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Published on *Solutions* (http://www.thesolutionsjournal.org)

Rhino Poaching: What is the Solution?

By: Michael t' Sas-Rolfes

Volume 7: Issue 1: Page 38-45: Mar 11, 2016

In Brief:

Rhino poaching is a serious contemporary global concern. Significant recent growth in demand for rhino horn in Asian consumer markets has driven black market prices to extraordinary levels, undermining attempts to conserve wild rhinos and enforce a worldwide trade ban. A closer analysis of countries that have succeeded in conserving rhinos reveals that they owe much of their success to policies that enhance the direct economic benefits flowing from rhino protection and link these to relevant local people and institutions. If trade ban enforcement alone cannot save rhinos, then other solutions must be considered. As one alternative, international conservation NGOs typically support campaigns aimed at changing consumer behavior, arguing that poaching will end when consumers stop buying rhino horn products. Skeptics of this approach argue that it would be better to displace existing demand for illegally sourced horn either with genuine horn from sustainable sources or with a synthetic substitute. All three approaches deserve careful consideration, both individually and in possible combination.

Key Concepts:

- Rhino poaching can be viewed as an economic problem: as rising consumer demand drives up prices for rhino horn, incentives for illegal activity increase relative to the incentives to protect live rhinos.
- Where wild rhino populations have survived, this has been due to adequate enforcement spending and rhino-related economic benefit flows to relevant local people, not necessarily because of restrictions on rhino horn trade.
- Campaigns aimed at changing consumer behavior may ultimately reduce black market rhino horn prices, but fail to address the economic aspirations of the local people who control the animals' destiny.
- Legalizing trade in rhino horn has the potential to raise much-needed funds for rhino protection and create more lasting incentives for conservation, but faces opposition from advocates of demand reduction and requires significant institutional reforms that do not enjoy widespread political support.
- Introducing a synthetic substitute product to the market provides a third option, sharing both certain advantages and disadvantages of each of the two other approaches.

Wild populations of the world's five rhino species have been in steady retreat for centuries in the face of expanding human populations that encroach upon their habitat and hunt them for their meat and body parts. Since the 1970s, the greatest threat to rhinos has been the trade in rhino horn, which is sought for both ornamental purposes and as an ingredient in traditional Asian medicines used to treat a range of human ailments linked to toxicity and inflammation. In response to this threat, the world's governments listed all rhino species on Appendix I of the Convention on International Trade in Endangered Species (CITES), thereby effectively banning all international trade in rhino horn since 1977.[1]

The initial market response to the trade ban was a more than ten-fold increase in the price of rhino horn in the following two years.[2] Poaching continued unabated—if anything, it became more aggressive. Over the next 15 years, the world's governments stepped up enforcement efforts, persuaded more countries to sign and implement CITES, and finally, in 1993, the US government threatened four remaining key consumer countries with trade sanctions unless they passed and enforced strict domestic laws against the use and sale of rhino horn.[3] The four countries—China, Taiwan, South Korea, and Yemen—acceded. Numbers of African black rhinos, which had declined precipitously from an estimated 65,000 in 1970 to 2,500 in 1993,[4] finally stabilized and

started to increase. The ban was finally thought to be working.

However, by 1993 meaningful numbers of both African rhino species—the black and the white—only survived in a handful of countries, with South Africa being by far the most significant, followed by Namibia, Kenya, and Zimbabwe. Within those countries, the animals typically survived in well-managed and well-funded protected areas, with significant support from the private sector. South Africa had managed to almost completely avoid the poaching crisis and had steadily built up its rhino numbers over the 20th century. Whereas both black and white rhinos were on the verge of extinction at the start of that century, by the year 2000 they were thriving in South Africa, which also played a key role in supplying other African countries with animals to replenish their lost populations.

South Africa (and Namibia) also allowed commercial live sales of animals and a controlled off-take of rhinos to be sold to the lucrative international trophy hunting market. This provided an important source of funds for rhino conservation to add to state subsidies and income from regular wildlife tourism. It is worth noting that, unlike many of the countries that ended up losing their rhino populations, in South Africa, Namibia, and the other enclaves where rhinos survive, incoming funds tend to be more directly linked to the animals' existence. The economic benefits from live sales, hunting, and tourism tend to reach the agents who ultimately control the rhinos' destiny: public and private park managers and the local rural communities living in close proximity to rhino reserves. It seems clear that these factors, and not necessarily laws against rhino horn trade, play a vital role in ensuring rhino conservation success.

