

PENDANTS, POWDER AND PATHWAYS

A rapid assessment of smuggling routes and techniques used in the illicit trade in African rhino horn

Sade Moneron, Nicola Okes and Julian Rademeyer





TRAFFIC REPORT

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A White Rhino mother and juvenile male in Hluhluwe-iMfolozi Park, South Africa,
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Design:
Ngoc Tram Creative
ngoctram89@gmail.com

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A White Rhino mother and juvenile male in Hluhluwe-iMfolozi Park,
South Africa.





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ACRONYMS

AFRICA-TWIX	Africa Trade in Wildlife Information Exchange
AfRSG	African Rhino Specialist Group
ASEAN-WEN	Association of Southeast Asian Nations’ Wildlife Enforcement Network
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP	Conference of Parties
DEA	Department of Environmental Affairs
DPCI	Directorate for Priority Crime Investigation
EU	European Union
FIFA	Fédération Internationale de Football Association
Hong Kong SAR	Hong Kong Special Administrative Region of the People’s Republic of China
ICCWC	International Consortium on Combatting Wildlife Crime
IUCN	International Union for Conservation of Nature
Lao PDR	Lao People’s Democratic Republic
MoU	Memorandum of Understanding
NISCWT	National Integrated Strategy to Combat Wildlife Trafficking
OECD	Organization for Economic Co-operation and Development
SADC	Southern African Development Community
SARS	South African Revenue Service
SSC	Species Survival Commission
UNODC	United Nations Office on Drugs and Crime
WCO	World Customs Organization

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EXECUTIVE SUMMARY

Facilitated by highly adaptive transnational criminal networks, the global illegal trade in African rhino horn is driven by seemingly insatiable consumer demand in Asia. This assessment reveals worrying new evidence that entrenched criminal syndicates of Chinese origin, operating in South Africa, have begun manufacturing bracelets and beads, cutting horn into rough “disks” and packaging offcuts and rhino horn powder locally to facilitate smuggling efforts, evade detection at airports and supply ready-made products to consumers in Asia. Should these methods become more widespread, it is likely to significantly heighten the law enforcement challenge in Africa and along the trade chain to Asia.

In addition, there is growing evidence that fraudsters are exploiting the demand for rhino horn to produce and sell bovine fakes to gullible consumers. Trade in fakes—which include beads and bracelets—will further complicate the ability of law enforcement agencies to detect and intercept rhino horn products.

This report, which draws on 456 records in TRAFFIC’s global database of wildlife seizures¹ (TRAFFIC’s database), covering the period 2010 to June 2017, also examines the complex and dynamic smuggling routes used by networks ferrying their contraband from Africa to Asia, identifies key hotspots and presents an overview of smuggling methods employed by rhino horn traffickers.

The assessment aims to deepen understanding of smuggling techniques and the highly adaptive routes that facilitate the movement of African rhino horn along the illicit rhino horn supply chain.

Based on the evidence gathered for this assessment and analyses of known smuggling routes, the report’s recommendations call for improved co-operation between law enforcement agencies at local, national, regional and international levels; heightened anti-corruption measures; targeted investigations to disrupt transnational criminal networks; increased follow-up action to seizures that lead to arrests and successful prosecutions of perpetrators; and improved data collection and information sharing on seizures and methods of concealment.

¹ This database contains information on wildlife seizures from open sources as well as information collected by TRAFFIC when carrying out market surveys (both online and physical).

INTRODUCTION

More than 7,100 rhinos have been killed by poachers in Africa over the past decade. Today, only about 25,000 remain (Emslie *et al.*, 2016). In 2016 alone, there were 1,160 documented incidents of rhino poaching across six African range States, a slight decline on the official 2015 figure of 1,346 (IUCN SSC African Rhino Specialist Group (AfRSG), *in litt.* to J. Rademeyer, July 2017). True poaching losses may be higher, as not all carcasses are detected. South Africa, home to 79% of African rhinos, is the centre of the storm, suffering 91% of the continent's known poaching losses in 2016. Illegal killing in the country's Kruger National Park, which holds Africa's largest rhino population, has been particularly severe and the park's Black Rhino *Diceros bicornis* and White Rhino *Ceratotherium simum* populations are in decline (Department of Environmental Affairs (DEA), 2017a; DEA, 2017b). Significant losses have also been recorded in Namibia and Zimbabwe over the past three years, raising concerns about geographical shifts in poaching (Emslie *et al.*, 2016).

Facilitated by highly adaptive transnational criminal networks, the global illicit trade in African rhino horn is driven by seemingly insatiable consumer demand from Asia, with Viet Nam and China identified as the dominant end-use markets (Emslie *et al.*, 2016; Milliken, 2014). Ancient traditional medicinal beliefs and modern urban myths have coalesced to fuel the consumption of rhino horn for its perceived benefits as a fever-reducer, cancer treatment, health tonic and hangover cure. Rapid increases in disposable income in consumer countries in recent years and overt displays of new-found wealth have facilitated conspicuous consumption of rhino horn. For the rich, it is a luxury item and an investment, coveted for its rarity, held up as an embodiment of status and a means of buying favour (Hübschle, 2016; Kennaugh, 2016; Milliken & Shaw, 2012; Rademeyer, 2016). Rhino horn carvings, libation cups, bracelets, beads, bangles and powder are produced in parts of Viet Nam and the Lao People's Democratic Republic (PDR), primarily for Chinese buyers and there is some evidence of trade in fake antique carvings—commonly referred to as *zuo jiu*, literally “made old”—in parts of China (Hübschle, 2016; Kennaugh, 2016; Milliken & Shaw, 2012; Rademeyer, 2016).

The smuggling routes employed by criminal networks trafficking rhino horn are complex and dynamic, exploiting weaknesses in border controls and law enforcement capacity constraints to provide a steady supply of rhino horn to Asian black markets. They span countries and continents, passing through multiple airports and legal jurisdictions. It is a task made easier for criminals by fragmented enforcement responses hamstrung by bureaucracy, insufficient international co-operation and corruption.

Myriad methods are used to smuggle the contraband and evade detection; whole horns are cut into smaller pieces, concealed inside machinery and hi-fi speakers, disguised as curios or toys, worked into beads and bracelets, wrapped in foil and coated in toothpaste or shampoo to defeat x-ray machines and mask the stench of decay, hidden in box wine cartons and in consignments of timber and cashew nuts, to list a few examples.

Particularly concerning is new evidence that some criminal networks of Chinese origin, operating in South Africa, have begun processing and working rhino horn locally before smuggling the products to consumers in Asia. Police investigations in recent months have uncovered small home workshops where rhino horn is cut into rough “disks”, beads and bracelets are manufactured and offcuts and rhino horn powder are packaged for export. Fakes, primarily made from cow horns and designed to fool gullible consumers, are also increasingly being discovered by police in South Africa. These developments are likely to significantly challenge law enforcement efforts to identify and intercept rhino horn shipments along the illicit supply chain from Africa to Asia.



