

RHINO POACHING: A NEW FORM OF ORGANISED CRIME¹

PROFESSOR MOSES MONTESH

COLLEGE OF LAW

School of Criminal Justice

Department of Police Practice

www.unisa.ac.za/policepractice

E-mail: mmontesh@unisa.ac.za

Tel: +27(0)11 471 2066

Fax: +27(0)11 471 2255

Cell: +27(0)82 332 0607

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ABSTRACT

African rhinos are suffering a new poaching onslaught for their priced horns. Despite intensified anti-poaching activities, the number of rhinos poached per day has continued to increase since 2008. During 2012, about 668 rhinos were poached while a higher number is projected for 2013. This trend of increased poaching will reverse overall positive rhino population growth in the long-term in South Africa. In response to this problem, a rhino emergency summit comprising of rhino range States' representatives, the private sector, government officials and non-governmental organizations was convened in Nairobi during April 2012. Following this summit, members proposed an integrated framework directed at reducing the demand and supply ratio associated with the use of rhino horn. The framework is envisaged to guide short- as well as medium- to long-term responses by range States directed at reducing the incentives for poaching and ensuring the persistence of rhinos. In this paper, the author will begin by outlining the extent of rhino poaching, the background to rhino poaching, the role of organised crime syndicates in rhino poaching, the demand and supply of rhino horns as well as proposing measures to combat rhino poaching.

INTRODUCTION

The recent increase in rhino poaching in South Africa is largely due to heightened demand for rhino horn, which has long been prized as an ingredient in traditional Asian medicine although this has been denied recently by both China and Vietnam. It has been claimed recently that rhino horn possesses cancer-curing properties as well as the ability to cure impotence; despite there being no medical evidence to support the assertion. Each rhino horn weighs around 10kg and currently fetches over US\$ 20,000 per kilo on the Asian market. The current wave of rhino poaching is being committed by sophisticated criminal networks using helicopters, night-vision equipment, veterinary tranquillisers and silencers to kill rhinos at night while attempting to avoid law enforcement patrols. The criminal syndicates operating in South Africa have been described as highly organised and coordinated, using advanced technologies – this is not typical amateur poaching. Since 2000, the number of rhino poaching incidents has been increasing. Although a number of efforts and strategies have been implemented by the South African government, the problem is far from over. Therefore this is an indication that there is a dire need to conduct research on rhino poaching so that new approaches in the prevention of rhino poaching can be developed.

METHODOLOGY

A qualitative approach was followed in this project. Although literature study formed the basis of this study, unstructured interviews were conducted with the representatives of the following institutions:

- ✓ Members of the Mozambican Police
- ✓ Mozambican Game Rangers
- ✓ Representatives from Mozambique Ministry of Home Affairs
- ✓ Community members from (from Maputo, Gaza and Inhambane provinces) in Mozambique
- ✓ Representatives from South African Department of Environmental Affairs
- ✓ Representatives from Commercial Crimes Unit of the National Prosecuting Authority
- ✓ Game Rangers stationed at Kruger National Park
- ✓ Task team members from the South African Police Service stationed at Kruger National Park
- ✓ Task Team members from the South African National Defence Force stationed at Kruger National Park

HISTORICAL BACKGROUND OF POACHING IN SOUTH AFRICA

From 1960 to 1994, South Africa was involved in three wars (Namibia, Angola and Mozambique). According to Van Vuuren (2006:50), the South African Defence Force (SADF), under the leadership of P.W. Botha in the 1970s and later under General Magnus Malan, openly supported Jonas Savimbi's rebel Union for Total Independence of Angola (UNITA) movement in South Western Angola from the mid-1970s until the late 1980s as well as Mozambican National Resistance (RENAMO) rebels in Mozambique. This took the form of direct military intervention (attacks) in Angola on civilians, the Angolan military as well as South West Africa People Organization (SWAPO) and African National Congress (ANC) freedom fighters. The SADF also assisted Jonas Savimbi by supplying him with a generous annual budget, weapons and military support in his battle against the Angolan government (Reeve & Ellis, 1995:5). By the late 1980s news began to trickle out that the SADF (and possibly senior SADF personnel) may have been involved in profiteering while waging war in Angola, Namibia and Mozambique. In 1988 a United States (US) environmentalist, Craig van Note, testified before the US House of Representatives that senior members of the SADF and the government were involved in Africa's biggest ivory smuggling ring, which had slaughtered almost 100,000 elephants to help finance the civil war in Angola and Mozambique. The tusks and rhino horns were being smuggled through South Africa, Burundi and Zaire (the Democratic Republic of Congo) for resale abroad (Rademeyer, 2012:29).

This led to the establishment of the "Roos Inquiry" by the SADF IN 1988. However evidence suggests that this in-house SADF probe conducted was a whitewash. In its findings, the enquiry stated that *"there was no evidence to prove that the defence force was responsible for or involved in the killing of elephants. However, small quantities of ivory captured by UNITA from poachers and others in Angola were transported by the Defence Force on behalf of UNITA over an 18-month period from mid-1978 to the end of 1979".*

However, in 1994, former President Nelson Mandela appointed Justice ME Kumleben to inquire into the alleged smuggling of ivory and rhino horn, particularly of Angolan and Mozambican origin, to and through South Africa by the SADF. The Commission found substantial proof of SADF involvement in the ivory trade through a front company, Frama Inter-Trading, which was later supposedly privatised (Rademeyer, 2012:45). The commission heard how the SADF had provided covert vehicles to transport ivory from the Angolan border to a Veterinary Services quarantine station at Rundu in Namibia. It was stored there until an SADF employee and Portuguese-speaking refugee, Francisco Lopes, collected it for the purpose of selling it on behalf of UNITA. The Commission also heard that officers in the SADF had been involved in illicit of ivory and rhino horn movement at least until 1986.

One person who witnessed the wholesale slaughter of Angolan wildlife, and was prepared to talk out about it, was Colonel Jan Breytenbach. Among other things, he founded the SADF's 32 Battalion and spent a large part of his career in the SADF based in north-eastern Namibia. Breytenbach eventually wrote a book, *Eden's Exiles*, which presents an account of his experience during that time. In an interview with the Sunday Times in 1988, Breytenbach described what he witnessed while based in the Caprivi in the late 1980s. Breytenbach saw the bush, which was teeming with wildlife in the 1970s, turn into a "green lifeless desert" by the 1980s (Van Vuuren, 2006:53). He received reports from informants in south-eastern Angola and Caprivi that animals such as rhino had been shot almost to extinction. Simultaneously he also learnt of reports of soldiers coming across ammunition boxes full of ivory and rhino horn, either in transit to South Africa or waiting for transport at SADF military bases. South West African Nature Conservation set up roadblocks at that time and began coming across cars carrying Kiaat wood and some ivory and rhino horns as well. Rumour also had it that there was an ivory 'pipeline' that members of the SADF were using to channel diamonds (from Angola) and drugs (primarily mandrax) from Zambia (Van Vuuren, 2012:45). When Breytenbach attempted to raise his concerns with a number of senior officers he was effectively blocked.

However, he realised that there was more at play when at least two people investigating the matter died mysteriously. Furthermore, Captain Hennie Brink of the Diamond Branch in the South West African Police met with Breytenbach and confirmed that a number of people were involved in the ivory and rhino horn trade - some potentially higher than the generals. It was then that Breytenbach realised that ivory and rhino horns smuggling was organised at the highest level. According to Rademeyer (2012:204), Brink, who some time thereafter (1989/1990) died in a car accident, maintained that the ivory and rhino hunting operations had been knocked together at a ministerial level and would have been a joint operation between the military and the administration. In order to get tusks registered in South Africa there would have had to be co-operation with the then Northern Transvaal Nature Conservation Department (whose responsibility this was at the time).

Furthermore, there are further allegations that before Brink investigated the matter a Nature Conservation official (Muller or Mulder), who had also been investigating the ivory trade, was killed in a car accident. In his book Breytenbach alleges that a friend of his in Nature Conservation, Manie Grobler, was played an audio tape recording that implicated the military in smuggling ivory and rhino horns. The tape contained incriminating evidence and Grobler told Muller to make a duplicate copy as soon as possible. Muller then placed the tape in his briefcase and left by car to Grootfontein from Rundu where he was to hand the tape over to another official. Before he could do this he was killed when he drove into a large grader that pulled out in front of him (Van vuuren, 2006:47).

