
ELEPHANTS, RHINOS AND THE ECONOMICS OF THE ILLEGAL TRADE

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INTRODUCTION

The June 1997 meeting of the Convention on International Trade in Endangered Species (CITES) was something of a turning point for wildlife trade policy. The eight-year old ban on international trade in elephant products was relaxed slightly, to allow three African elephant Range States (Namibia, Botswana and Zimbabwe) to initiate a strictly controlled legal trade. A proposal by South Africa to investigate the potential of a controlled legal trade in rhino products was defeated, but by a small margin. There appears to have been a shift in international thinking to approaches that are more innovative than simple blanket trade bans to save endangered species.

What happens next? Are the latest CITES measures an appropriate way to tackle the problem of elephant poaching? Was the decision to maintain a complete ban on rhino products the correct one? These are not easy questions, and there may be no straightforward answers, especially as the issue of wildlife trade policy remains one charged with controversy and emotion. However, the discipline of economics may offer some fresh insight into these issues, and provide some direction for future policy measures. Inspired by economic analysis, this paper considers some alternative views on elephant and rhino trade issues.

ELEPHANTS

The ivory ban

Few people dispute that the trade in elephant products, especially ivory, was poorly regulated before 1989. Poaching was rife, and large elephant populations were decimated in many parts of Africa. A CITES Appendix II listing, along with various other measures such as the 1986 quota system, failed to solve the problem. According to the Ivory Trade Review Group, these measures failed because of "weak management and enforcement capacity".

There were only two evident solutions to this problem. One was to strengthen management and enforcement capacity; the other was to ban all trade in elephant products, by listing the African elephant on CITES Appendix I. The latter option was chosen in 1989.

Eight years later, there is still much disagreement over the effectiveness of the ivory ban. There is no doubt that both ivory trade levels and prices dropped considerably after 1989, that poaching levels dropped in some (but not all) Range States (Dublin *et al.*, 1995), and that many elephant populations stabilised and/or increased, but what does this signify? Proponents of the ban argue that this is clear evidence that the ban has succeeded, but this conclusion may be premature and incorrect.

Around the time of the 1989 ban, there was widespread media coverage of the elephant's plight, accompanied by appeals to consumers to refrain from buying ivory. In western consuming nations, these media appeals were especially effective in suppressing or even eliminating much of the consumer demand for elephant products. The drop in ivory prices probably has much more to do with the impact of western media appeals than with actual enforcement of the CITES ban.

Economic logic tells us that if the supply of a product is reduced, its price will increase unless there is an equal or greater compensating drop in demand. Trade bans are often intended to reduce both supply and demand, but do not always achieve this. Trade bans on products such as rhino horn and tiger bone did not result in sufficient reductions of consumer demand, and thus brought about price increases, which provided added incentives for poaching and illegal trade ('t Sas-Rolfes, 1997). There is a growing realisation that trade bans cannot be effective without the use of direct measures (such as consumer awareness campaigns) that genuinely reduce consumer demand to residual levels. Whether such reductions in demand are always achievable is a moot point.

Few people would argue that consumer demand for ivory and elephant products has declined sufficiently for the elephant to be declared safe. Recent evidence suggests that demand in Asia continues to be significant; at the latest CITES meeting, TRAFFIC reported that close to 100 tonnes of illegal ivory had been seized since 1989, and that 80% of this was destined for Asian consuming markets (Anon., 1997). Whereas most western consumers have been persuaded to stop buying ivory, the same cannot be said for Asia. With the continued growth of Asian economies and rising levels of disposable income, there is a real risk that future Asian consumer demand will increase rather than decline. This would drive up black market prices for ivory, and add to existing poaching pressures. Given this possibility, what is the most appropriate response: to maintain a complete ban whilst attempting to discourage Asian consumers; or to reinstate some form of regulated legal trade?

To address this question, let us consider likely future scenarios for elephant management in Africa.

FUTURE PROSPECTS

According to the IUCN's African Elephant Database (Said *et al.*, 1995), there were between 286,000 and 580,000 elephants in Africa in 1995. Of these, some were part of declining populations, but others represented healthy populations that were expanding. Indeed, there are several populations that have reached levels at which they are degrading their habitat or encroaching on the lands and livelihoods of local rural people.

In previous times, natural processes may have regulated elephant numbers. However, in modern Africa there are many instances where unchecked expansion of elephant populations will impose serious (and unacceptable) economic and social costs on African people. To prevent this, conservators can erect fences and control elephant numbers using one of three methods: translocation, birth control and killing (by sport hunting or culling, with or without product harvesting). Unfortunately, all these options are also costly.

