



# HEALTH TO WEALTH

*On the trail of Asia's shifting rhino-horn market*

by Karl Ammann

Photographs and video stills by Karl Ammann and Phillip Hattingh.





▲ Karl Ammann is a conservationist and wildlife photographer.



As long as consumers want rhino horn, South Africa will lose its rhinos to the slow, agonising blows of the poacher's machete. In this extensive investigation, undercover Swiss filmmaker **Karl Ammann** finds that black-market sentiments have shifted from health to wealth – and that this might be exacting a demand that is bigger than the 1 000-plus rhino poached in South Africa each year.

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**In this extensive investigation, undercover Swiss filmmaker Karl Ammann finds that black-market sentiments have shifted from health to wealth.**

**E**conomists and conservationists have written reports dealing with the demand-and-supply characteristics of the rhino-horn trade. Although the picture of supply, and how this chain works, seems clear, one might consider the demand side is a lot less clear, as well as how the end-consumer drives it.

My research with South African filmmaker Phil Hattingh for *The Hanoi Connection*, our feature-length 2018 documentary on the driving forces behind the rhino massacre, kicked off about six years ago by scouting for products in traditional Chinese/Vietnamese medicine shops in Vietnam. To secure the acceptance we needed, we established ourselves as customers over several trips to Hanoi, the capital, by buying samples of powdered rhino horn or small pieces of horn cut from bigger chunks.

When a chopped piece flew into the street while a dealer was sawing so-called rhino horn with heavy equipment on her shop pavement, it became clear that customers were probably being deceived by all kinds of bogus products purporting to be rhino material. After all, the real-deal product would not be

treated so carelessly – nor sold to us at the price we paid for the flying fragment.

Outside Hanoi, we filmed a production facility for fake horns and faux hunting trophies, which included adapted water-buffalo horns. Then we documented thousands of fake horns for sale at a specialised market for wildlife artefacts in Guangzhou, China. >>



◀ Traditional HEALTH (Chinese Traditional Medicine Shops)



◀ A wide range of horns are imported from various parts of the globe and many are worked into 'rhino-horn' products.



Approaching several wildlife-oriented genetics laboratories in 2014 with samples from these initial trips turned into something of a challenge: most agreed to analyse them for us – but they were concerned about publishing the data without the necessary import and export permits.

The year before, the parties to the Convention on International Trade in Endangered Species (CITES) had decided in Bangkok that seized samples of rhino horn or horn products should be handed directly to designated laboratories. It had become clear that there was little, if any, secure storage for rhino horn in supply-and-consumer destinations. This seemed especially true for Vietnamese officials, who seemed to think that they had good reason to keep the exchange of samples for enforcement purposes to a minimum. In one incident, the officials supposedly tried transporting samples to South Africa. These were then 'stolen' en route.

The central issue with our approach to laboratories, of course, was that we as filmmakers and investigators were not party to CITES. As such, trying to source export and import documents, and filling them in accurately, would have been a complete waste of time – we could not even positively identify the products until the DNA results were in.

Testing fake tiger bones for our 2016 documentary *The Tiger Mafia* helped place things in some perspective: A Swiss-based university lab got a legal opinion stating that it was not infringing on any law if it was doing analyses to determine a particular species; or, indeed, if any such samples turned out to be from CITES-listed species.

We were aware that we faced another challenge here: showing our hand too early through releasing our samples to laboratories or the corresponding results might have jeopardised future investigations.



◀ A traditional Chinese medicine dealer in Hanoi, Vietnam, hacks off rhino-horn portions on her shop pavement.

“A Swiss-based university lab got a legal opinion stating that it was not infringing on any law if it was doing analyses to determine a particular species; or, indeed, if any such samples turned out to be from CITES-listed species.”