When Muller's contact in Grootfontein heard about the accident he rushed to the scene but the briefcase containing the evidence had disappeared. According to official SADF accounts, the money that would have been recouped from the sale of ivory would flow back into funding the UNITA and RENAMO rebels. However, Breytenbach knew that in the year 1986/1987 alone, the SADF's assistance to UNITA through military intelligence totalled R6 Billion and this excluded the supply of almost all UNITA's hardware and fuel. It is therefore unlikely that this was the reason behind the SADF's interest in ivory and rhino smuggling. It is more likely that the potential for self-enrichment that this presented to SADF officers was enormous. General Chris Thirion, former Deputy Chief of Staff Intelligence, agreed at that time and suspected that Savimbi was in fact over-funded at the time. According to Van Vuuren (2006:48) Stefaans Brummer, an investigative journalist, compares the access that the SADF had to diamonds and ivory in UNITA territory to the mining concessions provided to the Zimbabwean government and generals who were involved in supporting Josef Kabilia's government in the DRC (Walker & Walker, 2012:105). General Thirion also pointed out that numerous highly placed generals were allegedly invited to hunting parties in Angola at the state's expense (directly or via UNITA).

The excuse used was that they were Jonas Savimbi's guests. Savimbi had started to develop a personal relationship with many highly placed SA military officials and had ways of thanking them for fighting his battles in Angola (and in South Africa, with the South African securocrats). According to Van Vuuren (2006:50), General Thirion also stated that, when he was employed as Director of Foreign Liaison in Pretoria towards the end of his career in the SADF (1990/1992) he went through the inventory of SADF gifts (usually purchased for visitors to the SADF) and found that a lot of items had not been given away. Soon thereafter he visited the Military Intelligence stores to decide what should be written off. He then stumbled across four to six large elephant tusks but nobody could tell him where they were from and what they were meant for (Walker & Walker, 2012:102). This does not prove anything other than the fact that the ivory was not necessarily all sold off to aid UNITA. Whoever kept the ivory in the Military Intelligence stores may have had more to hide.

THE EXTENT OF RHINO POACHING IN SOUTH AFRICA

Number of rhinos poached so far

South Africa has long prided itself on keeping poaching losses of rhinos to a bare minimum. For three decades, as successive waves of rhino carnage struck other rhino range States across Africa, for the most part, South Africa, together with Namibia and Zimbabwe, remained unaffected (Walker & Walker, 2012:116). Following independence in 1980, the situation changed in Zimbabwe and serious rhino poaching, especially in the Zambezi Valley, progressively threatened the country's rhinos. Zimbabwe's first poaching crisis did not abate until 1994 following national efforts to increase security for rhinos, including their consolidation into a number of Intensive Protection Zones and undertaking large-scale dehorning operations (Gwin, 2012:45). Concurrently, by 1993, a number of key Asian countries and territories that were major rhino horn consumers, most notably China, Taiwan and South Korea, all imposed internal rhino horn trade bans, severely curtailing usage by their traditional medicine industries. In southern Africa, this led to nearly a decade of negligible rhino poaching and considerable rhino population growth. A resurgent rhino horn trade, and one directly linked to the emergence of Viet Nam as a consumer and not any of other previous Asian countries or territories of concern, first surfaced in Zimbabwe and South Africa in the early 2000s (Rademeyer, 2012:46).

Part of the impetus behind the progressive upsurge in rhino losses in Zimbabwe was South African operatives who were active in the country. By 2008, both countries were experiencing a major upsurge in rhino poaching. The subsequent year-on- year reduction in Zimbabwe's rhino losses is most likely due to the fact that most poorly-secured rhino populations had already been lost to poaching and the largest remaining rhino populations are consolidated in Southeast Lowveld conservancies under better protection. As Zimbabwe's poaching losses have declined, the number of illegally-killed rhinos in South Africa has increased (Ellof, 2012:23). From 1990 to 2007, apart from a very short-lived spike of poaching activity in 1994 (the year of South Africa's historic election that ushered in political change), the loss of rhinos has remained at a very low level, averaging some 15 rhinos annually, or slightly more than one rhino each month (Rademeyer, 2012:47).

That enviable and hugely laudable rhino conservation record has come to an abrupt halt and been altered irretrievably. In 2006, rhino poaching losses hit a then record of 36 animals, the highest level in decades, but then dropped back the following year to previous levels of only 13 rhinos. Since then, however, poaching levels have escalated dramatically, increasing every year since. In 2008, 83 rhinos were reportedly poached and, in 2009, the number poached reached 122. As the TRAFFIC/ IUCN document (2012:70) to CITES CoP15 reported at the time:

[Since 2006, 95% of all detected or presumed rhino deaths in Africa from illegal killing have occurred in Zimbabwe and South Africa. These two nations collectively form the epicentre of an unrelenting poaching crisis in southern Africa. In South Africa, the illegal off-take has reached the highest levels in recent history, impacting not only Kruger National Park on the country's border with Mozambique, but also other protected areas in KwaZulu-Natal and a range of private sector game ranches for the first time in Limpopo, Gauteng, North West and Eastern Cape provinces].

While the report to CITES CoP15 was tabled in late 2009 (and hence the data for that year were incomplete, 91 out of the eventual total of 122), since then the situation has worsened. In 2010, poaching escalated dramatically throughout the year, nearly tripling and reaching a previously unimaginable 333 rhinos killed. Noting a crisis that needed urgent attention, the IUCN/SSC AfRSG (2012:61) warned that if this rapid rate of escalation in poaching were to continue, then in just a couple of years rhino numbers in South Africa would begin to decline. In 2011, rhino poaching again climbed to a new annual record of 448 rhinos lost.

Some observers have taken some measure of consolation in the fact that the rate of escalation in poaching was down over the previous year and represented the smallest annual percentage increase in recorded rhino poaching since the upsurge began. Many others, however, remained shocked that South Africa could sustain a loss of one rhino death every 20 hours throughout the entire year. The most recent numbers for 2012 were released by the Department of Environmental Affairs (DAE) (2012:30) just prior to the completion of this paper and showed that 668 rhinos were killed by December 30, 2012 (Milliken & Shaw, 2012:68). If so, this would once again represent an annual increase over 2011, even if the rate of increase is somewhat lower than previous years. That the year-on-year rhino poaching losses have continued to grow in the face of heightened awareness, constant media attention and concerted law enforcement effort is testament to just how pervasive and gripping the rhino crisis in South Africa has become. If poaching continues to increase annually as it has done since 2007, then eventually deaths will exceed births and rhino numbers in South Africa will start to fall. Overall, the total number of rhinos killed per year in South Africa over the past five years has shown a continued escalation, even if there are fluctuations in the daily rate of poaching (Rademeyer, 2012:67).

Methods of rhino poaching (Modus operandi)

In recent years, the techniques used to kill rhinos have changed and these shifts are indicative of the new and decidedly uncharacteristic profiles of those behind the rhino deaths linked to increased involvement of organized crime syndicates. Historically, African wildlife poachers were recruited from local communities living in close proximity to protected areas, some of which were disputed as former communal land areas where subsistence hunting often had occurred within recent memory. Overlapping with this, another typical poacher profile concerns former military personnel, police officials or game scouts, all of whom would have had specialized training to develop tracking or shooting skills. For a variety of reasons, such individuals joined the ranks of those profiting from the illegal killing of wildlife. In South Africa, such individuals are still active, but a new kind of poacher has also become an integral part of the equation, especially in game ranch areas in the provinces, such as Limpopo, KZN and Mpumalanga. (Milliken & Shaw, 2012:68). My interaction with the Mozambican authorities during 2012 also revealed that former REMANO, and FRELIMO and Community Militias are involved in Rhino poaching.