THE ILLICIT SUPPLY CHAIN

Information on rhino horn seizures was drawn from TRAFFIC’s database. Seizure data is inherently biased as they account for a widely varying fraction of the horn that has entered the illicit supply chain owing to differences in law enforcement abilities to detect and seize contraband, and administrative competences to report such seizures. Despite these caveats, analysis of seizure data still reveals valuable information about the methods and routes used by trafficking networks.

A total of 456 incidents were analysed, covering the period from 2010–June 2017 (Table 1). Seizures in India and Nepal were excluded from this analysis, as available records indicate that all seizures documented there to date have involved horns from Asian rhinos (T. Milliken, *pers. comm.*, June 2017). Table 1 contains the estimated number of rhino horns and estimated horn weight. As only about one-fifth of the incident records include both the count of the horn (or horn derivative) and the weight of the horn (or horn derivative), with most of the records including either the count or the weight, the number of horns and horn weight were estimated where this information was not available. In estimating the number of horns and horn weight, this assessment used average weights calculated by Pienaar *et al.* (1991), whose study found that the mean total horn weight for White Rhino was 5.88 kg or 2.94 kg per horn, and 2.65 kg or 1.33 kg per horn for Black Rhino. Based on the assumption that 90% of the rhino horn in illegal trade originates from White Rhinos, as per Milliken’s (2014) calculations, an average horn weight of 2.78 kg is used in this assessment.

Using these variables, it is estimated that over the period 2010–June 2017, at least 2,149 horns, weighing more than five tonnes, were seized by law enforcement agencies globally (Table 1). It is acknowledged that the data are incomplete as not all seizures are reported. Using the weight estimates described above, it is estimated that at least 37.04 tonnes² of horn were sourced for illegal markets from the 6,661 rhinos reported to have been killed by poachers between 2010 and 2016 (IUCN SSC African Rhino Specialist Group (AfRSG), in litt. to J. Rademeyer, July 2017).

Year	Number of seizures	Reported no. of horns seized	Reported weight of horns (kg)	Total estimated no. of horns	Total estimated weight of horns (kg)
2010	64	167	441.88	222	593.68
2011	67	162	355.07	196	449.08
2012	60	183	480.56	258	688.89
2013	62	176	358.75	288	669.09
2014	71	198	383.00	305	681.73
2015	75	176	331.65	389	923.49
2016	38	110	174.53	319	735.74
2017 (June)	19	105	189.34	172	375.78
Total	456	1277	2714.78	2149	5117.48

Table 1: Number of seizures, estimated number and weights of horns (including horn pieces and carvings) seized, 2010–June 2017 (TRAFFIC’s database)

² Calculated by multiplying the number of rhinos poached by two to calculate how many horns were poached (13,322 horns). The total number of horns (13,322) was then multiplied by the average weight of a horn (2.78 kg).

PRIORITY COUNTRIES

Locations where seizures took place and countries/territories identified as links in the illicit supply chain were assessed (Table 2 and Figure 1). From Table 2 and Figure 1, it is evident that South Africa accounts for the bulk of seizures, followed by China. Viet Nam, Mozambique, Hong Kong SAR and Kenya also reported 15 or more seizures from 2010–June 2017, according to the available data. These six countries/territories (South Africa, China, Viet Nam, Mozambique, Hong Kong SAR and Kenya) account for 79% of all the seizures recorded in the database. Qatar, Thailand, the USA, Zimbabwe, Namibia, Malaysia, Cambodia, the United Arab Emirates, Ethiopia, Nigeria and the European Union (EU) are also significant links in the illegal supply chain (Table 2).

Country	Number of seizures made by	Number of seizures linked to
South Africa	162	33
China	97	33
Viet Nam	42	56
Mozambique	26	20
Hong Kong SAR	19	23
Kenya	15	11
Qatar	2	18
Thailand	9	9
United States of America	10	1
Zimbabwe	8	1
Namibia	6	3
Malaysia	3	6
Cambodia	6	2
United Arab Emirates	1	7
Ethiopia	0	7
Nigeria	0	7
EU Countries*	26	18
Others**	24	31

Table 2: An overview of the number of recorded seizures and the number of seizures that have been linked to a country or territory, 2010–June 2017 (TRAFFIC's database)³

*Belgium, Czech Republic, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Slovakia, Spain, Sweden, UK

**Angola, Botswana, Central African Republic, Democratic Republic of Congo, Cote d'Ivoire, Egypt, Guinea, Indonesia, Japan, Korea, Lao PDR, Malawi, Myanmar, Philippines, Rwanda, Singapore, South Sudan, Swaziland, Switzerland, United Republic of Tanzania, Togo, Turkey, Uganda, Zambia

³ Countries listed in descending order based on the combined total of seizures made by and linked to the country



Figure 1: Map depicting locations and numbers of seizures (in blue) and location and number of seizures that have been linked to a country made elsewhere, either upstream or downstream of where the seizure took place (in orange), 2010–June 2017 (TRAFFIC’s database)⁴

KNOWN SMUGGLING ROUTES

Using TRAFFIC’s database, this assessment has mapped out common smuggling routes used by trafficking networks based on seizures where routes could be shown that originated in Africa. Out of the total 456 seizures assessed, 301 (66%) contained route information. Due to the limitations of seizure data and the inherent difficulties in assessing illicit trade flows, there may be other additional routes which were not revealed in this analysis.

Although it is difficult to infer trade trends using seizure data, the available evidence suggests that, over time, trade routes have become more convoluted as syndicates attempt to evade detection by law enforcement agencies. The movement of illicit rhino horn appears to shift away from direct shipments between source and consumer countries (Figure 2a) and makes use of various transit countries before reaching destinations in China, Viet Nam and Lao PDR (Figure 2b and Figure 2c).

Figures 2a, 2b and 2c examine origin, export, transit and destination countries and displays the known smuggling routes for illegal rhino horn originating from Africa that occurred: a) between 2010–2012, b) between 2013–2015, and c) between 2016–June 2017 (these timeframes were chosen because they correlate with the years assessed during quadrennial CITES Conference of the Parties (CoP)).

The majority of rhino horn shipments originate in southern Africa, particularly South Africa, Mozambique, Zimbabwe and Namibia. Countries or territories that have been used as export or transit points for the illegal rhino horn trade include Cambodia, Ethiopia, the EU, Hong Kong SAR, Indonesia, Kenya, Malaysia, Qatar, Singapore, Thailand and the United Arab Emirates (Figure 2). There have been several seizures of rhino horn along these transit routes since 2016 (see Annex 1). A typical example is a seizure at Phnom Penh International Airport, Cambodia in November 2016 in which a Chinese woman was found to be carrying 35 kg of rhino horn from Johannesburg, South Africa via Singapore (Soumy & Down, 2016). In more recent cases in March 2017, Customs officials at Hong Kong International Airport arrested a passenger who had travelled from Maputo in Mozambique via Addis Ababa, Ethiopia, carrying seven kilograms of rhino horn (Anon, 2017a), and Thai authorities discovered 21 rhino horns in luggage that had arrived on an Ethiopian Airlines flight from Addis Ababa (Anon, 2017b).