Prohibition Failure

Unfortunately, the success of the 1993 legal measures to discourage rhino horn trade was relatively short-lived; by the start of the 21st Century, there were significant signs of renewed buying interest from East Asia. In 2003, South African hunting outfitters started engaging with clients from Vietnam to participate in legal rhino trophy hunts.[5] Vietnam is not a country traditionally associated with sport hunting, and it soon became obvious that these clients were simply interested in obtaining the rhinos' horns. At the time, trophy hunting provided the only legal means of exporting a rhino horn from South Africa, albeit a very expensive one. The price of African horn in Asia must have risen to unprecedented levels for this to happen. Between 2003 and 2008, the number of Asian hunters rose steadily, as did (legal) domestic exchanges of horns previously collected from naturally deceased rhinos. This signaled the emergence of an underground South African export market.

Once the South African government became aware of what was happening, it responded with a series of measures aimed at thwarting rhino horn exports to Asia. These included imposing significantly more onerous permit requirements onto private landowners for any rhino-related activities, declaring a moratorium on all domestic sales of horn, and progressively tightening regulations on trophy hunting and live exports.[6] Unfortunately, these restrictions, mostly implemented between 2007 and 2009, were accompanied by a sudden sharp rise in rhino poaching in South Africa, and incidents of illegal killing have continued to increase every year since. Furthermore, the business of illegal trade has moved from the domain of profiteering wildlife industry players into the realm of sophisticated transnational organized crime syndicates, who have proven to be extremely difficult to apprehend.

Today, some eight years later, the world's single largest free-ranging rhino population, in South Africa's Kruger National Park, is most likely in decline, as the level of poaching mortality now appears to exceed the natural rate of population growth. Elsewhere in the world, rhinos remain under serious threat. The matter is of great concern to conservationists and the general public alike. The conventional approach of regulation and law enforcement, while perhaps not implemented to its full potential, seems to have limited scope for further success. With rhino horn fetching black market retail prices at stratospheric levels, law enforcement efforts are too easily undermined by corruption, as with other high-value black markets such as the drug trade. The War on Drugs has been a spectacular failure, and the war on rhino horn trade may fare no better.

If law enforcement alone won't solve the rhino-poaching crisis, then what will? There are three different schools of thought on this, leading to three distinctly different types of solutions. The first school believes that rhinos will only be safe once the demand for rhino horn is completely eliminated—or at least substantially reduced to unthreatening levels. This school supports the concept of 'demand reduction,' that is, measures beyond law enforcement that will change the behavior of consumers, by persuading them to stop viewing rhino horn as an acceptable product to buy. The other two schools adopt a different approach and rather seek to offer consumers an acceptable substitute to illegal horn from poached rhinos. The second approach involves the reintroduction of a regulated legal trade in harvested rhino horn supplied from sustainable sources, and the third involves introducing a synthetic or 'cultured' rhino horn product into the market.

Demand Reduction

The demand reduction approach is currently advocated and supported by most nongovernmental organizations (NGOs) concerned with conservation and animal welfare, including international heavyweights such as the World Wildlife Fund (WWF), Humane

Society, and International Fund for Animal Welfare. It is epitomized by the slogan of the organization WildAid: "When the buying stops, the killing can too."[7] To sell this message in Asia, WildAid has employed the assistance of several East Asian celebrities, including the Hong Kong actor Jackie Chan, retired Chinese basketball champion Yao Ming, and various young pop stars in Vietnam. The WildAid message has also been embraced by Sir Richard Branson and a coalition of Western conservation NGOs through the UK Royal Foundation's 'United for Wildlife' campaign, in which Prince William, the Duke of Cambridge, plays a prominent role as an ambassador.

WildAid is very confident of the celebrity-driven approach, claiming that it has already achieved substantial success with a campaign against the consumption of shark-fin soup, and that it is having a positive impact on rhinos, too. In 2014, the Humane Society similarly claimed that its efforts in Vietnam were starting to have an effect (enthusiastically endorsed by Vietnam's law enforcement authorities), but this was quickly refuted by other NGOs, who are using different methods. For example, WWF supports a campaign called 'Chi' that attempts to use more subtle methods of advertising.[8]

Whatever success these campaigns may be achieving in Asia, their proponents have so far been unable to convincingly demonstrate results that are significant or fast enough to end the current rhino-poaching crisis. It is unclear to what extent the campaigns matter to existing rhino horn buyers, and the reported success of the shark fin efforts may not be especially comparable or relevant. This is because the demonization of shark fin soup is something fairly new, and to the extent that markets have shrunk, this could be considered analogous with the efforts to reduce rhino horn consumption in the early 1990s. Two decades later, the extant niche consumer market for rhino horn is certainly aware of both the product's scarcity and illegality–in fact this appears to be a significant part of its appeal, as possession of rhino horn now signals a certain kind of status (by being above the reach of laws applied to common people).