Whilst the killing of rhinos typically involves shooting with guns, usually AK47 assault rifles, an increasing regional trend seems to be the use of skilled marksmen to kill rhinos instantly with heavy-calibre weapons, for example, .375 and .458 rifles. Another worrying, though infrequent, development has been the appearance of cross-bow shooting as a means to kill rhinos. Bow hunting has the advantage of being lethal, yet silent, but involves highly-developed professional skills and equipment rarely available to an archetypal poacher (Rademeyer, 2012:58). More commonly, the advent of darting rhinos with immobilization drugs either from a helicopter or from the ground and removing their horns has occurred in recent years. Again, as with cross-bows, this method of "hunting" is silent with a lower risk of detection than the sound of gunshots. These methods of rhino killing can only be conducted by trained professionals who have access to restricted veterinary medicines and other specialized equipment. The use of scheduled immobilisation drugs in this regard should not be mistakenly viewed as an act of compassion. Animals are typically left tranquillized without administration of a reversal agent and die slowly from their wounds. In rare instances, rhinos have survived for some period of time after these attacks, often suffering horrific facial injuries. In some cases, helicopters (often without identification numbers) have apparently been employed in rhino poaching incidents (TRAFFIC, 2012:23). Game capture professionals normally dart rhinos from the air when undertaking capture operations as it is the easiest way to get close enough to hit the animals and enables their movements to be tracked until they are fully immobilized.

Helicopters are presumably also of use to move rhino killers and rhino horns to safe locations rapidly. Low-flying helicopters are also used to scout out potential sites from the air for later poaching activities. The use of some modern heavy-calibre rifles, dart-guns, immobilization drugs and, certainly, helicopters, clearly represents a completely “new face” in terms of rhino poaching. Since 2008, a small proportion of the wildlife industry, including game ranch owners, professional hunters, game capture operators, pilots and wildlife veterinarians have become active players in the rhino poaching crisis (CITES, 2012:28). This development remains unique to South Africa and is a significant factor not only behind the record levels of rhino losses since 2008, but also the insidious spread of rhino poaching across the country. Exactly how extensive this phenomenon is within the game industry is difficult to quantify, but it remains a serious, corrupting force that undermines rhino conservation and stains the image of a community that should be on the forefront of wildlife conservation.

THE LINK BETWEEN RHINO POACHING AND ORGANIZED CRIME

The organization and planning of South Africa’s rhino horn trade has rapidly evolved into a sophisticated and efficient phenomenon. Although details of the nature and extent of the Asian-run syndicates behind the illegal export of rhino horn from Africa to Asian destinations are still emerging, the levels of criminal organization are clearly evident. There is also evidence to suggest that these illegal trading networks have links with other highly lucrative natural resource product trades, including abalone, ivory, lion bones, crocodile organs and live game (Milledge, 2012:72). Rhino crime syndicates operate multi-nationally and are known to be involved in other high-risk criminal activities such as drug and diamond smuggling, vehicle theft, armed robberies and ATM bombings. (Rademeyer, 2012:40) suggests that certain key individuals have relationships with organized crime cartels in Southeast Asia. A further concerning aspect is the fact that not all those linked with the illegal trade in rhino horn belong to the criminal classes. For example, the direct involvement of members of Viet Nam’s diplomatic community has been exposed as another unique and very worrying feature in the recent trade equation.

The role of criminal syndicates

Criminal syndicates tend to specialize in the provision of illicit goods and services. To accomplish their goals, criminal syndicates participate in hierarchical networks, with each member assigned a particular task (Rademeyer, 2012:130). The structure of organized crime insulates the leadership from direct criminal involvement. In rhino poaching, the primary focus of criminal activity is directed at acquiring rhino horns through legal trophy hunting, augmented by a concerted effort to purchase privately-owned and generally unregistered rhino horn stocks illegally. By 2007, South African law enforcement officers had identified at least five separate Vietnamese-run syndicates of close-knit networks of operatives that actively probed the country’s sport hunting industry for opportunities to come into the possession of rhino horns (WWF, 2012:45). Whilst the scale of Asian-run rhino horn trade operations in South Africa seems to have steadily increased, the basic assumption has been that most Vietnamese-hunted rhino horn trophies end up being exported to Viet Nam for internal use. Other Asians, when they do appear in the trade, seem to be linked to the Vietnamese operations. Thai businessmen have also been implicated in the illegal export of rhino horns from “pseudo-hunts” in South Africa to Asia via an export/import company, which is based in Lao PDR (Rademeyer, 2012:120) but has extensive wildlife trade dealings in Viet Nam.

On the other hand, far less prominent Chinese operations in South Africa appear to be more directed towards the acquisition of poached rhino horn, which may then be sold on to Vietnamese operatives or be exported on to China (TRAFFIC, 2011:27). Rademeyer (2012:146) also argue that, Thai and Cambodian nationals have also surfaced in the trade, playing roles in the illegal movement of rhino horn to Asian markets and sometimes appearing as “sport hunters”.

Illicit rhino horn trade occurs along a chain that extends from the poacher at a local level in an African range State to an end-use buyer at an international level, generally in an Asian country and, more specifically, usually Viet Nam. Middleman buyers, exporters and couriers all play roles along the trade chain, dealing with horns derived from all sources, including sport hunted trophies, stock thefts and poached animals (TRAFFIC, 2012:23).

Involvement of South African national and provincial conservation officials

Serious concerns have also repeatedly been raised about irregular conduct by some national and provincial government officials all the way up to senior levels, including management staff. According to TRAFFIC (2012:25), four SANParks officials based in Pretoriaskop section of KNP were arrested in connection with rhino poaching activities. This has been confirmed by (Milliken & Shaw, 2012:45). Although it is disappointing to imagine that conservation staff have been directly connected to rhino crime, such a development is not entirely unexpected as historically local guards have been known to be involved in poaching or providing information to known poachers.

Given the challenges associated with locating and shooting rhinos, it is widely believed that insider information is critical to the successful undertaking of many rhino poaching events. These arrests were the result of an investigation conducted by members of a joint SANParks and South African Police Service (SAPS) team of officials, which also included the SAPS K9 Unit for Endangered Species. However, the involvement of government staff apparently does not stop at the ranger level. Walter Nkuna, the Reserve Manager for Atherstone Nature Reserve in Limpopo, committed suicide after his alleged involvement in a rhino poaching incident at the reserve in March 2012, assisted by three Mozambican nationals and resulting in the death of five rhinos (Rademeyer, 2012:156).

Involvement of wildlife industry professionals

Whilst investment in anti-poaching and wildlife protection remains an imperative feature of wildlife conservation in government-managed protected areas, in most cases, security was never a major recurrent budget consideration within South Africa's private game ranching sector. Indeed, the poaching of rhinos was virtually absent for decades and, beyond adequate fencing and a few ranch hands, most game ranch landowners only required modest precautions in protecting their rhinos (TRAFFIC, 2012:29). The advent of serious rhino poaching on private sector game ranches from 2007 onwards, however, signaled a major change in poaching dynamics and went hand in hand with the emergence of a new breed of poachers in South Africa (TRAFFIC, 2011:45).

National middleman dealers

The next layer in the illegal rhino horn trade involves internal middleman dealers who are usually South African citizens. Sources from the Mozambican police indicated to me in September 2012 that wealthy Mozambiqueans from Maputo province are involved in rhino poaching involving peasants in various districts of Gaza and Inhambane provinces. Understandably, there is some overlap between different levels; a syndicate boss from Levels 1 and 2 may also act as a buyer and exporter in Level 3. More commonly, this role is fulfilled by South African businessmen of Asian origin. These dealers maintain loose networks of "runners" or other operatives who procure poached horns from source locations or obtain "loose" horns from private sector players and then sell it on to the Asian syndicates (WWF, 2011:29).

According to TRAFFIC (2010:30), evidence exist that prospective rhino horn being sent through this chain to end-use buyers in Hong Kong or China for verification and approval before payment occurs and the horns are transferred through circuitous routes.

The so-called runners who are loosely connected to key middleman traders appear to be in constant motion, rapidly responding to rhino horn procurement opportunities, and maintaining regular contact with networks of poachers and horn dealers in various parts of the country through the use of mobile phone technology (Walker & Walker, 2012).

The involvement of wildlife industry insiders

All those involved in activities relating to illegally obtaining rhino horn, without illegally killing the rhino, also fall within Level 3 of the trade chain. Thus, game farmers and professional hunters involved in “pseudo-hunts”, rhino horn thefts, permit violations such as illegal dehorning, as well as illegal rhino horn possession and sales fall within this category. Conversations with those involved in rhino crime investigations indicate that the extent of involvement of the private sector is actually relatively low (WWF, 2009:12). However, it is becoming increasingly clear that the rogue greedy elements who become involved in rhino poaching and illegal horn trade are rapidly drawn into the dangerous underground world of serious organized criminal activities. According to Rademeyer, (2012:67) the involvement of the Groenwaldt gang in rhino poaching is a worrying factor.

