

An Economic Approach to Conservation: The Rhino Conservation Act of 2005

The Rhino Conservation Act of 2005¹

*A Radio Address by the Zambesian
President*

Introduction

Good morning. Thank you for taking the time to listen today. I know how expensive radio time is for many of you so I will keep my remarks brief.² Tomorrow I will sign into law the *Rhino Conservation Act*. This act is designed to protect our indigenous rhinoceros population and stimulate development in rural Zambia.

¹This essay is economic fiction, in the tradition of the work of Russell Roberts (*The Choice* and *The Invisible Heart*) and Jonathan Wight (*Saving Adam Smith*). While the country Zambia, its newly elected president, and the Rhino Conservation Act are not real, I have attempted to be factually accurate about the rhino situation and the possibility of reform along the lines discussed in this fictional presidential address. The purpose of the footnotes is therefore to provide the reader with additional explanations, sources of information contained in the address, and suggestions for further reading.

Joshua Hall is a Ph.D. candidate (Economics) at West Virginia University, Morgantown, West Virginia, USA.

²For more on the importance of radio as a means of communication in Africa, see Petra Cahill, "Bringing Radio to Rural Africa," MSNBC.com, 20 May 2004 (<http://www.msnbc.msn.com/id/4953281/>)

I am taking this rare opportunity to address you because this policy represents a dramatic departure from previous government policy towards the black rhinoceros and I wanted the opportunity to explain why such a dramatic change is the appropriate course of action.

A Short History of Conservation Attempts

One thing is clear: Zambezia's attempts to save the black rhinoceros have not been effective. According to the African Rhino Specialist Group, there are only 3,600 black rhinos in the entire world today.³ Given how low current numbers are, it is difficult to believe that black rhinoceros used to be plentiful throughout our country and the rest of Africa. The black rhino population was estimated to be as high as 65,000 in 1970.⁴ However, an increased demand for traditional Asian medicines containing black rhino beginning in the early 1970's fueled an increase in poaching. By one estimate, the black rhino population in Africa fell by 96 percent from 1970 to 1992.⁵

³<http://www.rhinos-irf.org/rhinoinformation/populationtable.htm> (accessed 10 May 2005).

⁴Mike Milliken, "Rhinos by the Horn," *Cites C&M*, November 1996, 6-13 (cited in Michael De Alessi, *Private Conservation and Black Rhinos in Zimbabwe: The Save Valley and Bubiana Conservancies* [Washington, DC: Competitive Enterprise Institute, January 2000]).

⁵WWF, "Black Rhinoceros Fact Sheet," prepared for the 13th Meeting of the Conference of the Parties to CITES, Bangkok, October 2-14. Available online at: <http://panda.org/downloads/species/ecop13blackrhinofactsheet.pdf>

During the past thirty-five years the Zambebian government tried many different approaches to saving the rhinos. At first we became heavily involved in international attempts to make the trade of rhino horn illegal. Our hope was that the stiff penalties associated with the international sale of rhino horn would make poaching more expensive. While we were successful in getting the Convention on International Trade in Endangered Species (CITES) to ban the international trade of rhino horn in 1977, the ban proved ineffective in discouraging poaching. In fact, the resulting decline in available rhino horn actually increased the profits to poaching and encouraged poachers to step up their efforts.⁶

Next, we tried "dehorning," where government employees removed the horns of all the black rhinos in Zambezia in hopes to eliminate any incentive poachers had to kill the rhinos. Again, we were wrong. It often takes days to track one rhino, and if poachers inadvertently tracked a dehorned rhino, they would often kill it to save themselves the expense of accidentally tracking the same dehorned rhino again.⁷ Another unforeseen issue with dehorning as a long term strategy of rhino conservation is that rhino horns grow back very quickly, at a rate of nearly 9 cm a year.⁸ Nine centime-

⁶See, for example, Michael 't Sas Rolfes, *Does CITES Work? Four Case Studies* (London: Institute of Economic Affairs, 1997). "If anything, [the ban] led to a sharp increase in the black market price of rhino horn, which simply fueled further poaching and encouraged speculative stockpiling of horn."

⁷De Alessi, *Private Conservation and Black Rhinos in Zimbabwe*.