Proponents of demand reduction simply cannot tell us how much time and money it will take to decisively change the remaining committed rhino horn buyers' and consumers' behavior, which is grounded in potentially deeply embedded perceptions of healing power, cultural prestige, and commercial value. To remove the incentives for illegal trade, this approach has to bring about the effective collapse in the market price of what is currently one of the world's most highly valued commodities by weight—this is most ambitious. But even if the campaigns eventually succeed in achieving this, they manifestly fail to address the other challenge facing rhino conservation on the ground in Africa: the chronic shortage of conservation funds and shrinking relative economic appeal of wildlife conservation versus other forms of land use on a continent with rapidly growing human populations and development aspirations.

Legal Trade

In contrast to the proponents of demand reduction, a substantial majority of southern African rhino owners and managers, both private and public, advocate a different approach. Not only are they skeptical that demand reduction can work, they are desperate to find sources of funds to cover wildly escalating security costs. And even if they are presently able to find such funds—currently often from short-term donors—they increasingly find their security systems undermined by internal corruption. The incentives to supply horn often outweigh the incentives to protect the rhinos. For this reason, rhino owners increasingly support the potential re-establishment of a legal rhino horn market, supplied from existing stockpiles and future routine horn harvesting from selected animals.

Proponents of legal trade point to the past success of the sustainable use approach and the extent to which managed commercial trophy hunting has boosted the economic incentives to breed and protect rhinos. They see sustainable commercial supply of horns as a simple extension of this approach. Many rhino managers already routinely dehorn their free-ranging animals as a security measure, by sedating them and removing the portion of horn above the growth point. The animals experience no significant pain or obvious social disruption and the horn regrows, allowing for further harvests and accelerated horn production. At present, most harvested horn is securely stored, adding to a South African stockpile that could already meet the equivalent of three to five years of current illegal supply (based on the current rate of poaching).

Those opposed to the idea of legalizing trade raise a number of objections, ranging from ethical to practical concerns. Ethical concerns need to be carefully weighed up against the current reality, in which both rhinos and humans are subjected to extreme suffering and daily deaths in what has become an effective violent war—the current situation is undisputedly morally repugnant. Among the relevant practical concerns, perhaps the most significant are the potential for a legal trade to stimulate further consumer demand, for a parallel illegal trade to continue and possibly even benefit through laundering, and for rhino poaching to be displaced to other rhino species and countries for which legal trade is not an option.

The practical concerns could be addressed to at least some extent through the design of an intelligent trading system. Existing DNA and microchipping technology allows for rigorous supply-chain management and, given Asian consumer concern over the high incidence of fake horn, provides an opportunity to implement a single-channel marketing and certification system that could prevent the infiltration of illegally sourced horn up to the retail level. The Kimberley Process in the diamond industry represents a potential model to follow. To mitigate possible spill-over effects, participants in a legal trading regime would also need to consider

cross-subsidizing the protection of nonparticipating rhino populations in the event of market expansion leading to black market price increases.

The legal trade proposal faces significant interrelated obstacles. It requires that both the proposed selling and buying countries substantially change their existing laws and, furthermore, that that they receive approval from a two-thirds majority at an official CITES meeting. Given the powerful influence of NGOs advocating demand reduction and the support of their host governments, political resistance to this approach is dauntingly high. Even if this solution makes the most economic and conservation sense to the most significant rhino range countries, South Africa and Namibia, the incentive structures within the CITES system conspires against it receiving the necessary international support.

Synthetic Horn

Advances in biotechnology and 3-D printing have recently enabled a potential third approach: the manufacture of a synthetic rhino horn substitute that is potentially indistinguishable from the genuine item, to the extent that it even contains infused rhino DNA. In theory, there are at least two distinct strategic ways in which this product could be used: it could either be marketed openly to consumers as an ethical substitute product (e.g. 'cultured horn'), or it could be covertly introduced into the illegal supply chain to disrupt the existing market. In the case of the latter option, the synthetic horn could potentially play the role of a 'cutting agent,' diluting the supply of genuine horn from poached rhinos. A third option would combine the two strategies. Each of these three options has different implications that are worth considering.