Africa-based Asian syndicate dealers

At the highest level of the Africa-based rhino horn trade chain are the leaders of the Asian-run syndicates that monopolize the flow of rhino horn from South Africa to Asian end-use markets. These individuals are essentially the kingpins directly involved in organizing and financing the “bogus” rhino trophy hunts undertaken by an endless parade of different individuals (Mills, 1993:39). They are linked to the middleman traders collecting “loose” and poached rhino horns, and they form the vital connection with deeper trade channels in Asia through which illicit rhino horns reach end-use markets. As national syndicate bosses they are typically involved in many other forms of trade in illegal substances and are often part of known organized crime groups, such as the Chinese triads (TRAFFIC, 2012:26). Many of these individuals first became involved in rhino horn trade in the nascent days of legal, “risk-free” rhino hunting between 2003 and 2005. Some are now permanent residents in South Africa and some openly acquired multiple legal export permits before the trade was exposed and came under pressure.

Vietnamese Embassy personnel

The involvement of Embassy personnel first came to light when Viet Nam’s Commercial Attaché, Khanh Toan Nguyen, was arrested on 1 April 2006 with two rhino horns, as well as diamonds and large sums of cash (TRAFFIC, 2012:105). Under interrogation, this individual allegedly indicated that he had used a diplomatic bag to move rhino horns to Viet Nam on previous occasions. The invocation of diplomatic immunity prevented prosecution, but it has been reported that Khanh Toan Nguyen was “recalled and disciplined” from South Africa (Rademeyer, 2012:28). Another press account in 2008 reported: “Two years ago, Commercial Attaché Khanh Toan, at the Vietnamese Embassy in South Africa, was detected to have connections to rhino horn smuggling and he was punished”. There is concern within law enforcement circles that this individual may have re-entered South Africa on a non-diplomatic passport on at least one occasion since his initial arrest (RAFFIC, 2009:56).

Illegal exports of rhino horn

It is thought that illegally obtained rhino horns are usually exported whole or, infrequently, cut into smaller pieces to reduce risk of detection by airport scanners. Vietnamese buyers at the end of the trade chain prefer to purchase whole rhino horn to ensure authenticity (Walker & Walker, 2012:170). The smuggling of rhino horn out of South Africa is a highly organized criminal activity. Incidents of attempts to smuggle rhino horns have been reported at O.R. Tambo International Airport. Although efforts have been made to ensure that the airport security, Customs officials, Nature Conservation, SAPS and Intelligence work together the problem is still far from over.

The role of Mozambicans in rhino poaching

The increases in rhino poaching in South Africa have gone hand in hand with cross-border poaching activity in Mozambique. For example, the Sabie Game Reserve concession close to the border with Mozambique which is contiguous with KNP has lost at least 50 rhinos over the past five years (TRAFFIC, 2012:34). These rhinos most likely all dispersed from KNP following the border fence being taken down in support of creating the Great Limpopo Trans-frontier Conservation Area. In recent years, poaching incursions into KNP from Mozambique have also grown more frequent, with SANParks law enforcement personnel concerned that at least two well-connected poaching gangs are undertaking multiple rhino kills. In fact, Mozambicans seem to be continuing to play a very active role in the illegal killing of South Africa's rhinos, both in KNP and beyond. According to Rademeyer (2012:23), in March 2011, three Mozambican citizens, who were arrested in October 2010 in the Crocodile Bridge section of KNP, were convicted in the Nelspruit Regional Court for illegally hunting rhino. This has been confirmed by Mr F. Come during our interview in September 2012.

Furthermore, In May 2012, five Mozambicans were arrested in Polokwane (Limpopo) for illegal possession of rhino horns and their vehicle also contained a rifle with 10 live rounds and an axe (Milliken & Shaw, 2012:48). Three Mozambican poachers were also implicated in the deaths of five rhinos at Atherstone Nature Reserve (WWF, 2012:16). Problems associated with rhino poaching activities in KNP across the South Africa/Mozambique border are not unprecedented, though they have never before occurred at the worrying scale observed in recent years. As far back as October 2003, a cross-border operation by a joint South African and Mozambican law enforcement team which included SANParks, KNP rangers, SAPS, Mozambican border police and Mozambican conservation officials, arrested six Mozambican men during a two-week operation. In this operation it was found that the poachers had shot and removed the horns from two adult male and one heavily pregnant female rhino. In recent times, "runners" connected with middleman rhino horn dealers have been tracked rapidly driving from Gauteng province to key border crossing points with Mozambique, lingering for a short period of time and then racing back to Gauteng in what appear to be either a pick-up or transfer of rhino horns (WWF, 2009:27).

Indeed, as South Africa meets with greater success in interdicting rhino horn shipments from South Africa, there is concern that trade routes will shift and other exit points will be used to move rhino horn off the African continent. Increasing evidence of an escalation of illegal consignments of elephant ivory and timber from Mozambique is cause for concern that country will also begin playing a greater role in rhino horn trade (Milliken & Shaw, 2012). In fact, a Vietnamese national was arrested at Maputo International Airport in May 2012 in possession of seven rhino horns (Rademeyer, 2012:69).

The value of rhino horn

The rhino poaching crisis is receiving an unprecedented level of media attention for a wildlife crime and there is an overwhelming number of rhino conservation fundraising efforts currently taking place in South Africa. Huge public awareness about the value of rhino horn adds to the poaching threat due to its economic desirability. The possibility of being detected and penalized often lead poachers and collectors/couriers to sell quickly and below optimum prices to realize immediate income (TRAFFIC, 2012:12). As before, price values for syndicate dealers and retail sellers in end-use markets remain greatest. In fact, retail sellers in Viet Nam may be directly linked to the Asian dealers in Africa so that the profitability of a single transaction may include all stages beyond the middleman collector/courier in both Africa and Asia.

End-use market profitability ultimately drives poaching and illegal trade; price provides the most significant indicator of what is happening in the market, and current rhino horn prices are believed to be inelastic, meaning that the volume of rhino horn being traded is mostly insensitive to increases in price (WWF, 2012:10). Some argue that rising prices, as has been the case in Viet Nam in recent years, indicate that a product is becoming increasingly scarce, and that this typically will lead to an increase in poaching activity at the source (TRAFFIC, 2012:19).

According to WWF (2011:20), evidence exist that suggest that a number of rhino horns in illicit commerce has been steadily increasing and, in 2011, reached 940 horns, weighing an estimated 3760 kg. If so, product scarcity may not be a likely explanation and conventional supply and demand relationships may not necessarily be the operative factor. It is conceivable that Viet Nam's rhino horn trade may represent the phenomenon known as an "economic bubble", whereby trade in rhino horns is consistently taking place at highly inflated values, and prices are impossible to predict on the basis of conventional supply and demand assumptions (TRAFFIC, 2012:27).

Economic bubbles are usually conclusively understood only in retrospect following a sudden and sustained drop in price until that moment, inflated values can be the product of price coordination by those holding the supply and may be further buttressed by emerging social customs (Rademeyer, 2012:90). In fact, the rhino horn trade in Viet Nam is believed to be controlled by a relatively small number of syndicate suppliers and the consumption of rhino horn has taken on extreme faddist dimensions in a status-conscious country, attributes that characteristically support the perpetuation of economic bubbles.

THE USE OF RHINO HORN AS A TRADITIONAL MEDICINE

The use of rhino horn as an ingredient in medicine began in China several thousand years ago and later spread to Japan, Korea and Viet Nam. Rhino horn is classified as a "heat-clearing" drug with detoxifying properties (Mills, 1993:36). It is generally used in combination with other medicinal ingredients, resulting in a wide range of conditions for which it has been traditionally indicated. These conditions generally do not include cancer, although rhino horn is now being promoted by some as a cancer treatment in China and Viet Nam. Even as rhino horn appears to be gaining repute as an emergency drug for dire conditions, it is also being used in new ways more akin to recreation. In Viet Nam, rhino horn has recently been used as a powerful "aphrodisiac", and a cleansing drink to soothe a hangover resulting from overconsumption of alcohol (TRAFFIC, 2012:108).