⁴ Only countries where the number of seizures or links were greater than 4 were records numbered in the map

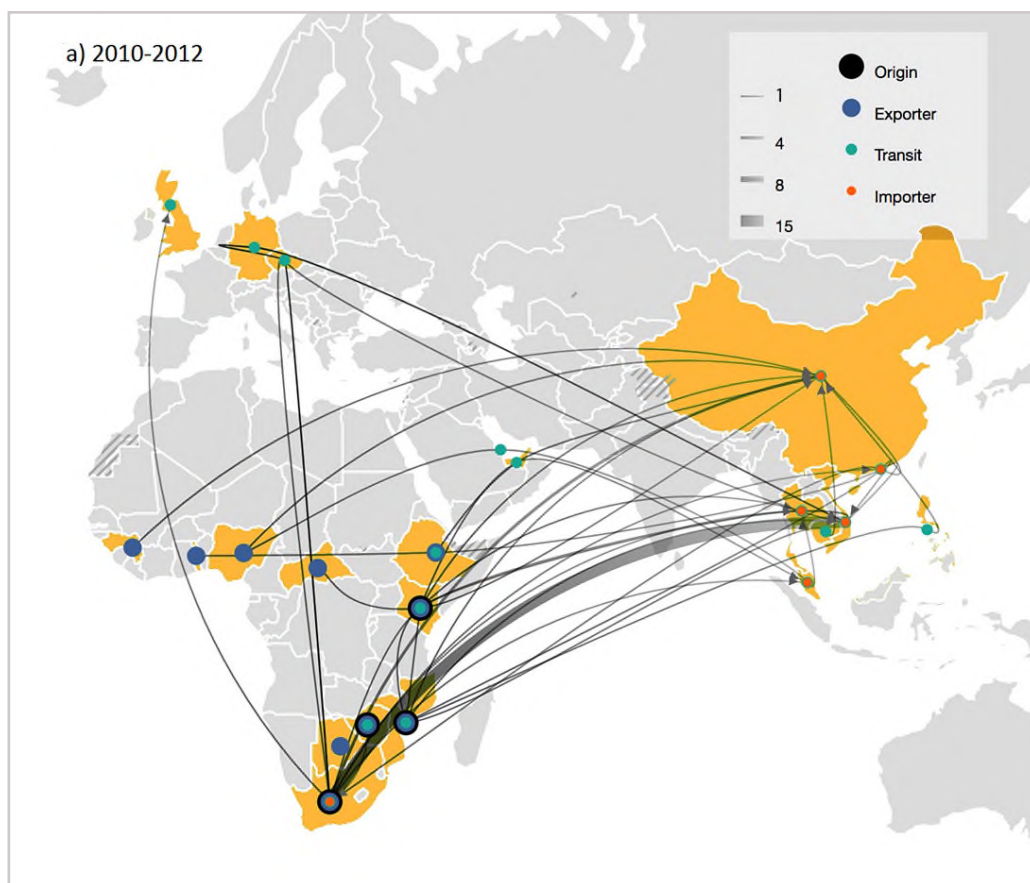


Figure 2a: Known trafficking routes for illegal rhino horn originating in Africa, 2010–2012 (TRAFFIC’s database)⁵

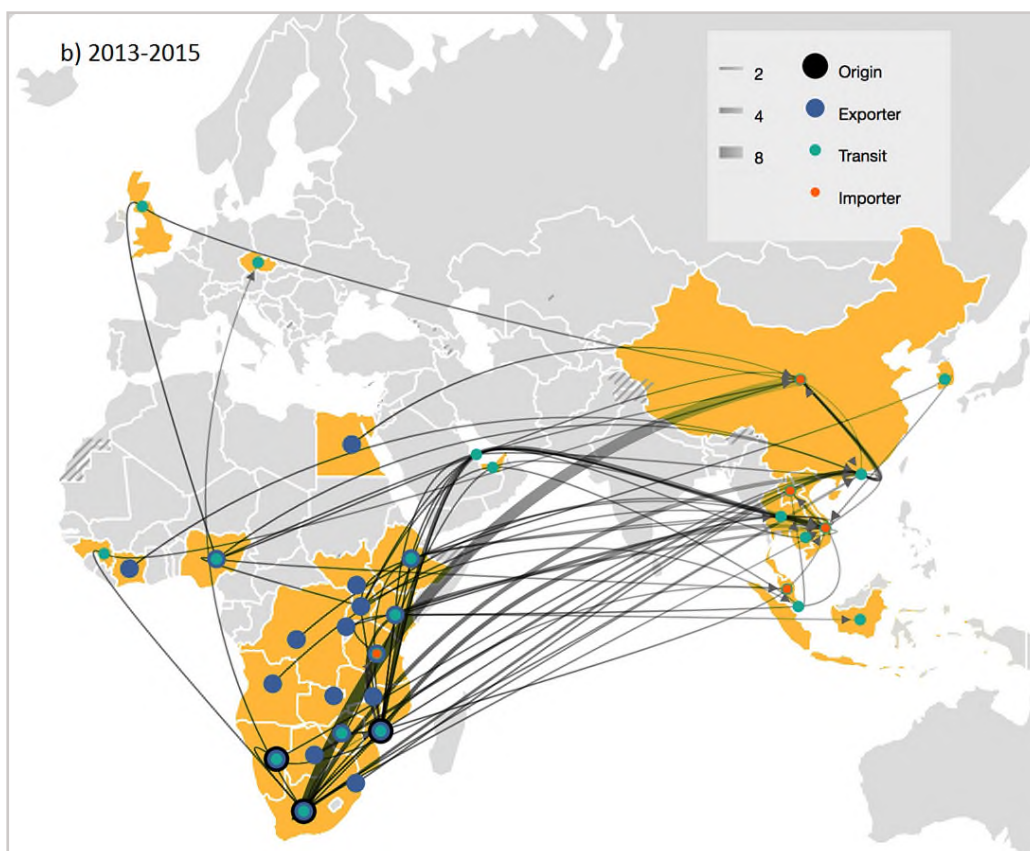


Figure 2b: Known trafficking routes for illegal rhino horn originating in Africa, 2013–2015 (TRAFFIC’s database)

⁵ Lines indicate flight paths used by traffickers that ended in a seizure. The thickness of the line is indicative of the number of times a flight path was used.

