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DEVELOPMENT VS. CONSERVATION: THE FUTURE OF THE AFRICAN ELEPHANT

PATTY F. STOREY*

In 1975, the Convention on International Trade in Endangered Species of Fauna and Flora ("CITES") went into force.¹ At that time the African elephant was placed in Appendix II in an attempt to regulate the trade in ivory. The Appendix II listing, however, was insufficient to stop the poachers and exporters as too many people were willing to buy ivory at a high price. Countries attempting to protect the elephants had inadequate funding, weapons, and trained personnel to make a telling effort. In 1988, an elephant was killed for its tusks every eight minutes.² By May 1989, ivory was worth one-hundred and forty dollars per pound,³ and poachers killed elephants at the rate of three a day in Kenya alone.⁴ As a result, poachers halved the elephant population in Africa between 1979 and 1989.⁵

In late 1989, CITES passed a resolution moving elephants from Appendix II to Appendix I.⁶ Otherwise known as the Ivory Ban,⁷ this

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1. Convention on International Trade in Endangered Species of Fauna and Flora, Mar. 3, 1973, 27 U.S.T. 1087, 12 I.L.M. 1085 (entered into force July 1, 1975) [hereinafter CITES].

2. William Conway, *What Happens to Elephants Goes Far Beyond Elephants*, WILDLIFE CONSERVATION, March/April 1993, at 2.

3. Richard E. Leakey, *A Perspective From Kenya: Elephants Today and Tomorrow*, WILDLIFE CONSERVATION, March/April 1993, at 58.

4. *Id.*

5. Edward R. Ricciutti, *The Elephant Wars*, WILDLIFE CONSERVATION, March/April 1993, at 16.

6. Leakey, *supra* note 3, at 59.

7. Some African countries, such as Zimbabwe, South Africa, Zambia, Botswana, and Malawi entered reservations to the Ban. China, the United Kingdom (on behalf of Hong Kong), and Japan also entered reservations. Michael J. Glennon, *Has International Law Failed the Elephant?*, 84 AM. J. INT'L L. 1, 17 n. 150 (1990).

The United Kingdom's reservation has been widely condemned. See, e.g., Phillipe J. Sands & Albert P. Bedecarre, *Convention on International Trade in Endangered Species: The Role of Public Interest Non-Governmental Organizations in*

resolution caused the price of ivory to fall from one-hundred and forty dollars per pound to five dollars per pound in one year.⁸ This drop in value, the simultaneous public relations efforts to make ivory unfashionable,⁹ and the renewed eagerness of African governments to enforce the ban¹⁰ made trading and marketing ivory much harder and dramatically reduced the number of illegally killed elephants.¹¹

The comeback of elephants since 1989 has surpassed expectations to such an extent that elephants are overrunning park boundaries and eating themselves out of house and home. Conservationists and African governments are currently considering several proposed solutions to this problem: a partial lift to the ivory ban,¹² culling,¹³ fencing,¹⁴ and the expansion of ecotourism.¹⁵ In considering these solutions, they are forced to confront the issues of whether the people of Africa should be forced to give up their land¹⁶ or whether elephants should have to meet "sustainable

Ensuring the Effective Enforcement of the Ivory Ban, 17 B.C. ENVTL. AFF. L. REV. 799, 818 (1990) (in particular, Section V.(A) for discussion).

8. Leakey, *supra* note 3, at 59.

9. Ricciutti, *supra* note 5, at 18. See also Eugene Linden, *Tigers on the Brink*, TIME, March 28, 1994, at 44, 49.

10. Before the ban, governments did not have the manpower to police the regions closely and did not have the resources or money to capture and try offenders. After the ban, African governments simply shot poachers. Ricciutti, *supra* note 5, at 16.

11. Seven hundred sixty-eight elephants in Kenya were killed in 1989; only 12 in 1992. Leakey, *supra* note 3, at 59.

12. Zimbabwe has spearheaded this solution and has been joined by South Africa, Malawi, Namibia, and Botswana in its goal to press for a partial lift to the ivory ban. Ricciutti, *supra* note 5, at 30.

13. Culling is the solution currently used by Zimbabwe. *Id.* at 26.

14. Fencing is proposed by Kenya as a solution. *Id.* at 24.

15. Ecotourism and other non-harmful sustainable uses are endorsed by most wildlife and conservation organizations. Ecotourism may not be practical in most areas of Africa, however. "Only a few of the 35 African countries that still have elephant populations have the potential to develop a significant income from tourism, and it is totally unrealistic to extrapolate the Kenyan example to much of the rest of Africa." *Id.* at 33.

16. The shift of land from human use to animal use may be peaceful and well-planned, like South Africa's effort to obtain funds from the World Bank to fund a "trans-border" park that would join South Africa's Kruger park to one in Mozambique. *Id.* at 34.