#### DNA testing!

For this stage of our demand-side investigations, the Veterinary Genetics Laboratory at the University of Pretoria would prevail as a testing solution. Set up and developed by Dr Cindy Harper and her team as a tool to aid enforcement, the laboratory's Rhino DNA Indexing System (RhoDIS) has a mission enshrined in the South African Biodiversity Act. First used in a rhino-poaching case in 2010, RhoDIS analyses samples of as many dead and live rhinos as possible. DNA is continually collected from southern and East African range states and tested. The system's database today includes 100,000 samples of more than 20,000 individual rhino.

Our samples were delivered to the lab by various parties travelling to South Africa. If any CITES permitting issues were to arise, we could legitimately argue that we were not sure exactly what we had acquired.

As it turned out, the RhoDIS test results showed that roughly 90% of the fragment and powder samples collected from Traditional Chinese medicine stores in Hanoi did not even remotely involve rhino horn. Instead, what we had was saiga antelope (a critically endangered antelope remaining in southeast Europe and central Asia), kudu, sheep and a whole lot of water-buffalo horn.



▲ The DNA testing lab in Pretoria at the Onderstepoort Veterinary Genetics Laboratory at the University of Pretoria, which hosts the RhoDIS database.

**Our assessment?** Trading in fake, fragmented products of a few grams each was particularly alluring to swindlers – by attracting a less powerful, less affluent and less knowledgeable clientele.

Traders of authentic rhino-horn products also seemed to create ever more downmarket products to get this less discriminating segment to come on board. >>



◀ Libation cups carved on a rhino horn, is very rare and exotic, and are increasingly popular with wealthy individuals.

**Next,** we targeted jewellery and artefact stores in China, Myanmar, Laos and Vietnam's upmarket tourist areas – which flogged a staggering range of wildlife products – and we discovered that most of the real rhino horns marketed in these demand countries now seemed to end up as luxury items.

Dealers would tell us that buyers blowing the equivalent of hundreds of thousands of US dollars for raw horn would often bring their own experts to check the quality of the product. Trying to cheat buyers at that level would certainly be a risky business.

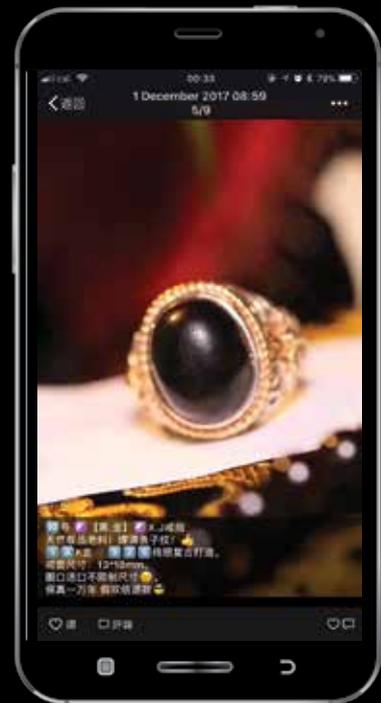
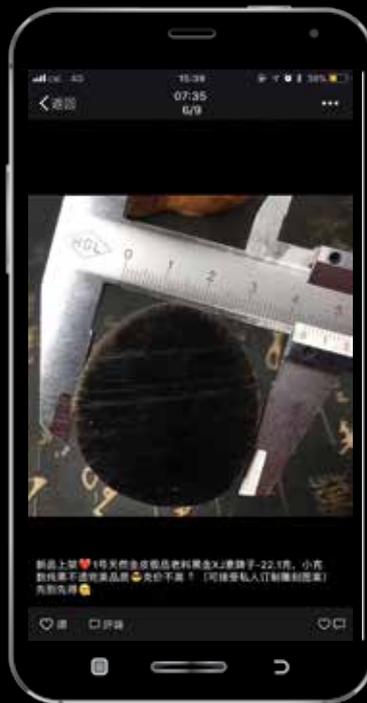
Some stores also sold 'medicinal' shavings – by-products automatically created when grinding real rhino horn into top-end offerings such as bangles, libation cups and signature seals. Based on our personal observations and interviews, buyers in these mostly Chinese-owned stores were pretty much 100% Chinese visitors – given these outlets' geographic location in countries neighbouring China.