⁸Joel Berger, Carol Cunningham, A. Archie Gawuseb, and Malan Lindeque, "'Costs' and

ters of horn can garner a poacher several thousand dollars on the black market, meaning it will not take long after dehorning for a rhino to once again become a target of poachers. Furthermore, researchers found that poachers do not discriminate between large and small horned rhinos, and so dehorned rhinos are not immune from attempted poaching.⁹ Even if poachers did discriminate, in a country as sparsely populated as Zambezia, it was impossible to keep track of the regeneration of rhino horns. Knowing this, poachers continued to cross our borders and indiscriminately kill rhinos in the hopes that they had a harvestable horn.

Dehorning also had two additional problems that made it an unsuitable rhino conservation strategy for Zambezia. First, there was some evidence that rhino calf mortality increased after dehorning because hornless mother rhinos had difficulties defending their young from predators.¹⁰ Second, dehorning was a very expensive process, costing up to \$1000 per rhino.¹¹ It soon became apparent that it was politically untenable to spend so much money on rhino conservation when so many of our citizens are living in abject poverty.

Most recently our government tried to limit poaching by creating Rhino Protec-

tion Zones. These zones were sanctuaries for rhino that were patrolled by anti-poaching security forces. At first, the sanctuaries worked fairly well. However, two problems quickly arose. First, like dehorning, the Rhino Protection Zones were very expensive and political support for them was extremely weak. Second, corruption proved to be a very big problem. The potential gains from poaching one rhino were more than a security force member would make in an entire year. While Rhino Protection Zones did a good job of protecting from external poachers, they seemed to exacerbate internal poaching.¹²

The failure of these three approaches is why the first thing I did upon entering office was to convene a task force to study the issue and propose a solution. Their recommendations have manifested themselves in the Rhino Conservation Act.

The Reasons Why Our Past Efforts Failed

Before discussing what the Rhino Conservation Act will do, let me explain to you why Zambezia's previous efforts to save the black rhinos have failed. It is my hope that if you understand why our past efforts have failed, you will better understand the need to make such a radical change in policy.

Short-Term Survivorship of Hornless Black Rhinos," *Conservation Biology*, 7 (December 1993): 920-24.

⁹*ibid.*

¹⁰Joel Berger and Carol Cunningham, "Phenotypic Alterations, Evolutionary Significant Structures, and Rhino Conservation," *Conservation Biology*, 8 (Sept 1994): 833-40.

¹¹De Alessi, *Private Conservation and Black Rhinos in Zimbabwe*, p. 3.

¹²This discussion draws on the history of Zimbabwe's Intensive Protection Zones (IPZs). According to Michael De Alessi, "The IPZs were an improvement, but failed to address the corruption issue or to adequately protect the remaining rhinos" (*Private Conservation and Black Rhinos in Zimbabwe*, p. 4).

The primary reason for the failure of rhino conservation in Zambezia is because Zambezians had insufficient incentive to protect the rhino; rhinos are common property. In one sense this is a good thing, because all of our people have a vested interest in the fate of the rhino. However, when it comes to actually taking steps to protect the rhino, few Zambezians have incentives to prevent poaching. This was not a problem as long as the demand for rhino horn was low.

As the demand for rhino horn increased, the fact that the black rhinos were common property became problematic. While poachers had a lot to gain from killing a black rhino and harvesting its horn, each individual Zambezian had nothing to gain and much to lose by stopping the poachers. Even collectively we had little incentive to stop the poaching because the cost was high with little returns.

In fact, we often forget that some Zambezians are hurt by attempts to protect the black rhino. While rural villagers respect the rhino and would prefer to see them protected, rhinos impose tremendous costs on villagers. One rhino stampede can destroy an entire village and in the normal course of their lives, rhinos cause tremendous damage to crops vitally important to the survival of villagers. When a villager adds up the costs imposed by the rhinos with the emotional benefit of having the rhino protected, the emotional benefit does not even come close to covering the cost.

This is why so many rural villagers are hostile to rhino conservation efforts. Not because they are anti-rhino, but because they do not see current conservation efforts accomplishing more than hurting them. Not only did past conserva-

tion efforts take valuable aid dollars away from rural villagers, but villagers were prevented from protecting their own property from the rhinos. Furthermore, the level of resentment from the rural villagers to the city dwellers is extremely high because the villagers feel as though they are bearing the entire burden of protecting the rhino.