The factory production of medicines containing rhino horn appears to changing in practice and operation, since manufacturers are trying to comply with domestic trade bans, so that the main medicinal distribution channel today is probably as powder or chunks of horn for grinding at home, sold by traditional pharmacies that prepare prescriptions from dried ingredients. This distribution channel is difficult to monitor and detect illegal trade due to the large numbers of shops, clinics, hospitals, pharmacies, doctors and informal doctors. These are some of the reasons why rhino horn is trafficked to Asian countries (WWF, 2012:14).

RHINO HORN CONSUMERS IN VIET NAM

Older generations of Vietnamese, hardened by decades of war and poverty, are naturally inclined to be frugal spenders, especially where expenditure is directed at purchases they consider to be nonessential. According to the Viet Nam General Statistics Office (2011:20), Viet Nam imported USD10 billion worth of luxury products in 2010. While the super-rich represent only 1% of the population, the number of upper middle class luxury consumers is growing at a staggering rate (Viet Nam General Statistics Office (2011:22).

This demand for luxury items and products extends well beyond top-range watches, designer bags and expensive cognac and encompasses a wide range of high-price consumer items. Given the exceptional prices that rhino horn commands and the social status its consumption confers upon members of certain user groups, in many instances, the rhino horn trade can be viewed as just another aspect of the luxury product trade. In recent years, rhino horn consumption has seemingly grown exponentially and includes a broad spectrum of Vietnamese society (TRAFFIC, 2012:230).

Terminally ill patients

The advent of rhino horn as a medical treatment for individuals suffering from cancer or other serious illness underpins the first group of consumers. These individuals suffer from serious, generally fatal, diseases and have turned to rhino horn to cure or improve their conditions (TRAFFIC, 2012:230). Those who fall into this group are often desperate individuals who are irrationally susceptible to notions of a panacea, especially if promoted by someone with authority like a traditional medicine doctor or encouraged by worried family members (Rademeyer, 2012:250). The discussion concerning the promotion of rhino horn as a curative medicine for cancer is instructive in trying to ascertain the motivation of most individuals in this important consumer group. Evidence of rhino horn dealers or their touts deliberately seeking out and targeting individuals suffering from cancer underscores a controversial, if not predatory and unethical, aspect to rhino horn marketing directed at this particular consumer group (Walker & Walker, 2012:148). In the absence of credible clinical trials providing evidence of the efficacy of rhino horn in cancer treatment, most victims of debilitating oncological disorders and other serious illnesses potentially also become hapless victims of false hope and financial fraud, expending large sums of money on rhino horn remedies that will probably do little, if anything, to improve their medical conditions (Ellof, 2012:28). To date, Viet Nam's government has done little to intervene directly into this aspect of the trade and address the issue of rhino horn's effectiveness for treating cancer and other serious diseases.

Habitual users

A second, and very different, consumer group entails habitual users of rhino horn. These consumers are usually affluent, middle-aged, urban-dwelling individuals, mostly – but not exclusively – men, who frequently imbibe rhino horn mixed with water as part of a detoxifying beverage, often after excessive drinking or binging (Gwin, 2012:29). The notion of rhino horn mixed with water as a general health, body-rejuvenating hangover-curing tonic has further evolved to occasions where rhino horn is added directly to rice wine and drunk in elaborate social or business settings. Within this group, social status is attached to one's ability to consume rhino horn casually and conspicuously without being overtly ill. This obsessed group of buyers is likely to be the largest consumer group, and there seems to be little consideration of the impacts of such usage beyond one's own hedonistic indulgences (Milledge, 2004:28). This group also includes mainland and overseas Chinese, Korean, and Japanese expatriate entrepreneurs living in Viet Nam, especially those forging business relationships through active participation in "rhino wine associations" with rich Vietnamese colleagues and associates. Such usage is strongly linked to the concept of "face consumption", a potent consumer value in both China and Viet Nam (Rademeyer, 2012:250). In collectivist societies, this important cultural value leads consumers to believe they need to engage in acts of conspicuous consumption in order to enhance, maintain or save face. Accordingly, the social networks of affluent Vietnamese and the concept of face consumption serves to drive more frivolous rhino horn usage as each individual strives to function as an integral part of a larger social group and demonstrate compliance with group values (Gwin, 2012:28).

Protective young mothers

The third group of rhino horn users appears to represent a relatively recent trend amongst affluent, middle to upper income, young mothers who feel it is important to keep small quantities of rhino horn at hand for home preparation of medicines to treat high fever, especially that which occurs in

children (Ellof, 2012:25). The volume of rhino horn used by these young mothers appears to be significant, but probably is less than that required for the first two consumer groups. Consumers in this category are heavily influenced by social media. According to Walker and Walker (2012:213) there is a strong demand for bona fide rhino horns and a sincere concern for procuring “real” rhino horns for self-medication purposes within the framework of traditional medicine. Many young mothers in this category believe that rhino horns help to reduce temperature better than any Western medicinal product.

Elite gift givers

A fourth group of consumers is not directly related to medical treatment at all, but rather links with gift giving as a means to carry favour and gain influence - an ancient attribute of Vietnamese social and political intercourse (TRAFFIC, 2012:230). In this regard, many rhino horns are apparently purchased and offered as high-value, status-conferring gifts to important political officials and other socio-economic elites within the country. Whilst it is not possible to quantify the volume of rhino horns used as gifts, the fact that it occurs, and sometimes for the purpose of bribery, has been illustrated by certain publicized cases. For example, on 6 August 2010, Nguyen Van Khoe, Chairman of the Hoc Mon District’s People’s Committee was sentenced to 26 years imprisonment by the Ho Chi Minh City People’s Court for accepting a monetary bribe and part of a rhino horn valued at USD10 000 (Rademeyer, 2012:202). Related to gift giving is the emergence of rhino horn as an acceptable currency for payment of luxury products in certain circles in Viet Nam.

SOUTH AFRICAN GOVERNMENT’s RESPONSE TO THE CRISIS

In addition to the regulatory response made in updating legislative policy to close loopholes being exploited to legally export horn from trophy hunts, the DEA has also instigated structural and organizational changes (Rademeyer, 2012:205). A new Directorate to address Biodiversity Enforcement issues was created to co-ordinate and investigate biodiversity crimes on a national basis. Furthermore, a cross-sectoral National Biodiversity Investigators’ Forum was established in March 2009 as a contact point for exchanging and discussing law enforcement information on biodiversity-related issues (TRAFFIC, 2011:24).

The government also developed a the National Strategy for the Safety and Security of Rhinoceros Populations and Horn Stocks in South Africa designed to combat the increasing poaching threat. The Strategy seeks to outline the following:

1. Implementing an immediate action plan aimed at mitigating the current threat to the rhino population posed by the escalation in poaching and the illegal trade in rhino horns and associated by-products;
2. Securing the shared commitment of government (at national and provincial level), private land owners, local communities and international stakeholders, as well as the necessary financial and manpower resources and political will to implement this policy;
3. Supporting the establishment of a national co-ordination structure for information management, law-enforcement response, investigation and prosecution;
4. Developing an integrated and co-ordinated national information management system for all information related to rhino species in order to adequately inform security related decisions; and
5. Investigating proactive security-related measures aimed at possibly facilitating a better understanding for any possible future regulated and controlled international trade in the species, and any associated by-products.
6. South Africa has also signed a Memorandum of Understating with Viet Nam in 2012 covering a whole range of issues including Rhino poaching.

ADDITIONAL STRATEGIES: LAW ENFORCEMENT IN SOUTH AFRICA

In addition to the National Strategy for the Safety and Security of Rhinoceros Populations and Horn Stocks, South Africa has established the following law enforcement agencies to fight the scourge:

- ✓ National Wildlife Crime Reaction Unit (DEA)
- ✓ SAPS (DPCI)
- ✓ National Joints Committee
- ✓ National and provincial nature conservation officials
- ✓ Deploy members of the South African National Defence Force at the KNP
- ✓ Beef up security at ports of entry and exit
- ✓ Established a SADC Rhino Management Group
- ✓ National Prosecuting Authority
- ✓ Rhino and Elephant Security Group/INTERPOL Environmental Crime Working Group

RECOMMENDATIONS

Legalise the commercial trade in rhino horn

Arguments in favour of legal trade in rhino horn

Some of the major private and State rhino stakeholders in South Africa are actively campaigning for the legalization of trade in rhino horn, believing that a legal supply of horn could be part of the solution to the current poaching crisis and contribute to continued expansion of rhino range and numbers (TRAFFIC, 2012:204). The South African government has received a number of proposals for legalizing trade, including one from the provincial authority Ezemvelo Wildlife (Kwazulu-Natal), although all remain under consideration and none have been endorsed. There is no denying that the debate around legal trade in horn is an incredibly “hot topic” in South Africa and one that has become increasingly polarized, with few objective considerations of the costs and benefits of market approaches under different trade regimes and timeframes.

