, for South Africa.<sup>118</sup>

In a situation where the knowledge base is poor and existing strategies seemingly ineffectual, one can certainly argue under a precautionary approach that any action that could reduce poaching and quash the illegal trade ought to be tried. Ideally, supply-side strategies would be complemented by demand reduction, although it seems unlikely that demand rooted in thousands of years of culture and tradition can be completely eliminated, especially given the increasing affluence of China and Vietnam.

It seems, then, that a grand experiment in regulated trade, whether along the lines of Ezemvelo KZN's proposal or some other, may be worth attempting. Such an experiment would need to be under review from the moment it began, and would have to be given a finite period to produce results. There would need to be a commitment to end the experiment if it was not achieving its objectives. Stringent oversight would be essential to keep the price of legal horn below that of the illegal equivalent, to prevent any of the trade becoming an avenue for laundering illegal horn and to ensure that corruption did not corrode processes.

Even if it did not work, a carefully designed and monitored experiment would add to what we know. And, if it did work, it might offer insights into strategies for preserving other species under threat from illegal poaching and trading. Certainly, if nothing more is done, the wild rhino and some other species are at risk of being lost. One further option, of course, is to acquiesce in that loss. And some might go so far as to argue that extinction is a preferable outcome to farming practices that essentially spell the end of the wild species.<sup>119</sup>

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<sup>115</sup> Mark Jones, Rhinos in Crisis—And Why the Market Won't Save Them, HUFFPOST IMPACT (UK), 29 May 2012, [http://www.huffingtonpost.co.uk/mark-jones/rhinos-in-crisis\\_b\\_1549894.html](http://www.huffingtonpost.co.uk/mark-jones/rhinos-in-crisis_b_1549894.html).

<sup>116</sup> Mary Rice, Legalised Trade Is a Cover for Laundering Wildlife, MAIL & GUARDIAN ONLINE (South Africa), 9 March 2012, <http://mg.co.za/article/2012-03-09-legalised-trade-is-a-cover-for-laundering-wildlife/>.

<sup>117</sup> Gerhard Swanepoel, *A Criminological Perspective on Illegal Trade*, 11 REF JOURNAL 20–24 (1997).

<sup>118</sup> Jones, *supra* note 115.

<sup>119</sup> Consider, for example, the argument that 'domestication removes the animal from its evolutionary and ecological context. . . . A consequence of domestication is the loss or gross modification of natural social and reproductive behaviours, and the web of trophic and mutualistic relationships of which the species was an evolved part does not accompany it into the domestic sphere.' See Euan Ritchie

A deliberate decision to acquiesce in extinction, while a possibility, would certainly be a drastic step to take and is probably, therefore, not an option that will be self-consciously embraced any time soon. Meanwhile, implementing ad hoc solutions, conducting further research, and cautiously undertaking grand experiments look like the best ways forward.