For raw horn, recent reports indicate a dramatic drop in the price per kilo across the whole of Southeast Asia. In 2017, dealers were largely quoting US\$20 000-\$28 000 per kilo, compared with a price of \$60 000 per kilo some four years earlier. There has been no explicit answer for



▲ Chinese social-media applications, such as WeChat, are used to send and receive instructions instore.

*Many would acquire a slew of pieces for their friends and relatives back home, offering these products via Chinese messaging app WeChat (their equivalent of WhatsApp), an informal system fast-tracked by free instore Wi-Fi connections: in some cases, all caught on our hidden cameras.*





◀ Labeled 'rhino-horn shavings' in a Laos shop.



▲ 'Rhino-horn' shavings.

**The traditional Chinese medicine component is no longer the dominant market force: the shavings and powder have become mere by-products, leading us to the conclusion that the demand for rhino horn has moved from 'health' to flaunting wealth.**



this trend, but some dealers indicated that either speculators might have dropped out of the scene, or additional supply entered the market.

However, at the retail level, prices have not really changed; manufactured products are generally quoted at about \$80-\$160 per gram for a ring, karma bracelet, medallion, comb, drinking cup and so on.

Compared with ivory at \$2-\$4 per gram, the asking price for rhino-horn shavings from the workshop floor is \$10-\$20 per gram — some eight times less than the per-gram price for luxury finished horn items.

Clearly, the traditional Chinese medicine component is no longer the dominant market force: the shavings and powder have become mere by-products, leading us to the conclusion that the demand for rhino horn has moved from 'health' to flaunting wealth.

**Status —** in particular, the social prominence associated with expensive, *verboten* goods — now drives the demand, while fakes continue to be sold even at this level in parts of Southeast Asia.

The same smoke and mirrors seem true for lion-bone exports from South Africa to Laos. These bones do not stay in Laos. Filming local dealers, our hidden cameras documented that they were instead trafficked into China and Vietnam. Here, they are sold as tiger bones, resulting in a litany of CITES infractions along the way. >>