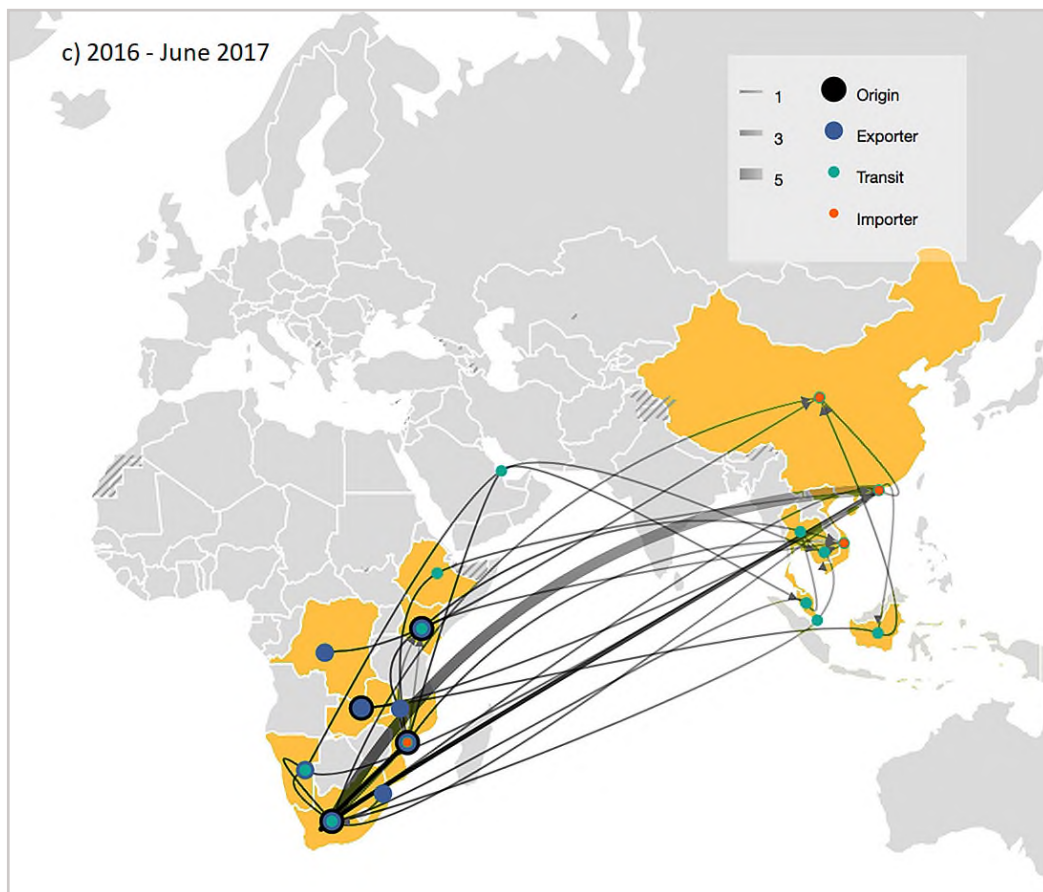


Figure 2c: Known trafficking routes for illegal rhino horn originating in Africa, 2016–June 2017 (TRAFFIC’s database)⁶

Several identified transit countries are also considered hubs for illegal wildlife trade in a wide variety of flora and fauna. Malaysia, for example, continues to serve as a regional hub for wildlife traffickers seeking to smuggle rhino horns, ivory, timber, reptiles and other mammals (Krishnasamy, 2016; UNODC, 2016). Singapore has long served as an important transit State for elephant ivory (Anon, 2016a) and, between 2013 and 2015, more than eight tonnes of illegal ivory was seized within its borders (T. Milliken, *pers. comms.*, July 2017). The Ministry of Environment and Forestry in Indonesia reported that authorities confiscated 6,247 animals in 2016 alone (Siniwi, 2017). The majority were reptiles, followed by birds, primates and other mammals. Lao PDR, a landlocked country bordered by China, Myanmar, Thailand, Cambodia and Viet Nam has also emerged in recent years as a key supplier of rhino horn and horn products to the Chinese market. Lao PDR has been implicated as the destination in rhino horn seizures made in transit countries and rhino horns obtained in sham “pseudo-hunts” in South Africa (Rademeyer, 2012; Milliken & Shaw, 2012; Vigne, 2013; Anon, 2015a; Davies & Holmes, 2016; Sherwell, 2016).

All maps in Figure 2 show active trade to the identified major consumer countries of Viet Nam and China. Viet Nam, one of the largest end-use markets for rhino horn (Emslie *et al.*, 2016; Milliken & Shaw, 2012), also acts as a transit country. There have been at least ten incidents in which Viet Nam has been identified as a transit point for horns destined for China. Study of Vietnamese markets by Liu (2015) and the Wildlife Justice Commission’s investigation into the village of Nhi Khe in Viet Nam confirmed that Chinese citizens are significant buyers of rhino horn products manufactured in Viet Nam (Wildlife Justice Commission, 2016).

⁶ On maps, only countries’ continuous land areas where seizures took place are coloured, not other territories. For example, seizures in Malaysia only occurred in Peninsular Malaysia, not Sabah and Sarawak, which remain grey

UNDER THE RADAR

An analysis of the methods of transport evident in TRAFFIC's database is displayed in Figure 3. Based on the available information, transport by air is the most commonly used method when trafficking rhino horn rapidly from source countries to consumers. At least two tonnes of rhino horn has been seized at airports, with approximately 24% of cases recorded in the TRAFFIC database involving the simultaneous trafficking of other wildlife products (mostly alongside ivory).

Countries such as Ethiopia and Kenya play a pivotal role as transit countries in Africa as they have direct links to Asian countries through their international ports and airlines. Kenya Airways, for example, has direct flights to Viet Nam. Addis Ababa Bole International Airport in Ethiopia and Jomo Kenyatta International Airport in Kenya also rank in the top seven busiest airports in Africa, having handled approximately 8.5 million and 7.1 million passengers respectively in 2016 (Anon, 2017c; Mwaniki, 2017). Addis Ababa Bole International Airport is currently extending its passenger capacity to accommodate as many as 22 million people per year and construction is expected to be completed in January 2018 (Anon, 2017c). South Africa—primarily a country of origin—also plays an important transit role for horns originating from other countries in southern Africa. Similarly, airlines in the United Arab Emirates and Qatar are also used as they link various African and Asian countries and their airports can handle millions of passengers each year.