However, proponents of legal trade in rhino horn accept that demand for rhino horn clearly exists in Asia and believe that meeting this demand with some form of legal supply may be far more effective than attempting to enforce a continued prohibition on the trade. According to this view, there is an indication that demand for rhino horn may be price inelastic and, therefore, argue that approaches that rely exclusively upon law enforcement may be doomed to failure because they simply create opportunities for organized criminals to make “big money” (Rademeyer, 2012:205). In their view, this belief is buttressed by tangible evidence concerning what happened with the prohibition of alcohol in the U.S. during the 1920s or what is going on right now with respect to the so-called “war on drugs”.

One of the fundamental arguments provided by resource economists in support of legal trade in rhino horn is the theory that the provision of an increased legal supply of rhino horn would reduce black market prices and, thus, the financial gains profiteers are currently making from illegal trade. This, in turn, it is reasoned, will lead to a reduction in illegal demand and, ultimately, rhino poaching. In addition, proponents of legal trade additionally offer that the required rhino horn could be supplied from rhinos that did not have to be killed for this purpose, such as stockpiles of horn from natural mortalities or legal dehorning activities (TRAFFIC, 2012:209). The hope is that rhino horn could be provided on a sustainable basis without killing animals as horn regrowth occurs at the rate of about 3.5–6 cm each year, depending on the age of the animal. Proponents of this approach do not expect poaching to stop completely, but hope that legal supplies would meet some of the demand that would otherwise have to be fulfilled by killing rhinos.

Arguments against legal trade in rhino horn

Opponents of legal trade in rhino horn also accept that a recharged demand for rhino horn currently exists in Asia, but remain opposed to legal trade at the present time for a variety of reasons. Like those on the other side of the fence, a diversity of opinions is found, ranging from dogmatic or philosophical opposition on principle to more pragmatic considerations of timing or other detail (Ellof, 2012:28). On one side of the spectrum there are those commentators who believe that any form of trade or sustainable utilization of wildlife is inherently wrong and should never be countenanced. However, such views are contrary to the sustainable-use philosophies that form the cornerstone of conservation approaches adopted by the majority of African rhino range States and many other conservation bodies. Indeed, the practical application of sustainable-use principles has been one of the reasons for South Africa's White Rhino conservation success story, the current poaching crisis notwithstanding.

Security measures

Perimeter security

The first layer of perimeter security is the fence. Fence lines need to be maintained and kept clear of all vegetation. Perimeter roads running next to fence lines must also where possible be maintained and swept on a regular basis. Patrols of fence lines must be carried out on a daily basis but not at regular times, so any poachers trying to work out patrol times cannot establish patterns (Bewick, 2012:29). Security patrols on fence lines must check for tracks of poachers entering or exiting the game reserve, checks must also be done to establish any parts of the fence have been cut or tampered with in any way. Electric fences must be checked for current and that they are "live". Solar panels, inverters and batteries voltages must also be checked with a multi-meter, and replaced if necessary.

Perimeter patrols should be carried out by game rangers on foot, but should also be supplemented by vehicle patrols. Vehicle patrols can be used for the dual purpose of fence patrol, checking on game rangers patrol logs, and resupplying game scouts in the field with food and water. In Game reserves, Nature reserves not having the large predators such as lion, but containing populations of rhino, horseback patrols can be very effective for perimeter and roving patrols (Bewick, 2012:56). Use of electronic security systems can also supplement regular security patrols of perimeter fences, sensitive ground sensors can be linked to security control rooms, and have been used in one Limpopo game reserve. Beams and C.C.T.V. cameras can be radio linked to control rooms to detect intruders.

In very large game reserves such as Kruger National Park air patrols can be very effectively used to supplement foot and vehicle patrols to spot incursions by poachers. Unarmed and armed aircrafts can be used effectively in this regard. Ground units should be in radio contact where ever possible with patrolling aircraft (Milledge, 202004:29). Observation posts should be sited at known crossing points used by poachers, these should ideally identified by a team leader, and sited to provide good coverage of an area, and good cover for the game rangers. Game rangers in observation posts should be in constant radio contact with controllers and should make hourly reports.

Game rangers conducting observation posts should be equipped with binoculars and night vision equipment where ever possible. Spoor discipline of security teams conducting observation posts must be emphasized, routes in, routes out, silence, no smoking, latrine areas, anti- tracking, call signs, cover, emergency drills, must be covered in briefing of those conducting observation posts (Gwin, 2012:29). All game rangers conducting perimeter patrols, vehicle perimeter patrols and observation posts must compile daily patrol reports.

Roving vehicle patrols

Roving vehicle patrols have the benefit of being able to cover large areas in short amount of time, while as mentioned they can be used to supplement perimeter fence patrols, they can also serve to replenish observation posts and foot patrols with food, water and ammunition. The disadvantage of vehicle patrols is the noise of vehicles that can be heard from a long way off by poachers. Therefore vehicles can be used as roving observation posts, by driving into thick cover every now and then, switching off the motor and watching and listening (Bewick, 2012:39). Vehicles have the benefit of carrying heavy loads and can be used for extended patrols in remote areas, with very little water. When conducting extended patrols, and observation posts, some of the game rangers should conduct fan patrols while vehicle has stopped. Sweeps should be conducted on game paths and all waterholes for snares and tracks of poachers.

Undercover vehicle patrols

In larger game reserves undercover patrols should be conducted by members of anti-poaching security teams using unmarked civilian vehicles posing as tourists (Bewick, 2012:30). During the poaching surge in South Africa in 2007-2012 crime syndicates have entered game parks as "tourists" and shot rhinos using high powered hunting rifles. Undercover vehicle patrols could shadow any suspicious vehicles loitering close to rhinos.

Access control

Access control points are of vital importance, often security control of other areas is good, and access control points at gates are weak. Security personnel should be selected and briefed what is expected of them at access control points. Searching procedures should be discussed and formulated by security manager and park management, so that no misunderstandings occur. Vehicle registration numbers should be recorded, make and type of vehicle, colour, and number of occupants (Milledge, 2004:29). Use should be made of C.C.T.V. systems with continuous recording capability, to record vehicle registrations, and face of driver. Specially trained dog and handlers could be used to detect wildlife products, in lieu of full searches at tourist gates. All vehicles on entering and leaving game reserves should be searched at access control points. Provision should be made and special gates allocated only to contractors and suppliers. The same rigorous search procedures and recording of entry and exit times, vehicle registrations, and number of occupants should be carried out on a daily basis. Declaration of Firearms should be requested of all visitors, and storage safes and registers should be provided by game reserve. Only senior security personal should carry out this task, and hourly reports on a selected private radio channel of firearms booked in and out should be made to a security control centre.

Intelligence gathering

The key to successful anti-poaching operations and game reserve security is the production and analysis of intelligence that can be used to plan successful anti-poaching operations in the area. Ideally, the people that are selected to work full time in this area should be specially selected and have previous intelligence gathering experience. Informers should be identified and approached and this must always be done on a one to one basis, and never with others present (EWT, 2012:39). The safety of the prospective informer must always be guaranteed and must never be compromised. Trust must be gained by any informer before he will deliver raw intelligence to the game rangers. Never identify your informers to other members of the anti-poaching unit and keep your database of informants very secure. Cellphones are very useful way of keeping in touch with your informers, and in turn they can communicate intelligence to you by means of SMS or call you. Your informer base should never remain static, as some informers will not produce much intelligence, so you should be constantly expanding and on the lookout for new prospective informants.

Large concentrations of local people living next to borders of large game reserves should be targeted as prospective informants. As while many of these people, will be employed in lodges and restaurants within the game reserve, experience has proved that a large percentage of poachers will come from within this same community. Many South African game reserves, contain private lodges leased by concessionaries, these lodges bring in much needed revenue for the game reserve (TRAFFIC, 2012:206). The managers and staff are very good source of intelligence and should be recruited. Petrol service stations, hotels, local pubs situated outside the borders of the game reserve are also good recruiting grounds for informers. Waitresses and waiters at bush pubs are very good places to recruit informers. Very little news escapes the eyes of the local population any strangers new to the area will soon be detected, so treat local village chiefs, headman as goldmine of intelligence. Operational security is vital, so when recruiting prospective informers, use a non - game reserve vehicle, preferably a private vehicle and dress in civilian clothing.