Sample Number	ID	Submission date	Submitted by	Case Number	Result	Match
SEQ1300048	Sample 1 3079	14-11-13	Karl Ammann	LR003079	Female White Rhino	Match (LR002127 poaching)
SEQ1300049	Sample 2 3079	14-11-13	Karl Ammann	LR003079	No result	
SEQ1400002		1 12-05-14	Karl Ammann	LR003683	Not Done	
SEQ1400003		2 12-05-14	Karl Ammann	LR003683	Not Done	
SEQ1400004		3 12-05-14	Karl Ammann	LR003683	Not Done	
SEQ1400022A	Main R4 Village - Offcuts from beads	25-10-14	Karl Ammann	RR000159	No result	
SEQ1400022B	Main R4 Village - Offcuts from beads	25-10-14	Karl Ammann	RR000159	White Rhino	No match
SEQ1400023	RH Nk khe Village	25-10-14	Karl Ammann	RR000159	Female White Rhino	Matches SEQ1300031 and Poaching
SEQ1400024	RH Hong - Shavings craft workshop	25-10-14	Karl Ammann	RR000159	3 Different rhino profiles	
SEQ1400026	RH - Lin Mong Lah	25-10-14	Karl Ammann	RR000159	White Rhino	No match
SEQ1400027	RH - Hoin Village - purchase	25-10-14	Karl Ammann	RR000159	Female White Rhino	No match
SEQ1400028	RH - Will Staples Main Village	25-10-14	Karl Ammann	RR000159	Male White Rhino	No match
RHR1500429	A. from ring	30-01-15	Karl Ammann	RR000508	Male White Rhino	No match
RHR1500430	B. buffalo horn seal stamp	30-01-15	Karl Ammann	RR000508	Not Done	
RHR1500431	C. Shavings souvenir village	30-01-15	Karl Ammann	RR000508	Female White Rhino	Matches SEQ1400027
RHR1500432	D. Shavings souvenir village	30-01-15	Karl Ammann	RR000508	Male White Rhino	No match
RHR1500433	E. Shavings horn village	30-01-15	Karl Ammann	RR000508	Male White Rhino	No match
RHR1500435	G. Horn village January 2015	30-01-15	Karl Ammann	RR000508	Mixed profiles of White Rhinos	
SEQ1500030	Mangjan Win 5/6/15	17-06-15	Karl Ammann	RR001206	No result	
SEQ1500031	Mangjan Shop 7/6/15	17-06-15	Karl Ammann	RR001206	Male White Rhino	Matches SEQ1500032
SEQ1500032	Mangjan R4	17-06-15	Karl Ammann	RR001206	Male White Rhino	Matches SEQ1500031
SEQ1500033	Vientiane 9/5/15	17-06-15	Karl Ammann	RR001206	Female White rhino	No match
SEQ1500034	Vientiane 9/5/15	17-06-15	Karl Ammann	RR001206	No result	
SEQ1500035	Vientiane 9/5/15	17-06-15	Karl Ammann	RR001206	Black rhino	No match
SEQ1500036	Mangjan Pander R4	17-06-15	Karl Ammann	RR001206	Mixed profiles of White Rhinos	
SEQ1500037	Rhino horn powder Vientiane	17-06-15	Karl Ammann	RR001206	Mixed white and black profiles	
SEQ1500038	Rhino horn powder Vientiane	17-06-15	Karl Ammann	RR001206	Mixed profiles of White Rhinos	
SEQ1500039	Shangji Junelin horn village 2nd shop	17-06-15	Karl Ammann	RR001206	Female White rhino	No match

▲ A sample of the results from the RhODIS database based at Onderstepoort Veterinary Genetics Laboratory at the University of Pretoria.

**DNA results!**

While our medicinal samples came from traditional Chinese medicine stores selling fake products, our samples from luxury jewellery and artefact stores have proved quite the opposite: 90% of the samples from these sources have turned out to be the real thing.

Collected over the past three years, these samples have yielded some 40 real, individual rhino DNA profiles. RhODIS technicians mostly found white rhino DNA, but also some black.

The most intriguing finding revealed that 90% of the samples did not even match any of the RhODIS database profiles for poached rhino.

This raised some interesting new questions: where did these other supplies originally come from?

“While our medicinal samples came from traditional Chinese medicine stores selling fake products, our samples from luxury jewellery and artefact stores have proved quite the opposite: 90% of the samples from these sources have turned out to be the real thing.”

**South Africa has a control system that registers all live rhinos in private hands and potentially highlights any missing. Indications are that this system is far from watertight and unscrupulous owners can find ways of selling horn ‘out the back door’ without fear of repercussions. Local private rhino owners told us that they regularly received calls from potential customers asking to buy horn. There have been no cases of private rhino owners prosecuted for ‘missing’ rhinos, or horns ‘missing’ from rhinos living on their properties.**

Since there is only a scattering of local consumers in South Africa, is the present move to legalise the domestic trade simply a way of formalising a thriving home market whose products already end up being traded globally – as our sampling seems to indicate – currently in contravention of CITES rules?

In 2016, a Zambian government store was broken into. Diverse horns were stolen, turning this source into another potential supply line not covered



▲ Karl Ammann using special evidence bags and containers to label sample products, as stipulated by Interpol.

by the RhODIS database. So far, most range-country governments, such as the Zambian administration, have not asked for their stocks to be included. If any organisation could legitimately pressure them into doing so, it would have to be the CITES Secretariat, headquartered in Geneva.