Translocation is a seemingly humane but a very costly way to control elephant numbers, and is only feasible as long as suitable unpopulated habitat remains available. Birth control techniques are being developed and have yet to be perfected. They are also likely to remain costly, and raise some animal rights and welfare concerns. Killing elephants may be regarded as inhumane, but

remains the least costly method of control. Nevertheless, even conventional elephant culling is not costless. If products such as ivory and skins are not harvested and sold commercially to international markets, the financial costs of culling typically exceed any possible revenues.

In reality, many elephant populations are already subjected to a form of culling; it takes place informally, in an uncontrolled and erratic way, and is usually called "poaching". A challenge for the future is whether to legitimise and try to regulate culling, or whether to allow it to continue unabated in its present illegal form.

Of all the methods of population control, a combination of sport hunting and culling with the commercial, international sale of elephant products remains the most economically attractive option, whether legal or illegal, which can still maintain the ecological integrity of the area. This is unlikely to change in the foreseeable future.

As elephants continue to reproduce and die, stockpiles of ivory will continue to increase. According to TRAFFIC, African elephant Range States now possess in excess of 470 tonnes of stockpiled ivory potentially worth millions of dollars (Milliken, 1997). However, the Range States are unable to sell these stockpiles, even though most of their conservation departments are facing ongoing budget cuts and are desperately short of funds for basic **field** protection.

This incongruous state of affairs cannot prevail indefinitely. Either the market demand for ivory will disappear, or the ivory stockpiles will somehow find their way to the market. Since the former scenario seems unlikely, we can expect the latter. For the sake of elephant conservation, it makes sense to try and regulate this process in a way that will be beneficial to conservation; for example, by ensuring that the proceeds from ivory sales are spent on covering the costs of field protection.

The problem that remains is that many Range States are far from establishing sufficient management and enforcement capacity to cope with a legal trading regime. This raises fears that any legal trade will provide loopholes that allow for "laundering" of ivory from illegal sources. The issue of ivory trade regulation could continue as a political tug of war between countries and environmental groups that prefer to vest the responsibility of elephant protection with international institutions and customs officials on one end, and those

Range States that carry the substantial costs of proper field management and are looking for a way to offset them on the other.

In the long run, this dispute will only be resolved completely when all remaining Range States end up with effective, synchronised management and enforcement systems, while elephants are likely to become locally extinct in Range States with inadequate enforcement. Such systems are expensive, and to justify their costs, governments will seek sources of revenue to justify them. If there is to be more than just a few populations of elephants in key tourist destinations and safari hunting areas, a controlled legal ivory trade seems almost inevitable.

If we are prepared to accept this inevitability, the next question to address is how to set about reintroducing legal trade. Given the disparities in institutional capacity between different Range States, this is no easy issue: there are likely to be winners and losers in this process. It is important to try and keep any losses to a minimum. As part of this process, one aspect deserves close attention: the handling of all existing legally held ivory stockpiles.

THE STOCKPILE ISSUE

From the last CITES meeting, CITES provides a mechanism whereby donor countries and organizations can acquire stockpiles of ivory from Range States for “non-commercial purposes”. This measure is designed to eliminate potential security problems and financial liabilities imposed upon African Range States, and tries to encourage the creation of conservation trust funds with the proceeds from such sales. Since the ivory thus acquired could not be resold, the new owners would be obliged to either retain the stockpiles or destroy them. What should they do?

For some, the answer may seem simple: destroy the stockpiles to prevent any possibility of them entering the black market, and thereby send out a message that ivory should not be used commercially. However, there are two fundamental misconceptions underlying this approach. One is that leakages of stockpiled ivory onto the black market will threaten living elephants. The other is that destroying stockpiles of ivory will dissuade further consumption and therefore poaching. In both cases, the reverse is probably true.

Photo Credit: Esmond Bradley Martin



Ivory store room at Kruger National Park, Skukuza, South Africa

Trading in old ivory stocks does not in itself pose a threat to living elephants; in fact it is more likely to help conserve them. Consumers who have already decided to acquire ivory will seek the best price for a certain quality of product. If their only source is from fresh illegal stocks, they are likely to contribute indirectly to further poaching of elephants. However, if they are offered the option of a cheaper alternative source, they will obviously choose that, especially if that source is also legal. If ivory from legal stockpiles is offered at competitive prices, poaching and black market trading will be discouraged through competition, not encouraged.

Destroying stockpiles of ivory reduces the potential legal supply relative to demand, thereby increasing the perceived market value of all ivory. This pushes up the street price of ivory, and makes black market trading and poaching more lucrative. If some Range States start legal trading, the destruction of other stockpiles will also enhance their monopoly power. This will benefit those particular Range States by increasing their revenues from sales, but may not benefit elephant conservation as a whole, because it will put a higher price tag on the heads of all unprotected elephants.