Proponents of this approach share the animal welfare sentiments of those opposed to legal trade in genuine horn (and perhaps the skepticism that this will be allowed), but do not support the demand reduction approach. They argue that demand reduction amounts to the imposition of a Western set of cultural values over Asian values (sometimes labelled as 'cultural imperialism') and that it may fail to deliver satisfactory results. However, various rhino conservation NGOs and supporters of demand reduction—including some with an animal welfare orientation—have issued statements strongly opposing the marketing of legal synthetic rhino horn products, arguing that this would undermine efforts to completely stigmatize the use of all horn and unnecessarily confuse Asian law enforcement officials, reducing their incentives to crack down on illegal product.

The option of covertly introducing synthetic horn into the black market may also face practical challenges, as it would potentially confuse law enforcers and criminals alike. How does one sneak a fake product into an underground market, unbeknownst to criminals, but with the knowledge and approval of law enforcement? And how does one assign the legal mandate and responsibility to undertake something like this? Given the evident strong links between corrupt officials and criminals, it is unclear that this represents a plausible sustainable solution, even if a short-term covert operation might achieve something.

Notwithstanding these difficulties, recent market research suggests that openly introducing synthetic horn into the market could displace at least some of the existing demand for genuine rhino horn, given that the former costs significantly less to produce. A further advantage of allowing overt sales of synthetic horn is that it might reveal information about market demand more generally, thereby allowing for more targeted future interventions. The unresolved question is whether perpetuating interest in generic ‘rhino horn’ products would lead to greater demand for genuine horn (harvested from rhinos) in the future. In any event, a further disadvantage of this approach is the one it shares with demand reduction: it fails to address the immediate financial needs of rhino owners and managers—unless, of course, the synthetic horn producers donate a significant share of their sales proceeds toward subsidizing rhino conservation efforts in the field.

Final Thoughts

In theory, there appear to be three plausible solutions to the rhino-poaching problem, aside from further attempts to enforce the poorly performing trade ban. In practice, all three present varying, but significant, challenges. To further complicate matters, they are somewhat incompatible with one another. Although there is nothing to preclude all three being attempted simultaneously, this would likely cause some confusion, especially given the competing interests of their proponents. That said, the issue is already confusing, and it seems unlikely that the proponents of conflicting solutions will ever reach full agreement on working together, given their substantially differing underlying values, assumptions, and incentives.

The demand reduction approach is grounded in a Western value system, which is not universally shared and accepted by Africans and Asians, who may continue to trade illegally with the assistance of corrupt officials. Relying on this approach is therefore not without substantial risk: it is unclear how much time and money is needed for it to be truly effective. Furthermore, following this approach moves rhinos further toward being an aid-dependent species, which arguably sets up inappropriate longer-term conservation incentives in a developing country context.

As a more sustainable solution, a carefully managed legal trading regime might better satisfy both conservation and economic objectives for countries such as South Africa and Namibia, provided that such a regime addresses concerns relating to potential market responses and laundering of illegally sourced horn. However, to implement this would also require time, resources, and

institutional change, not to mention negotiating a satisfactory cooperative arrangement with other affected countries. The alternative of supplying a synthetic rhino horn product presents a potentially faster and more cost-effective solution, but may not go far enough to address the economic incentives of the local people who control the destiny of wild rhinos.

So what is the best way forward? Of the three potential solutions, demand reduction is the only one currently implemented and congruent with existing laws. However, this does not completely preclude future legal trade or the sale of synthetic substitutes—consider the example of cigarettes, which remain legal while accompanied by strong demand reduction campaigns and more recent competition from personal vaporizers. Legal trades of genuine horn or a synthetic substitute have the potential to deflect demand for illegally sourced horn and earn much-needed money for conservation, but require further work to establish. The overt sale of synthetic or 'cultured' horn products presents a more immediate potential option, with a controlled legal trade in genuine horn providing perhaps the most sustainable long-term option for rhino conservation.

Whichever solutions—or combination thereof—ultimately prevail, let us hope that they do so effectively and soon, for the sake of both the rhinos and all those risking their lives daily in the current gruesome war.

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