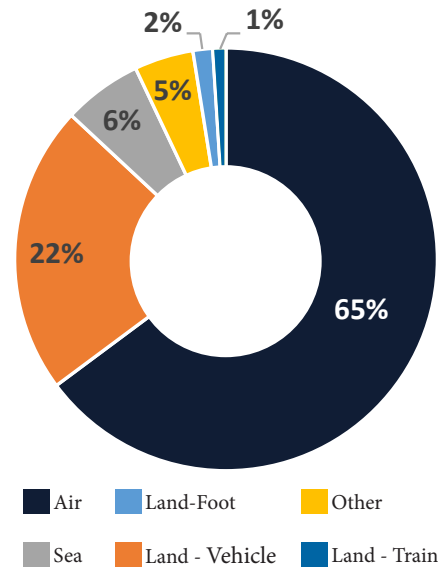


Figure 3: Known methods of transport for the illegal trade in African rhino horn, 2010–June 2017 (TRAFFIC's database)⁷

Overland routes in vehicles also play a significant role in the trafficking of rhino horn (Figure 3). Once a rhino has been killed and the poachers have exited a national park or private reserve in Africa, horns are rapidly moved by transporters to major centres, using taxis, cars, buses—even ambulances in some cases—and sold to middlemen (Milliken & Shaw, 2012; Rademeyer, 2012). Consequently, most of the seizures documented where rhino horn was discovered in a vehicle occurred in Mozambique and South Africa. For example, on 12 April 2017, four alleged poachers were apprehended at the Mahamba border post between South Africa and Swaziland (Parker, 2017). Two rhino horns were found hidden in the engine compartment of the vehicle in which they were travelling (Figure 4).

In Asia, rhino horns have also been found in vehicles crossing borders between Viet Nam and China. In one example, Hekou Forest Police in Yunnan intercepted a motorcycle attempting to pass by the Hekou checkpoint from Viet Nam into China. They seized four pieces of White Rhino horn along with 15 Tiger teeth, four Tiger *Panthera tigris* claws and four Leopard *Panthera pardus* teeth. Two Vietnamese nationals were arrested (Xu and Zhu, 2015).



Figure 4: Rhino horns found in the engine compartment of a vehicle travelling through Mahamba border between South Africa and Swaziland

⁷Based on the number of seizure incidents

Analysis of seizures involving the transport of rhino horn by sea revealed overlaps with other forms of wildlife trafficking. At least 75% of these recorded seizures involved other wildlife products. In many instances, substantial quantities of ivory were seized alongside rhino horns. In other cases, rhino horns have been found in consignments of wildlife derivatives alongside leopard skins, pangolin scales and teeth from African big cats. On the 19 May 2015, authorities at the Port of Singapore seized four rhino horns alongside approximately 1,783 pieces of raw ivory and 22 teeth believed to be from African big cats. The consignment, destined for Viet Nam, was hidden in two 20-foot containers that had originated in Mombasa, Kenya (Anon, 2015b). Another seizure of 142 kg of rhino horn and 593 kg of ivory occurred at Tien Sa port in Da Nang, Viet Nam in August 2015. Two containers declared as containing “marble blocks” arrived from Mozambique when police intercepted the shipment which was believed to be destined for Hai Phong port, Viet Nam (Anon, 2015c; Anon, 2015d).

Further seizure analysis of rhino horn shipments recorded in the database revealed the average weight of a rhino horn seizure was larger when the contraband was trafficked by sea alongside other wildlife products than by air. The average weight of a rhino horn seizure where the transport was by sea was 34 kg whereas the average weight of a rhino horn seizure at airports was 13 kg.

AIRPORT HOTSPOTS

An analysis of the total number of seizures that occurred while rhino horn was in transit from one point to another revealed that 68% of seizures occurred at airports. OR Tambo International Airport—Africa’s largest airport and a key hub for international and domestic travel from Johannesburg—accounted for the bulk (86%) of rhino horn seizures reported at South African airports. At least 26 rhino horn seizures occurred there between 2010 and June 2017 (Figure 5). Another four rhino horn seizures occurred at Cape Town International Airport and the small Wonderboom Airport in South Africa’s capital, Pretoria. At Jomo Kenyatta International Airport in Kenya, a key transit point for horn being smuggled through East Africa to Asia, a total of four seizures were recorded between 2010 and June 2017 (Figure 5).

In Asia, Viet Nam’s Noi Bai International Airport in Hanoi and Tan Son Nhat International Airport in Ho Chi Minh City—key links in the illicit supply chain—have recorded 16 and 12 seizures, respectively (Figure 5). Hong Kong International Airport and Beijing Capital International Airport in China have also reported more than 10 seizures of rhino horn since 2010. At least seven seizures of rhino horn have been recorded at Suvarnabhumi Airport in Bangkok, Thailand.



Figure 5: Number of seizures recorded at airports, 2010–June 2017 (TRAFFIC’s database)

IN PLAIN SIGHT

The smuggling methods employed by rhino horn traffickers are infinitely versatile, limited only by imagination and opportunity. As new smuggling methods are uncovered by enforcement agencies, trafficking networks quickly adapt and refine their tactics, finding new methods of concealment and new weaknesses to exploit. Their efforts are sometimes crude; wrapping horns in aluminium foil, smearing them with toothpaste or shampoo to hide the stench of decay, or coating them in wax (Anon, 2011, Bloch, 2017; South African Revenue Service (SARS), 2017). Over time, more sophisticated methods have emerged; horns disguised as curios and toys, hidden in bags of cashew nuts and consignments of wood, or concealed in imitation electronic and machine parts (Anon, 2012; Anon, 2016b; Czech Republic CITES Management Authority (MA), 2016). Circuitous transit routes, luggage drops and exchanges are used to confuse the trail (Utermohlen & Baine, 2017).

In some instances, Customs officials, airline staff and airport police are bribed to facilitate the transfers, and false documents are used to mask illegal shipments. Traffickers also take advantage of capacity constraints at airports, sometimes flying at peak times to take advantage of the rush of passengers, or at a time when they think enforcement officers will be distracted. In one well-known incident, two Vietnamese traffickers were arrested when they tried to smuggle 18 rhino horns through OR Tambo International Airport, 30 minutes before the start of the 2010 FIFA World Cup opening ceremony in South Africa. They had hoped that Customs officials would be distracted by the spectacle on television (Al Jazeera Investigations, 2016; Hübschle, 2016; Rademeyer, 2012; Rademeyer, 2016; Utermohlen & Baine, 2017).

Below are some examples of known smuggling methods, drawn from open source information.

- **14 November 2011** – Hong Kong SAR Customs officials seized 33 rhino horns and carved ivory products discovered in a shipping container. The contraband was found within 63 packages of “scrap plastic” on a vessel from Cape Town, South Africa (Figure 6). The horns were wrapped in aluminium foil, newspaper and plastic in an effort to disguise them (Anon, 2011). Similar cases continue to be discovered. In May 2017, for instance, the South African Revenue Service seized 7.035 kg of rhino horn wrapped in foil at OR Tambo International Airport (SARS, 2017).
- **19 December 2013** – Two rhino horns were confiscated at Vaclav Havel Airport in Prague, the capital of the Czech Republic, hidden in a shipment declared as “electronic equipment” (Figure 7). The horns had been cast in resin and sealed inside an electric coil (Czech Republic CITES MA, 2016).