The Rhino Conservation Act

Any successful conservation program for the black rhino needs to ensure that those who live in close contact with the rhino will benefit enough from their existence that they will take steps to protect them. Based on my studies of successful rhino conservation programs in countries like Zimbabwe and South Africa, I have come to the conclusion that the best way to ensure that the black rhino survives in Zambezia is to eliminate communal ownership of the black rhino.

Putting ownership of Zambezia's rhinos into private hands will overcome the problems endemic to the failures of our past conservation efforts because private owners have a strong incentive to care for and protect their property—the rhinos. If private owners successfully protect the rhinos from poachers, they stand to reap the benefits of that protection. Contrast that result with the corruption prevalent under the Rhino Protection Zones. Each guard had no direct stake in the conservation of an individual rhino, yet he could directly benefit from looking the other way. The incentives to protect the rhino were completely wrong under public stewardship and would be much improved under private ownership.¹³

¹³For more on the importance of property rights to encouraging property owners to

In fact, the absence of property rights in rhinos has led to what ecologist Garrett Hardin first called the “tragedy of the commons.”¹⁴ The tragedy of the commons occurs when a common resource is overused or depleted because each user has little to no incentive to conserve on its use. This was the case under communal ownership of the rhinos. Individual Zambesians have little incentive to protect individual rhinos because growing the stock of rhinos will not help them financially and in fact it might hurt them. When property rights over a resource (in this case rhinos) are well-defined, however, the tragedy of the commons can be averted because individual property owners have an incentive to conserve and a right to exclude others from their property.¹⁵ The rapid depletion of the black rhino in Zambezia over the past 35 years is a clear example of the tragedy of the commons at work. Therefore, providing clearly defined private property rights should eliminate this part of the problem of rhino conservation.

The most difficult part of this process is the question of who gets the privatized item. The transfer of resources from public to private hands can, and has, occurred in many different ways. The committee discussed auctioning off the rhinos, as was done with state-owned enterprises in

conserve and protect resources, see Richard Stroup, *Economics* (Washington, DC: Cato Institute, 2003).

¹⁴Garrett Hardin, “The Tragedy of the Commons,” *Science*, 162 (1968): 1243-48.

¹⁵For more on property rights helping to solve the tragedy of the commons, see Chapter 2 of Terry L. Anderson and Laura E. Huggins, *Property Rights: A Practical Guide to Freedom and Prosperity* (Stanford: Hoover Institution Press, 2003).

the former Soviet Union.¹⁶ It was determined that this method would probably go the farthest towards helping the finances of Zambezia. However, that is not our ultimate goal. We also want the distribution method to be considered just.

The commission recommended that the residents of rural villages should be the ones to receive a property right in the black rhinos.¹⁷ Not only do the local villagers have to deal with the rhinos on an everyday basis, but they are closest to the rhino population. In addition to fairness, there is a more practical aspect to giving private ownership to villagers. If conservation is going to be effective, rhinos will have to share the land with rural villagers. Currently, our people cannot make money off the rhinos, so when the choice is between rhino habitat and farmland, the farmland always wins. The rhino will only make a comeback if we give our

¹⁶For a discussion of the privatization of the enterprises of the former Soviet Union, see Peter J. Boettke and Peter T. Leeson, “Is the Transition to the Market Too Important to be Left to the Market?” *Economic Affairs*, 23 (2003): 33-39.

¹⁷The details of the Rhino Conservation Act are as follows. The rhino populations have been tracked for several months. Villages where rhinos are more prevalent will receive ownership of more rhinos than villages where rhinos are less prevalent. A joint stock company has been set up in each village and each adult resident will receive one share in the joint stock company. They will have full property rights in these shares, including the ability to sell them. For more on the difficult decisions inherent in transferring property from government ownership to private ownership (applied to roads), see Walter Block, “Homesteading City Streets: An Exercise in Managerial Theory,” *Planning and Markets*, 5 (2002): 18-21.