Reward system and informer handling

Some game reserves offer large cash rewards for information on rhino poachers. SANParks has also introduced rewards system as well. Informers that are producing continuous and important poaching intelligence should be rewarded with meat, rations or pre- paid cell phone vouchers (Bewick, 2012:37). The rule of thumb, in intelligence is when information on poachers is obtained from a few different sources in an area, it is worth investigating further. Intelligence received from a particular source that never amounts to anything, the informant should be “red flagged” and incentives should be discontinued.

Connecting the dots

Analysis and grading of raw intelligence should be carried out by an experienced person in the collection and analysis of intelligence. The raw intelligence is then separated into Operational Intelligence, which is acted upon immediately or Strategic Intelligence which is used in planning future operations or changing current strategies. Strategic Intelligence may also necessitate improved training of existing anti-poaching units. Trends identified during poaching can then be passed onto other regional partners operating in the same field of Anti-Poaching operations (Bewick, 2012:29). Graded intelligence should only be shared with those persons authorized to receive it, in the various parks boards and should under no circumstances be shared with other departments. The entry of sophisticated crime syndicates into rhino poaching and the involvement of game reserve staff has necessitated this decision, as trust levels are very low. In the past intelligence shared amongst various parks boards has been leaked to the press, compromising on-going investigations.

Counter intelligence

Sophisticated criminal syndicates are heavily involved in rhino poaching - their intelligence is very good as they “recruit” insiders (game reserve staff). It is important to remember that some of these poachers have extensive military background. So very experienced intelligence operators should conduct some form of counter intelligence, suspected staff members should be kept under surveillance, polygraphs should be taken of anti- poaching unit members if possible, and police clearances should be updated. All members of anti-poaching units must be security registered with Psira (the South African Private Security Regulatory Authority) and must have completed their security grades (TRAFFIC, 2012:207). Those tasked with Counter Intelligence must monitor operational security of all anti -poaching units, and ensure that “leaks” do not occur. Communications of anti-poaching units must be conducted on closed Radio Nets, available only to those units. Other game reserve department’s radios should not be able to operate on the same channels as anti-poaching units. Strict controls should be placed on Cell phone communications of unit members, pre anti-poaching patrols, and during actual patrols.

Increased networking and co-operation of various state departments, South African Police Intelligence, San Parks, KZN Ezemvelo, and North West Parks Board And private anti- poaching intelligence groups are encouraged and Interpol Environmental Section has called for increased regional and international agencies co-operation to counter increased global wildlife trade (Bewick, 2012:37).

Crime Scene Analysis

Many South African Anti-poaching Units have been retrained in improved crime scene analysis, collection and preservation of evidence techniques. Where ever possible photographic evidence should be obtained. Any evidence found on the scene such as cartridge cases, pangas, axes, clothing, cartridges, magazines, clear imprints of tracks, and of course pictures of poached rhino, bullet entry and exit wounds must be be photographed (Bewick, 2012:28). This incentive included with training in the preparation of criminal case dockets, should assist the National Prosecuting Authority in the prosecution of rhino poaching incidents. The scene of the crime must be guarded, no members of the public should be allowed near, till trained crime scene investigators are on scene. Vehicle and human tracks should be preserved as far as possible. No articles found on scene should be handled by anyone as fingerprints can be lifted by the police.

Dehorning

Observations of countries that have dehorned rhinos in an attempt to prevent poaching have proved, it is no deterrent, and may have many other negative effects such as loss of calves where large predators such as lion and spotted hyena are present. Many cases are on record that where rhinos were dehorned but were tracked down and killed by poachers (to recover the small amount of the remaining horn) or killed and then left by poachers so they would not track the same dehorned rhino another day (TRAFFIC, 2012:206). Rhino cows use their horns to protect their calves from large predators and other rhinos. They also use their horns to dig for natural minerals and salts that they require. Only in very high risk situations where rhino populations are very exposed to large local populations of people and adequate security is not affordable should private rhino owners dehorn their rhino, but this is no deterrent and some form of security should be negotiated, with local police and farmer block-watch groups. In these scenario's it is vital that an area informer network is set up as soon as possible, with as much community involvement as is possible to give early warning of problems (Ellof, 2012:39). Movements of owners, farm managers should be kept as secret as possible and a presence on the property must always be maintained.

Use of unmanned aerial vehicles (drones)

An unmanned aerial vehicle (UAV), commonly known as a drone is an aircraft without a human pilot on board. Its flight is either controlled autonomously by computers in the vehicle, or under the remote control of a pilot on the ground or in another vehicle. They are predominantly deployed for military applications, but also used in a small but growing number of civil applications, such as firefighting and nonmilitary security work, such as surveillance of pipelines (PhD, 2012:20). UAVs are often preferred for missions that are too 'dull, dirty, or dangerous' for manned aircraft. UAVs typically fall into one of six functional categories (although multi-role airframe platforms are becoming more prevalent):

- ✓ Target and decoy – providing ground and aerial gunnery a target that simulates an enemy aircraft or missile
- ✓ Reconnaissance – providing battlefield intelligence
- ✓ Combat – providing attack capability for high-risk missions
- ✓ Logistics – UAVs specifically designed for cargo and logistics operation

- ✓ Research and development – used to further develop UAV technologies to be integrated into field deployed UAV aircraft
- ✓ Civil and Commercial UAVs – UAVs specifically designed for civil and commercial applications fitted with a Lightweight Multirole Missile. They can also be categorised in terms of range/altitude.

The use of UAVs in current operations

During 2012 and in previous years, armed UAV strikes were conducted by the United States against Al-Qaeda and Taliban militants in Afghanistan, Somalia, Yemen and in the Federally Administered Tribal Area (FATA) of North-West Pakistan. Since 2004, when the Bush administration sanctioned armed strikes, it is estimated that 2,365 militants in Pakistan have been killed as a result of drone attacks (New America Foundation, 2010:40). Yet, alongside the success of these operations come estimates of 500 civilian deaths, which have led to criticisms of the collateral effect of UAV strikes. Nevertheless, UAV strikes do appear to be successfully neutralizing the designated targets and so are increasing in favour with Western governments as a form of conducting remote operations. In South Africa, drones were first manufactured in 1983 and were used by the South African Defence Force to support UNITA rebels in Angola. In 2012, drones provided by DENEL were used by the SANParks at the KNP for observation purposes.

Advanced Surveillance Technologies and UAVs

Most UAVs are (or can be) equipped with camera technologies that can record and transmit photo images to the ground control station. These technologies have become cheaper and more sophisticated and allow image capture at greater distances with greater resolution. It is also possible to equip UAVs with sensors, such as forward-looking infrared (or other thermal imaging) cameras that can detect infrared radiation, typically emitted from a heat source, and create the “picture” assembled for the video output (DENEL, 2012:30). Advanced video analytics can apply artificial intelligence to collecting and processing considerable amounts of video data. This, when combined with facial recognition (FR) software, can be used to continuously track individuals while in public and also in private (e.g., through windows or even walls).

Criticism of against the use of UAVs

There has been much international criticism of the use of armed UAVs, particularly by America in Afghanistan, Pakistan and elsewhere. According to Brooke-Holland (2012:12), a report by Stanford University examining US drone attacks in Pakistan, “*Living Under Drones*”, argued drone strikes are damaging and counterproductive (PhD, 2012:45). Based on figures collated by the Bureau of Investigative Journalism, it estimated between 2,562 and 3,325 people were killed in drone strikes in Pakistan between June 2004 and mid-September 2012, of whom 474 to 881 were civilians. It argued that US drone strike policies “cause considerable and under-accounted for harm to the daily lives of ordinary civilians, beyond death and physical injury.