Figure 6: Rhino horn seized in Hong Kong SAR, 14 November 2011

© Hong Kong Customs & Excise Department, 2011



© Czech Environmental Inspectorate, 2013

Figure 7: Czech investigators cut open a consignment to reveal rhino horn concealed within a coil of electric wire

- **14 May 2016** – Customs officials seized five pieces of rhino horn contained in an express air parcel being processed at Hong Kong International Airport (Figure 8). The parcels were declared as “resin crafts” originating from South Africa (Anon, 2016b).



Figure 8: Pieces of rhino horn described on a manifest as “resin crafts”

- **30 March 2015** – Customs officials working at Milan-Malpensa Airport in Milano, Italy found two rhino horns hidden inside wooden Buddha statues during an inspection of luggage belonging to a Chinese national travelling to Beijing (Robin Des Bois, 2015).
- **March 2015** – A Vietnamese citizen was arrested at Tan Son Nhat Airport in Ho Chi Minh City after he was found with 1.39 kg of rhino horn. The horn had been cut into small pieces and hidden in lobster heads, which were then kept in a refrigerated container (Huy, 2015).
- **27 July 2015** – Hong Kong SAR Customs officials seized 10 pieces of rhino horn that arrived in three separate air parcels on different flights from Mozambique on the 26 and 27 July 2015 (Figure 9). Upon further inspection, the 10 pieces represented two rhino horns (Anon, 2015e).



Figure 9: Two rhino horns cut into 10 pieces were seized by Hong Kong SAR Customs in three separate parcels travelling on different flights on 26 and 27 July 2015 from Mozambique

- **27 April 2017** – DHL Mozambique alerted police to a suspicious package bound for Viet Nam. It contained three painted statues fixed to solid bases (Figure 10). Upon further inspection, the bases of each of the statues—weighing 1.3 kg in total—were found to be made from rhino horn (Figure 10).

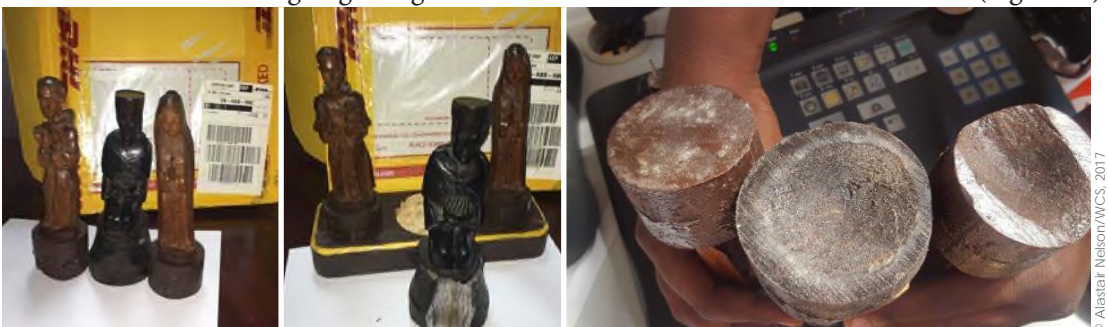


Figure 10: Pieces of rhino horn painted and disguised as the bases of three statues



AN EMERGING TREND

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Recent seizures in South Africa suggest that Asian trafficking networks operating within the country have begun fabricating beads from rhino horn and packaging offcuts, shavings and rhino horn powder in bags in an apparent effort to evade detection and supply manufactured goods to consumers in Asia.

In an interview in July 2017, Colonel Johan Jooste, national commander of the Endangered Species Section in South Africa's Directorate for Priority Crime Investigation (DPCI) said:

"It is a growing problem. The syndicates no longer want to export whole horns. They have begun cutting them up into what they call 'disks' and large beads in line with demand on the market side and in order to avoid detection here. The methods have changed. Initially, horns were being concealed in wine boxes, or between sweets and clothes, or inside statues and pottery; things like that. Now they've learnt from arrests that have disrupted their activities that it works out better for them to work the horn here and then take it out of the country. It makes it much easier to avoid detection. We've seen this with rhino horn transiting from Swaziland and Mozambique where [smaller pieces] have been exported with wine corks. We need to be vigilant and it is important that people know what these things look like and are able to detect them, because that aids enforcement." (Interview with Colonel J. Jooste, 7 July 2017).

On 12 June 2017, during a raid on a house in Germiston, east of Johannesburg, police discovered a workshop for processing rhino horn and seized a quantity of large beads, some of them polished. Other pieces of horn had been cut into cylindrical shapes (Figure 11). Among the tools seized were a bandsaw and an angle grinder. Two blue plastic bags containing a large quantity of what appeared to be rhino horn powder and offcuts was also found (Figure 12), along with a cooler box containing packages of frozen bones, possibly *Lion Panthera Leo* bones, and 47 rounds of 7.65mm ammunition. Two Chinese nationals, aged 30 and 40, and a Thai woman, aged 48, were arrested (Hart, 2017).



© South African Police Service, 2017

Figure 11: Suspected rhino horn beads and carvings found in a house in Germiston, South Africa



Figure 12: Small pieces and powder of suspected rhino horn seized in a house in Germiston, South Africa

During a seizure on 22 November 2016 in Cyrildene, a suburb in eastern Johannesburg that has a large Chinese expatriate community, police discovered a bag of rhino horn powder and offcuts, along with a large quantity of ivory bangles and carvings, pangolin scales, sea cucumbers, dried seahorses, abalone, and lion bones and teeth (Figure 13). Two suspects were arrested.



Figure 13: Rhino horn powder seized in Cyrildene, South Africa

According to Dr Cindy Harper, the director of the University of Pretoria's Veterinary Genetics Laboratory which has conducted DNA profiling on rhino horns seized by law enforcement agencies, there has been a marked increase in the number of rhino horn beads, necklaces, pendants, powder and horns cut into sections that have been submitted to them for analysis over the past year.

"The powder is usually a mixture from different rhino horn sources, both Black and White, that have been thrown together in a bag. We have also received a lot of bracelets and beads, although quite a lot also turn out to be bovine fakes. The balls of rhino horn used in necklaces are usually smaller and a more diverse colour than bovine fakes. Apparently, the black [coloured] rhino horn beads are also more valuable than the paler ones. It is difficult to distinguish [between what is real and what is fake] if you don't know what to look for. The balls we've seen are perfectly even, which suggests they are machine-made." (Interview with Dr C. Harper, 1 June 2017)

Studies conducted by Liu (2015) and the Wildlife Justice Commission (2016) attest to these findings as many of the rhino horn products found for sale in Vietnamese markets were in the form of carved items, such as beads, necklaces, bangles and other miscellaneous items such as bowls and cups (Figure 14). A recent paper by Gao *et al.* (2016), argued that the arts and antique market for rhino horn products, such as bowls, libation cups, jewellery and other carved items, has been overlooked and plays a significant role in rhino horn trade, particularly among Chinese nationals. The production and sale of powdered rhino horn is thought to be a by-product of the carving process which is then sold to be used in health-tonics (Wildlife Justice Commission, 2016).