rural villagers a reason to care about their welfare.¹⁸

Another advantage of dividing up rhino ownership among a large number of villages is that it allows for individuals' natural entrepreneurial spirit to come up with innovative solutions to the problem of rhino protection and conservation.¹⁹ The experience of other countries with the white rhino shows that there are many different ways to make rhinos economically worthwhile to protect. In South Africa, some enterprising individuals have set up "green" hunting safaris to make money off of rhinos. During green safaris, hunters use a tranquilizing dart gun to immobilize the rhino. Since it is more difficult to shoot a rhino with a dart gun than a rifle, many hunters find green hunting preferable to traditional safaris, and at a cost of \$10,000 each, green hunting bring in much needed income to the rhino's owners.²⁰ In Zimbabwe, private conservatories raise revenue in a variety of different ways, from photo safaris to trophy hunting. One estimate places the return on capital to wildlife conservation at one conservatory in Zimbabwe at ap-

proximately 11 percent as compared to between one and three percent for cattle farming. This type of superior return on rhino conservation led the number of black rhinos in Zimbabwe to increase from 300 to 400 in just four years.²¹

Another way to make money off of rhinos is through rhino farming.²² Understanding that the demand for rhino horn is what makes rhinos so valuable means that owners of rhinos will have incentives to maximize the size of their herds. This is very clear from cattle markets where the high demand for beef ensures that cattle owners want to maximize the size of their herds. Smart rhino owners will selectively cull the herd to maximize profits from the sale of rhino horns without lowering the birth rate within the herd. This is done by selling only older rhinos that are past calf-bearing age.

Given the incentives created by private ownership of the rhinos, Zambesians will pursue the course of action that they think is best to maximize the value of their rhinos, including how best to protect them from would be poachers. Some might choose to try dart hunting. Others might try game hunting. Others might engage in rhino farming. The key is that each village will have the opportunity to do what it thinks is best with a minimal amount of interference from the Capitol.

¹⁸A similar argument is put forth by Elizabeth Willott and David Schmitz, "Environmental Ethics: What Really Matters, What Really Works," *Humane Studies Review*, 13 (Spring 2001) (<http://www.theihs.org/libertyguide/hsr/hsr.php/41.html>).

¹⁹Terry Anderson and P. J. Hill show how cattlemen in the American West, because of private property rights, were able to come up with innovative solutions of how to protect their cattle from would be thieves (Terry L. Anderson and Peter J. Hill, eds. *The Technology of Property Rights*. Landham, MD: Rowan and Littlefield, 2001).

²⁰Don Boroughs, "Hunters Shoot But Don't Kill," *U.S. News and World Report* (November 15, 1999), p. 86.

²¹All information on the Zimbabwean experience comes from De Alessi, *Private Conservation and Black Rhinos in Zimbabwe*.

²²For more information on rhino ranching, see Kobus du Toit, *Rhino Ranching: A Management Manual for Owners of White Rhino* (South Africa: African Rhino Owners Association, 1998).

Conclusion

While I do not know what the private ownership of Zambezian rhinos will produce, I am sure it will be better and more efficient than what we have done in the past. For one thing, private ownership will be nearly costless to the government, allowing us to focus on other priorities.²³

Second, the rural villagers who are closest to the rhinos now have an incentive to protect their potentially valuable asset. A village that is successful in protecting and growing its rhino population can generate considerable income from rhinos in the future. Should a village eliminate its rhino population by selling all of its rhinos immediately it will pay a financial penalty in the long run. Transforming rhinos from communal to private property turns the high value of the rhinos from a bad thing to a good thing. The high prices that make rhinos valuable to poachers also provide the incentive for Zambezians to protect the rhinos.

I know that communal stewardship has a long tradition in our culture and I have faith that our new policy will not only successfully increase the number of rhinos in Zambezia but improve life in our remote villages. Today, rural villagers frequently see the rhino as a negative, nothing but a beast that destroys their crops and keeps them in constant fear of its destruction. Tomorrow, villagers will see the rhino as an opportunity for advancement.

During my campaign, my critics accused me of not knowing what is best for Zambezians. In a sense that is true. I may not know what is best for Zambezians. But I do know that if I give Zambezians the ability to affect change on the local level, to pursue their own goals, the entire country as a whole will prosper.

Thank you for your time.

²³On the relative cost-savings of private ownership of rhinos, see Michael De Alessi, "An Ivory-Tower Take on the Ivory Trade," *Econ Journal Watch*, 1 (April 2004): 47-54. "Allowing wildlife to be privately protected incurs little cost to the state" (p. 51).