Murdered conservation investigator Esmond Bradley Martin had published a report in 1992 in *Pachyderm* magazine stating that the Chinese government at the time held close to ten tons of rhino horn in stock. One pharmaceutical company alone had some four tons in its possession. Clearly, none of it in the RhODIS database. Will the CITES Secretariat ask to verify these stocks? Might this supply have entered the market when the price for raw horn hit some \$60 000 a few years ago?

In huge areas such as the Kruger National Park, some rhinos might be poached but never found.

Plus, there have been rumours of samples from rhinos poached in the park taking up to three years to reach the lab in Pretoria. Were we bringing back end-product specimens from Southeast Asia while the evidence bags from the poaching scene were still in some store at the park headquarters?

There are also indications that the lab seems to be sitting on a considerable backlog of samples requiring analysis.

All these unaccounted sources indicate that the demand and supply might be much bigger than the recorded 1 000-1 200 rhinos officially poached in southern Africa each year, and that there might be other sources of supply.

During the 17th CITES Conference of the Parties in Johannesburg, in September 2016, we discussed with several country representatives the value of our research, as well as the restrictions and potential impact on enforcement. One of the key South African enforcement authorities decided that a formula should be found to get rhino-horn samples back to the lab in Pretoria under controlled conditions: We would be given Interpol contacts in Southeast Asia to whom we could hand the samples and who would get them to Pretoria. Although we were still concerned about being challenged on circumventing CITES during this, our latest collection trip, at least we knew the Interpol deal was meant to create a more clear-cut scenario for the labs doing the work.

Travelling to Southeast Asia with Phil as the cameraman, we followed the stipulated collection procedure – using special evidence bags and containers – and established the chain of custody by also photographing shop exteriors.

The sales transactions were filmed with a hidden camera. >>

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▲ CITES CoP17, Johannesburg, South Africa. Photo © JG Strauss



▲ A customer examining rhino horn karma beads.



▲ This well-travelled horn has crossed multiple borders without being detected once.

**I hope some of this evidence might help economists and conservationists reassess their position on the overall demand-and-supply characteristics of rhino horn.**

By the time of our departure back to South Africa, Interpol had still not given us any contacts to whom we could give the samples.

On that particular trip, I then travelled back with some of the samples via Zurich.

At the airport security check, I was pulled aside. Various items of my carry-on luggage were swabbed to check for drug traces.

Of course, there was no problem. Rhino horn is neither cocaine nor heroin.

However, I have little doubt that similar tests could be developed for not only rhino horn, but also ivory and tiger bones and other high-profile wildlife products.

South African and Chinese authorities could perform regular tests of hand baggage on flights arriving from supply countries at demand destinations. Kenya deploys sniffer dogs walking on the baggage carousel, but I have never seen that happen anywhere in Southeast Asia.

I have also travelled, crossing over half-a-dozen borders, with very well-manufactured, fake rhino horns for use in presentations, fully aware that they would show up on X-ray machine displays. In fact, I looked forward to being challenged. I even had the invoice proving the origins of the fake products: from Bone Clones, a US-based company.

On not a single occasion – at Zurich, Nairobi, New York or Johannesburg – did anybody ask me to take out those horns.

I hope some of this evidence, also earmarked for an upcoming publication by DNA experts in a peer-reviewed journal, might help economists and conservationists reassess their position on the overall demand-and-supply characteristics of rhino horn.

However, will the enforcement authorities of demand as well as supply countries, many with serious governance and corruption problems, be interested in using any of the relevant results in the context of planning enforcement measures? Or would they rather not know?

If some countries are exposed for having bigger compliance problems than what might have been imagined, would the CITES Secretariat/Standing Committee finally recommend these parties for the suspension from all commercial and non-commercial trade – a key enforcement tool hardly ever used by the CITES decisionmakers?

Since the CITES trade ban of rhino horn in 1976, it is estimated that more than 100 000 rhino have been lost to poaching. The domestic trade ban by China in 1993 has not made a difference either.