Figure 14: Raw and carved rhino horn items for sale in Viet Nam including beads, bangles, necklaces, cups and bowls

CONCLUSION

Criminal syndicates are resilient, adaptive and adept at exploiting law enforcement weaknesses and legal loopholes to smuggle rhino horn across multiple countries and legal jurisdictions. As law enforcement efforts intensify, routes and smuggling methods become increasingly diversified and complex.

This assessment provides an overview of some of the innovative techniques that rhino horn traffickers have used to avoid interception. There is worrying new evidence that some Chinese criminal syndicates operating in South Africa have begun processing rhino horn into “disks”, beads and powder to evade detection and interception. If the practice becomes more widespread, it will pose significant challenges to already overstretched law enforcement agencies.

RECOMMENDATIONS

Evolving trafficking routes and smuggling methods pose a significant challenge to law enforcement agencies. Smuggling networks can adapt quickly to new pressures, testing out and exploiting enforcement gaps and loopholes. To counteract the transnational criminal networks trafficking rhino horn, several recommendations should be considered.

RANGE STATES:

- In order to respond rapidly and effectively to the emerging trends and new techniques identified in this assessment, it is essential that rhino range States in Africa implement integrated law enforcement strategies to address wildlife trafficking. For example, as the country bearing the brunt of rhino poaching in Africa, South Africa should approve and implement its National Integrated Strategy to Combat Wildlife Trafficking (NISCWT) as a matter of urgency. A copy of the proposed strategy, which was drafted in early 2016, but has yet to be finalized and approved by government, can be downloaded here: <http://pmg.org.za/files/170530NISCWT.pdf>. The strategy calls for the establishment of a nationally centralized and co-ordinated intelligence structure and database for sharing of intelligence on wildlife trafficking. It aims to reduce bureaucratic delays and national, regional and international obstacles in the “current fragmented approach towards combating wildlife trafficking” and argues that wildlife trafficking has evolved into “a serious organized crime and national security threat in South Africa, which requires focused law enforcement”. It also makes provision for increased anti-corruption investigations linked to wildlife trafficking.

DESTINATION COUNTRIES:

- China, Viet Nam and Lao PDR should expand and improve law enforcement activities at airports, land borders and identified cities, towns, villages and market places where rhino horn is widely traded.
- In conjunction with the enforcement and implementation of strong regulatory and policy frameworks, China, Viet Nam and Lao PDR should increase behavioural change communications and scale up demand reduction initiatives in line with their obligations under CITES. This should cover several species simultaneously, based on the range of wildlife commodities discovered in single shipments and growing evidence of cross-over between the illicit rhino horn trade and other wildlife products. These initiatives should follow the approach laid out by the OECD's document "Powers of Persuasion", which can be downloaded here: [https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/HLRF/TFCIT/RD\(2017\)11&docLanguage=En](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/HLRF/TFCIT/RD(2017)11&docLanguage=En)

ORIGIN, TRANSIT & DESTINATION COUNTRIES:

- Data on seizures, new routes and smuggling methods should be regularly shared between international, regional and national wildlife law enforcement and border control agencies to aid detection and interception of rhino horn shipments. This could be facilitated by the use of AFRICA-TWIX, an online tool developed to aid the exchange of information and co-operation between law enforcement agencies. The use of the tool should be extended and developed for other regions including southern Africa and Asia. Structures like INTERPOL, the UNODC, the ICCWC, the SADC Wildlife Crime Prevention and Co-ordination Unit, the Lusaka Agreement Task Force, the ASEAN-WEN, the Green Customs Initiative and the WCO can also play a vital role in the dissemination of such information.
- Enforcement agencies in origin, transit and destination countries where seizures occur should be urged to compile accurate seizure records, track and report cases stemming from seizures and gather information on smuggling typologies for distribution within law enforcement networks and for training purposes.
- It is vital that investigations do not stop at seizures of illicit wildlife products. Seizures alone are not barometers of law enforcement success. Rather, they should be regarded as an initial step in broader, targeted investigations focusing on the networks and key individuals facilitating trafficking of rhino horn and other wildlife products. A far greater emphasis needs to be placed on investigations that lead to arrests, prosecutions and convictions as measures of success and a means of disrupting transnational criminal syndicates.
- Law enforcement agencies should make use of all applicable legislation (not only relevant wildlife legislation) and legal instruments to prosecute criminal syndicates, including the use of money laundering, asset forfeiture, tax evasion and fraud laws.
- Airline staff and airport employees should be made aware of common and emerging smuggling methods (such as rhino horn disks and bracelets) through frequent training courses and regular dissemination of information to airlines, airports and organizations representing airline and airport staff.
- A wider, ongoing study of smuggling typologies, financial flows, modus operandi and evolving trade routes should be conducted to help monitor and identify new and emerging threats as syndicates continually adapt to stronger enforcement and seek out new loopholes to exploit.
- Increased detection measures and resources should be allocated to land, sea and air borders identified as trafficking hotspots and these resources should be adaptively managed to counteract emerging smuggling routes and methods. These detection measures may include the use of specialized wildlife sniffer dogs, the development of improved screening technologies and increased human resources.

- Law enforcement agencies in source, transit and consumer countries should be encouraged to develop and implement effective wildlife trafficking enforcement strategies focusing on known hotspots and pursue targeted investigations of key figures involved in the illicit trade with the aim of increasing arrests, prosecutions and convictions.
- Key origin, transit and destination countries such as China, Kenya, Mozambique, Namibia, South Africa, Tanzania, Viet Nam and Zimbabwe should be encouraged to increase levels of law enforcement co-operation and make full use of existing international, regional and national law enforcement mechanisms, Memorandums of Understanding (MoUs) and Mutual Legal Assistance agreements to further investigations into transnational criminal networks.
- Countries party to CITES need to effectively implement the relevant resolutions on conservation and trade in African and Asian rhinoceroses adopted at CITES CoP17, for example, Resolution Conf. 9.14 (Rev. CoP17)—<https://cites.org/sites/default/files/document/E-Res-09-14-R17.pdf>. These include legislation facilitating specialized investigations, the use of covert tactics, controlled deliveries and asset forfeiture as tools in targeted investigations. There needs to be a mechanism for monitoring progress on implementation of these resolutions, identifying any gaps and weaknesses and ensuring mitigating measures are taken. In addition, technical and financial assistance, where necessary, must be provided to the relevant countries to support the effective implementation of these resolutions.
- Wildlife crime combatting strategies should place an emphasis on combatting corruption as fundamental to efforts to disrupt trafficking networks. Corruption aids and abets wildlife trafficking networks and shields perpetrators from criminal investigations.
- Exchange programmes involving police, prosecutors and Customs officials in source, transit and destination countries—particularly South Africa, Mozambique, Kenya, China and Viet Nam—should be encouraged to facilitate better global co-operation, transfer critical skills and enhance exposure to the law enforcement challenges involved in disrupting transnational syndicates that operate across multiple legal jurisdictions.