The latest round of CITES measures allows for the initiation of a controlled legal trading regime, but such a regime should be designed to out-compete illegal poachers and suppliers, not increase their share of the supply system. Range States have been encouraged to set up mechanisms for the legal sale of ivory stockpiles with proceeds somehow flowing back to elephant conservation, which makes good sense. However, if the purchasers of those stockpiles destroy them, this could be counterproductive as a general conservation measure. It makes more sense for the new owners of the stockpiles to secure and retain them until such time that the evolution of the ivory market is better understood. Those stockpiles may prove critical in establishing control over the supply mechanism in a future legal trading regime.

RHINOS

A conservation crisis

Humans have hunted rhinos for many thousands of years, mainly for meat and medicines. Rhino horn is regarded as an essential ingredient in traditional oriental medicines used to treat serious fevers, and has been used as such for many centuries. Following the decline of Asian rhinos, Asians have imported African rhino horn for

several centuries. The volumes of rhino horn consumed as medicine are fairly low, and until recent decades medicinal use probably never posed a serious conservation threat.

Photo Credit: Esmond Bradley Martin



Weighing of rhino horns at the Kenya Game Department storeroom, Nairobi.

In the early 1970s, a series of events in the Middle East precipitated a rhino conservation crisis. The discovery of oil in Saudi Arabia created many lucrative employment opportunities for people from neighbouring countries, including Yemen. The disposable income of Yemeni men rose substantially and with it, their willingness to pay large sums of money for rhino horn *jambiyya* (ceremonial dagger) handles, a key Yemeni status symbol. The demand for rhino horn surged, causing a rise in prices and a consequent escalation of poaching in Africa.

By the late 1970s, CITES had started to become operational, with all rhinos listed on Appendix I. Initially, the trade ban was a dismal failure ('t Sas-Rolfes, 1995). Rhino horn prices soared on all markets, especially in the Far East. Black market trading

continued unabated, and most of Africa's rhino populations were decimated by poachers. By the early 1990s, poaching levels had dropped (Martin and Vigne,

1997), and numbers have subsequently stabilised, with surviving populations confined to a few Range States and highly protected situations.

Only a few countries have succeeded in protecting and even growing their rhino populations. Currently, the world's most significant and successful rhino range State is South Africa. This country has used a combination of bold management strategies and market-based economic incentive measures to turn its seriously threatened population of southern white rhinos into the world's least threatened variety. Consistent with its past practices, South Africa has proposed investigating a managed legal rhino horn trade as a possible conservation measure, but this proposal has met with stiff opposition.

There is a belief that the rhino horn ban is finally working. Now that most consumer states have joined CITES and outlawed domestic use of rhino horn, and now that poaching levels have dropped to sustainable levels, the problem seems to have abated. There is a fear that re-opening a legal trade will once again endanger surviving populations.

To consider the legitimacy of this argument, let us consider an alternative explanation of the ban's effects.

WHAT DID THE BAN REALLY ACHIEVE?

The sudden surge in demand for rhino horn in the early 1970s will have caused some price increases in Asian markets, but because Yemeni *jambiyya* handle carvers re-sold off-cuts and shavings, the supply to the medicine markets was not under serious threat. However, it is likely that the CITES ban created a perceived supply shortage, which in turn led to the dramatic rise in prices in the late 1970s. Asian traders and traditional doctors, fearing that their supplies of horn were now under threat, probably stockpiled in anticipation of future shortages, placing considerable upward short-term pressure on prices.

Rapidly rising prices led to further speculation, and subsequent undercover investigations have revealed at least two cases of large-scale illegal stockpiling (one in China and one in the UK). Markets tend to overreact to bad news, and this overreaction is exacerbated in black markets, where prices fail to reflect accurate information about a product's scarcity. It appears that speculators overestimated the demand for rhino horn, and found

themselves stranded with stockpiles that they could not sell. The black market price for rhino horn subsequently dropped.

Apart from this probable "overshooting" of black market prices, two other factors contributed to a decline in rhino poaching in the 1990s. The first was the outbreak of civil war in Yemen, which had a significant negative effect on the country's economy, and suppressed levels of consumer demand. The second was the fact that virtually no unprotected rhino populations remained. Most surviving rhinos are now well protected in areas under surveillance by armed field staff. A few remain in remote and inaccessible areas, but all the "easy pickings" are gone.

It is thus possible that the rhino horn trade ban created a perception of enhanced scarcity, which led to the unnecessary death of many rhinos, and that the market continues to digest the glut of horn that was poached during the late 1970s and 1980s. The incentive to poach rhinos is currently low, because there are still ample stockpiles of horn on the black market. However there is evidence of ongoing consumption and demand (Mills, 1997; Mainka, 1997). Does this pose any potential future threat, and if so, what should be done to address this?

SHOULD THE BAN REMAIN IN PLACE?

If the alternative theory of the ban's effects is correct, rhinos will enjoy a period of respite as long as the consumer market continues to digest existing stockpiles. However, if consumer demand persists (or increases) and stockpiles become depleted, rhinos could face another serious onslaught of poaching. Establishing a managed legal market would enable conservationists to monitor market trends. The present situation has everyone guessing.