Maybe it is time for the CITES policymakers to dig deeper into their enforcement toolbox, especially after South Africa's Environmental Minister, the late Edna Molewa, first announced at Bangkok in 2013 that the country would begin looking into legalising the trade based on "having tried everything else".



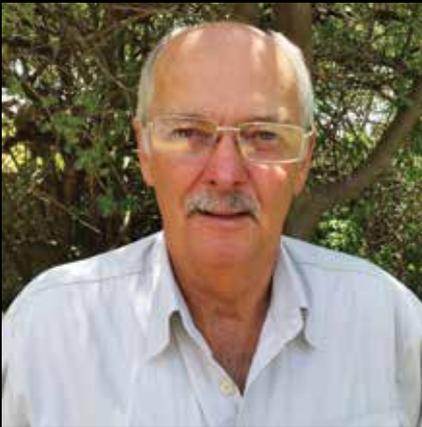
For more information on Karl Ammann, visit [www.karlammann.com](http://www.karlammann.com)

**COMMENT BY PELHAM JONES**

Karl Ammann's article clearly describes the essentially lawless environment in Asia. It outlines between the failure of CITES legislation but also the unwillingness of countries in the East to carry out any kind of effective law enforcement or CITES compliance.

To understand the impact on South Africa, one must go back a little. In 2016, the Committee of Inquiry, appointed by the late Minister Edna Molewa, was tasked to advise on the possibility of a proposed legal international trade in rhino horn. The committee's report (which was approved and tabled by Parliament) outlined five key areas requiring intervention:

- ① security (law enforcement),
- ② community empowerment,
- ③ biological management,
- ④ responsive legislative provisions



▲ Pelham Jones, Chairman of the Private Rhino Owners Association.

**Important call on government**

***We therefore call on government to honour its position on revisiting the option of legal international trade – particularly as many of the conditions required for this to happen have now unequivocally been met.***

The loss of billions of Rands, not only from the loss or theft of a national asset, but also in terms of potential income, job creation, tax and incentives to private ownership, as well as the threat to the survival of the species, will be halted if a transparent, regulated international legal trade is approved at the next CoP. This act will allow for a legal supply of horn to meet end-user demand and stop the unnecessary illegal killing of our rhino. ■

effectively implemented and enforced,

- ⑤ demand and management (which would include demand reduction, education and the transition from an illegal to a legal trade environment).

At the time, the South African government investigated four possible options as outlined by the Committee of Inquiry, namely:

1. No trade in rhino specimens, including a termination of hunting and stockpile destruction, backed by a policy change banning international trade in key affected species;
2. An application of the current policy with no consideration of commercial trade, a destruction of stockpiles and investment in demand reduction;
3. An application of the current policy with no immediate intention to trade in rhino horn, but possibly reconsidering legal international trade in rhino horn when various requirements had been met; and
4. Promoting regulated, legal international trade as soon as the necessary governance conditions had been met.

As we know, the government opted for option 3.

We as PROA would like to draw attention to the following fact. If we



review the five key areas requiring intervention as outlined by the Committee of Inquiry, as well as key recommendations emerging from the Rhino Lab (also held in 2016), we can clearly see that many of the necessary governance conditions have now been met, for example, a significant increase in specialised law enforcement resources, a reduction in poaching numbers, and so on. Because Parliament approved option 3 – reconsidering legal international trade once conditions had been met – it seems clear that the time is now right to consider going forward with a proposal for trade at CoP18, to be held in Sri Lanka in 2019.

The harsh reality is that, despite the international trade ban and the very graphic illustration of non-compliance outlined in Ammann's article, the illegal trade, run via syndicates and poachers, remains a rampant problem. Through a legalised, controlled trade, we would be able to both meet market demand and collapse this illegal trade (and, more importantly, stop the illegal slaughter of our rhino).

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