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ANNEX I:

NOTABLE SEIZURES REPORTED BETWEEN JULY 2016 AND JUNE 2017

1. 31 July 2016 – Vietnamese Customs seized one rhino horn cut into four pieces and hidden in milk powder cans at Tan Son Nhat International Airport. The pieces were found in the personal luggage of a 42-year old Vietnamese man returning from Africa.⁸
2. 14 August 2016 – Eight pieces of rhino horn, weighing 4.38 kg, were seized at Phnom Penh International Airport, Cambodia from a Chinese national who had arrived on a Qatar Airways flight from Namibia, transiting through Doha.⁹
3. 24 September 2016 – A Chinese national was arrested on the 24 September 2016 at OR Tambo International Airport while trying to board a flight to Hong Kong SAR. Three rhino horns weighing 9.4 kg were found in his luggage.¹⁰
4. 1 November 2016 – A Chinese woman carrying 35 kg of cut rhino horn was arrested at Phnom Penh International Airport. The woman had flown from Johannesburg with a stopover in Singapore before arriving in Cambodia.¹¹
5. 23 November 2016 – South African police arrested a Chinese man with 18 rhino horns in his luggage at OR Tambo International Airport. The man was in transit from Namibia and was taking a South African Airways flight to Hong Kong SAR.¹²
6. 30 December 2016 – Vietnamese Customs officials at Noi Bai International Airport seized an illegal shipment of 50 kg of rhino horn on a flight from Kenya.¹³
7. 25 February 2017 – Two Chinese nationals were arrested at King Mswati III International Airport, Swaziland when the boxes of cellar cask wine they were carrying were found to have 24 pieces of rhino horn. They were due to travel to South Africa.¹⁴
8. 8 March 2017 – Customs officials at Hong Kong International Airport arrested a passenger travelling from Maputo who had transited through Addis Ababa carrying 7 kg of rhino horn in his check-in luggage.¹⁵
9. 10 March 2017 – Thai authorities at Suvarnabhumi Airport, Bangkok discovered 21 rhino horns in luggage that had arrived on an Ethiopian airlines flight from Addis Ababa.¹⁶
10. 13 March 2017 – Vietnamese police officers seized two suitcases at Hanoi's Noi Bai International Airport after scanning the luggage to discover both filled with rhino horns. The two pieces of luggage housed 57 kg and 61 kg of rhino horn and had been flown in from Malawi on Kenya Airways via Nairobi.¹⁷

⁸ Thu, L. and Loan, N. (2016). Arrests for import of 4 rhinoceros horns hidden in milk powder cans. Customs News (VN). <http://customsnews.vn/arrests-for-import-of-4-rhinoceros-horns-hidden-in-milk-powder-cans-562.html>. 1 August.

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¹² Anon. (2016). South African police nab Chinese man travelling from Namibia with 18 rhino horns. The Namibian (NA). <http://www.namibian.com.na/158574/archive-read/South-African-police-nab-Chinese-man-travelling-from-Namibia-with-18-rhino-horns>. 24 November.

¹³ Anon. (2016). 50kg of rhino horns shipped from Kenya seized in Hanoi airport. Tuoi Tre News (VN). <http://tuoitrenews.vn/society/38802/50kg-of-rhino-horns-shipped-from-kenya-seized-in-hanoi-airport>. 30 December.

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¹⁶ Anon. (2017). Rhino horns worth \$5m seized in Thailand off flight from Ethiopia. BBC (UK). <http://www.bbc.com/news/world-asia-39268084>. 14 March.

¹⁷ Anon. (2017). Kenya's airport officials grilled over rhino horns seized in Vietnam. Xinhua News (CN). http://news.xinhuanet.com/english/2017-03/22/c_136146687.htm. 22 March.

11. 7 April 2017 – Malaysian authorities seized 18 rhino horns at Kuala Lumpur International Airport that had been shipped from Mozambique via Qatar. The horns were found in a cargo warehouse and had been shipped using false documents and declared as “*obra de arte*” or “works of art”.¹⁸
12. 17 May 2017 – Customs officials at OR Tambo International Airport seized a parcel of eight pieces of rhino horn concealed amongst packets of sweets and chocolates destined for Hong Kong SAR via Doha, Qatar.¹⁹ The consignment was declared as “tea bags”.
13. 22 May 2017 – Customs officials at OR Tambo International Airport intercepted a parcel containing nine rhino horns destined for Hong Kong SAR.²⁰
14. 10 June 2017 – Hong Kong SAR Customs officials seized 10.5 kg of rhino horn. The 23-year-old courier had arrived at Hong Kong International Airport on a flight from Jakarta, Indonesia.²¹
15. 11 June 2017 – After subjecting two passengers’ luggage for re-examination at OR Tambo International Airport, Customs officials found ten rhino horns in two bags. The couriers had already boarded a flight to Istanbul when they were removed and arrested. Their final destination was believed to be Hong Kong SAR.²²
16. 14 June 2017 – Customs officials at OR Tambo International Airport seized 28,7 kg of rhino horn found in a Vietnamese national’s luggage. The suspect was arrested.²³

¹⁸ Latiff, R. (2017). Malaysia seizes \$3.1 million worth of rhino horns at airport. Reuters (US). <http://www.reuters.com/article/us-malaysia-trafficking-wildlife-idUSKBN17C0I3>. 10 April.

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²² Bloch, S. (2017). 2 Chinese nationals appear in court on rhino horn charges. News24 (ZA). <http://www.news24.com/SouthAfrica/News/2-chinese-nationals-appear-in-court-on-rhino-horn-charges-20170614>. 14 June.

²³ Bloch, S. (2017). Rhino horns worth millions seized at OR Tambo. News24 (ZA). <http://www.news24.com/SouthAfrica/News/rhino-horns-worth-millions-seized-at-or-tambo-20170615>. 15 June.



TRAFFIC, the wildlife trade monitoring network, is the leading non-governmental organization working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

For further information contact:

TRAFFIC

David Attenborough Building

Pembroke Street

Cambridge

CB2 3QZ

UK

Telephone: (44) 1223 277427

E-mail: traffic@traffic.org

*UK Registered Charity No. 1076722,
Registered Limited Company No. 3785518.*