It is wrong to assume that establishing a legal market is risky. It may in fact be riskier to leave the rhino horn trade solely in the hands of illegal operators. Establishing a legal market could provide a further advantage: a substantial source of revenue for conservation agencies. Even more so than with ivory, the potential to fund field protection with the proceeds from legal rhino horn sales is considerable, and could be of great benefit to conservation generally. Conversely, if poaching pressure increases, and conservation budgets continue to shrink, the outlook for rhino protection is bleak.

Despite the apparent changed perspectives emerging from the latest CITES meeting, there appear to be two aspects of wildlife trade that remain poorly understood. The **first** is the nature of the relationship between legal and illegal trade; the second is the extent to which trade can be “controlled” and the implications of this for policy.

There is much resistance to allowing any form of legal trade, out of fear that this will create loopholes for laundering of illegally obtained products. Legalising trade may reduce the transactions costs of illegal trading, but it also reduces the profit margins of illegal traders. If properly designed, a legal trading mechanism should do much more to discourage illegal trade than to encourage it.

Not all illegal “trade” is bad for conservation. Trade of products obtained directly through poaching is certainly undesirable, but as discussed above, trade of old accumulated stockpiles can actually help to reduce poaching pressure. The real issue for conservation is the source of supply of a particular product: was the product obtained from a source that will encourage further poaching, or does the source compete with the providers of freshly supplied (poached) product? The CITES system of trade restrictions and bans is not well equipped to make this critical distinction, and much time is wasted trying to prevent illegal transactions that may actually benefit conservation.

An implicit objective of CITES and related wildlife trade policies is to “control trade” of wildlife products (Hemley, 1994). But attempting to “control” trade is futile. There are few, if any, examples of any commodity trade being successfully controlled through a system of bans and regulations. There have certainly been attempts to achieve this for products such as alcohol and narcotic drugs, but these have been notorious failures. Even in the diamond industry, the worldwide De Beers cartel is unable to control trade, and smuggling and illegal trade is widespread. What De Beers does achieve, however, is a high degree of control over the supply of diamonds. By preventing an unfettered flow of new product to the market-place, De Beers is still able to exercise considerable influence over the diamond market.

Herein lies an important lesson of conservation: the key to managing trade in wildlife products is to exercise control over supply, not over subsequent transactions.

Ironically, trade bans do create a measure of control over commodity trade: they place it in the hands of organised crime. Organised crime syndicates specialise in acquiring monopoly power in the provision of high value, illegal goods. They establish links with corrupt enforcement officials to ensure a high degree of legal immunity, and rely on the law enforcement system to keep their competition out of business. They specialise in obtaining specific products, and develop efficiencies in so doing. In the wildlife trade, bans can create illegal industry structures that are more concentrated and powerful, harder to control and more likely to over-exploit the resource than before.

As an institution, CITES is hardly capable of thwarting the activities of well-organised criminal syndicates that are proficient in smuggling goods such as narcotics. This is unlikely to change, as CITES has some inherent weaknesses in its institutional design that preclude it from ever being implemented properly (for a detailed discussion see Trexler, 1990). In the long run, trade restrictions such as CITES are not the answer to overexploitation of wildlife. We must **find** ways to protect the supply at the source; there is no substitute for adequate field protection.

CONCLUSIONS

The conventional wisdom has been that banning trade in both elephant and rhino products has been the right thing to do, and that any shortcomings of this approach were due to poor implementation rather than a fundamental flaw in the policy.

However, if we consider some alternative views on these issues, we may reach different conclusions. The ivory trade ban is likely to prove unsustainable and even counterproductive in the longer term. Given that it is probably desirable to gradually re-establish a managed trading regime, it is important to deal with existing official ivory stockpiles in an appropriate way: destroying them probably makes little conservation sense.

The rhino horn trade ban appears to be successful at present, but probably exacerbated the poaching problem in the past. If demand for rhino products persist, the ban may again prove counterproductive in the future **if** existing stockpiles become depleted through consumption. It is still worth considering the option of managed legal trade.

The whole issue of wildlife trade remains poorly understood. Illegal trade in old stockpiles is not always a conservation threat. The real challenge for conservation is to reduce the profitability of poaching, by providing any alternative supply sources that do not involve the illegal and uncontrolled killing of further animals. Trade bans do not always achieve this goal they often achieve the opposite by driving up prices and enhancing the position of illegal suppliers.

The key to solving wildlife trade problems does not involve "controlling trade" - that is an unattainable ideal. Wildlife trade problems will only be solved by controlling supply, i.e. by adequate field protection. The challenge for conservation is to create the right incentives and funding mechanisms for such protection to continue on a sustainable basis.

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