Strengths and weaknesses of UAVs

Strengths	Weaknesses
<ul style="list-style-type: none"> ✓ Good for dull, dirty dangerous tasks ✓ Operations can be conducted without risk to aircrew ✓ Can be cheaper (caution – through life costs need to be considered) ✓ Availability - unmanned aircraft can support tactical activity where manned assets would not be available ✓ Small/medium scale can provide immediate, tactical situational awareness (in uncontested airspace) ✓ Reduced manpower footprint in theatre ✓ Very good at intelligence, surveillance and reconnaissance and attack missions (in uncontested airspace) ✓ Removal of human limitations can allow different performance factors to be developed and exploited ✓ Persistence ✓ Can help reduce harmony issues by operation from rear base 	<ul style="list-style-type: none"> ✓ Lack of small, tailored weapons ✓ Lack of long air carriage life weapons ✓ Vulnerable to cyber and communications link attack ✓ Legal, ethical, moral thinking needs further development ✓ Law of Armed Conflict may constrain high levels of automation/autonomy ✓ Current systems are not built to airworthy standards – costs will rise as these are enforced ✓ Integration into non-segregated airspace is problematic, potentially costly and there is uncertainty over when it will happen ✓ No experience of non-urgent operational requirement procurement ✓ Public perception issues (killer drones) ✓ Key technologies remain immature ✓ Very good at niche roles but lacks overall flexibility and adaptability compared to manned aircraft ✓ Poor penetration
<p>Opportunities</p> <ul style="list-style-type: none"> ✓ Focused UAS research and procurement could underpin national industrial sustainment in key areas ✓ Ideal platform to rapidly exploit new and advanced technologies ✓ Directed energy weapon/electromagnetic weapon employment ✓ Novel approach to operations ✓ Opportunity to develop new acquisition processes ✓ Expand into control of the air and mobility air power roles ✓ Export potential (but International Traffic in Arms Regulations and Missile Technology Control Regime 	<p>Threats</p> <ul style="list-style-type: none"> ✓ Threat to operational sovereignty through declining national industrial capability ✓ Seen by some as policy/financial panacea without appropriate understanding of relative strength and weaknesses of current systems ✓ Entrenched views skew arguments both for/against ✓ Requires new thinking ✓ Funding new systems difficult in financial climate ✓ Current defence industrial strategy and procurement

Usage restrictions

Drones should not be deployed except where there are specific and articulable grounds to believe that the drone will collect evidence relating to a specific instance of criminal wrongdoing or, if the drone will intrude upon reasonable expectations of privacy, where the government has obtained a warrant based on probable cause; or where there is a geographically confined, time-limited emergency situation in which particular individuals' lives are at risk, such as a fire, hostage crisis, or person lost in the wilderness; or for reasonable non-law enforcement purposes by non-law enforcement agencies, where privacy will not be substantially affected, such as geological inspections or environmental surveys, and where the surveillance will not be used for secondary law enforcement purposes (Unmanned Aircraft Systems Report, 2011:12).

Image retention restrictions

Images of identifiable individuals captured by aerial surveillance technologies should not be retained or shared unless there is reasonable suspicion that the images contain evidence of criminal activity or are relevant to an ongoing investigation or pending criminal trial.

Planning of anti-poaching operations

Planning of anti-poaching operations should be carried out by experienced team leaders/ commanders. Intelligence gained can increase chances of successful operations against poachers. Topographical maps are very useful in planning and executing successful anti- poaching operations as terrain, roads, game paths, waterholes, rivers, bridges, cell-phone towers, and food caches can be plotted. Siting of observation posts can be plotted using contour lines. Google Earth maps can be a very useful aid in planning anti- poaching operations as small pans, waterholes and vegetation are visible on Google Earth maps. GPS co-ordinates of an area are also given and can be used for pick up points. During planning stages of an operation team leaders and game rangers should be included in all briefings. Once a plan has been devised, the full team should be briefed on all aspects when orders are given.

A need for a political will

Whilst the many important initiatives and efforts that have served to elevate rhino conservation to be a top-level concern of the South African government are to be applauded, it is essential that government institutions and high-ranking political figures, including the President, continue to see the rhino crisis as one that negatively impacts on the country's international image and reputation; undermines economic development, especially in the tourism sector; poses a serious national security threat, including armed incursions of poachers operating from bases in neighbouring countries; entrenches the presence of international organized crime syndicates in the nation; and concerns an ecological, biological and conservation issue of global significance (TRAFFIC, 2012:207).

Furthermore, the rhino poaching crisis has been identified as a critical problem in South Africa by CITES and other international biodiversity conservation forums. The eyes of the world are clearly upon South Africa now, creating a unique opportunity to demonstrate leadership in ensuring the conservation of rhinos globally. Failure in this regard will certainly seriously damage South Africa's conservation reputation and prestige as an ecotourism destination (Gwin, 2012:37). It is further recommended that rhino issues be raised to a higher political level in the international dialogue between South Africa and consumer countries such as China and, particularly, Viet Nam. The signing of Memorandums of Understanding should be extended to countries such as Laos, China, Thailand and Hong Kong.

Policy and legislation

A review of national policy and legislation with a specific focus on rhino horn trade is needed to identify and close gaps and legal loopholes which currently give rise to rhino horn trade and consumption. Special attention should be paid to the following issues: given the escalating prices for rhino horn on the Vietnamese market, current penalties for rhino horn smuggling and illegal trade, possession or usage need to be evaluated and updated to ensure that they serve as an effective deterrent (TRAFFIC, 2012:140). As documented in this article, pseudo-sport hunting in South Africa involving questionable Vietnamese hunters has resulted in a plethora of rhino horn trophies being imported into Viet Nam. It is not clear whether current legislation makes sufficient provision for addressing instances where these “personal effects” trophies are used for “commercial purposes” in violation of CITES. The obligations concerning legal rhino horn ownership need to be carefully reviewed in order to comply fully with CITES requirements.

The proliferation of internet trading in endangered species products represents an evolving challenge to wildlife authorities on a global basis. As rhino horn is commonly marketed in Viet Nam through the internet, the authorities need to ensure that the country’s wildlife trade legislation adequately provides legal authority to act against internet traders in a proactive and forceful manner. Websites selling rhino horn and other endangered species products should be shut down and perpetrators prosecuted. The trade in “fake” rhino horns constitutes a kind of fraud in its own right, but more importantly contributes to the social perception of rhino horns as a rare and valuable commodity, which in turn generates demand for authentic horns. Wildlife legislation needs to be reviewed and updated to ensure that this avenue of trade can be curtailed and legally addressed in an efficient manner (Ellof, 2012:28).

The failure to regulate pseudo-hunting constitutes an avenue of trade and should be addressed as a matter of urgency. Thus, an ongoing programme to track legal rhino horn trophies in the private sector is required. Private possession of rhino horns should only be allowed under special ownership permits in which individual horn trophies are licenced to a particular physical address and owner. Any subsequent movement of these trophies to a new address or transfer to a new owner (including other family members) should only transpire by amending the ownership permits prior to the actual transfer of the rhino horn trophy.

CONCLUSION

The South Africa/Viet Nam rhino saga continues. It remains unclear when the present crisis will come to an end. Whilst the South African government has rallied over the last two years to forcefully address the crisis through a multi-pronged front of initiatives, it is not yet evident that the tide is turning and the country’s rhino conservators are decisively gaining the upper hand. Nonetheless there is great expectation that improved law enforcement co-ordination, investigative diligence and prosecutorial performance will produce significant deterrence effects that lead to a reduction in rhino poaching losses in the near future. No doubt, time will tell, but on the other side of the globe, in Viet Nam, there is little suggestion that any meaningful remedial action is being taken to address potent market forces that are driving the illicit trade in rhino horn. The fact that the rate of seizures and arrests has markedly dissipated in recent years is not in any way indicative of less trade and consumption, but rather a worrying sign that law enforcement effort is increasingly ineffective and possibly compromised. Strict implementation of the country’s legislation that prohibits rhino horn trade and compliance with CITES requirements for regulating rhino horn trophies does not appear to be a government priority at this time. This state of affairs serves to undermine any optimism for a “quick fix” turn-around of rhino fortunes in South Africa. Indeed, there is no “silver bullet” solution to the rhino crisis, but bilateral co-operation and commitment between source and consumer countries is a prerequisite for forward progress. This article has made a series of recommendations that South Africa can undertake to further address important issues and improve prospects for turning the current rhino crisis around. However, the ongoing imbalance between South African and Vietnamese efforts to curb illegal trade in rhino horn remains stark and rhino conservation will remain in a precarious state until this gap is bridged.

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