A park for elephants and other wildlife that encompasses parts of multiple countries may be one of the best ways to encourage biodiversity. If more than one nation is involved, there will be more room for the elephants and less resentment from the local population for giving up their land. See *supra* Part IV.

use" criteria to survive.¹⁷ Kenya, Zimbabwe, Botswana, South Africa, the Central African Republic, and Zaire are all currently debating the question of human versus elephant needs.

Westerners see elephants as intelligent, awe inspiring beasts -- a "flagship species"¹⁸ in the fight for conservation -- and are convinced that the need to preserve the species should override local human needs.¹⁹ Africans see the elephants as dangerous killers and destroyers of property at worst,²⁰ and as megabeast nuisances at best.²¹ Furthermore, many Africans now believe that westerners' interest in preserving the elephant is merely the latest in a series of attempts to keep Africa from developing and to keep its people poor and unable to compete in the global market.²²

In the summer of 1992, the United Nations Convention on Environment and Development--Convention on Biological Diversity ("UNCED--Biodiversity") was held in Rio de Janeiro.²³ The resulting treaty changed the focus of elephant conservation. Instead of focusing on the preservation of individual species as CITES had, UNCED--Biodiversity seeks to preserve habitats and regions. Biodiversity can only be achieved by intertwining the long-term interests of humans and non-humans so that the advancement of one is not achieved at the expense of the other. UNCED--Biodiversity may be the first step towards the long-term salvation of Africa and the elephant.

17. "Sustainable use" implies different solutions. Eco-tourism is part of the overall picture. Additionally included are Communal Areas Management Programme for Indigenous Resources (CAMPFIRE--Zimbabwe), or simple culling when the number of animals exceeds the land's ability to sustain them. Ricciutti, *supra* note 5, at 32-34.

18. John Waithaka, *The Elephant Menace*, WILDLIFE CONSERVATION, March/April 1993, at 62.

19. See, e.g., David Western, *The Balance of Nature*, WILDLIFE CONSERVATION, March/April 1993, at 52.

20. "From 1982 to '89, elephants killed 500 Zimbabweans." Ricciutti, *supra* note 5, at 18.

21. *Id.* at 19.

22. Waithaka, *supra* note 18, at 62-63.

23. United Nations Convention on Environment and Development--Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 822 (1992) [hereinafter UNCED--Biodiversity].

I. THE ORIGINAL PROBLEM: BEFORE THE IVORY BAN

The original version of CITES listed elephants as Appendix II species. Appendix II includes "all species which, although not necessarily threatened with extinction now, may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival."²⁴ These controls apply both to trade between nations, each of which is a party to CITES, and to trade between a party nation and a non-party nation.²⁵ Though powerful, these provisions were insufficient to stop the wholesale slaughter of the elephant. Because CITES contains no enforcement provisions, only individual member nations could make the decision to impose trade sanctions.²⁶

Poachers continued to hunt profitably:

In May 1989, elephant ivory in Kenya was attracting a price of about \$140 per pound. Elephants were being killed at the rate of close to three a day, even though average tusk size had fallen to about 13 pounds. Each dead elephant could yield about \$3,600 for the middleman or final exporter. The average wage at that time for a farmhand, guard, or factory worker was no more than \$1,000 a year. Park personnel engaged in protecting elephants were earning even less. Is it any wonder that corruption and dishonesty were rampant?²⁷

Additional stumbling blocks to conservation efforts included the bribery of officials and funding shortages for government protection efforts.²⁸ "Payoffs for turning a blind eye ... and other racketeering activities thrived.... [t]ransportation was generally grounded, field equipment was no longer usable, ... and the standard issue of firearms was greatly inferior to the arms used by the poachers. To interfere with poaching was almost suicidal."²⁹

24. CITES, 12 I.L.M. at 1088.

25. Kathryn S. Fuller et al., *Wildlife Trade Law Implementation in Developing Countries: The Experience in Latin America*, 5 B.U. INT'L L.J. 289, 290 (1987).

26. Linden, *supra* note 9, at 44, 51.

27. Leakey, *supra* note 3, at 58.

28. *Id.*

29. *Id.*

During this period, economic and human issues such as poverty, starvation, stagnant economies, and massive loan repayments distracted many African nations from environmental concerns. Moreover, some economists argued that environmental issues should be regulated through the free market and not by governments at all; that African countries should rely on the market to provide for the elephant through such mechanisms as gate receipts at wildlife parks or ivory purchases.³⁰ Unhappily, the market was providing for the elephant's extinction.

In 1989, the New York Times compared 1989 elephant population statistics to 1979 statistics for those countries where the 1979 populations exceeded 50,000.³¹ In every instance, the population had declined to less than one third of its 1979 level. The most significant drops were in Tanzania (316,300 to 80,000), Zaire (377,700 to 85,000), and Zambia (150,000 to 41,000).³² The Kenya Wildlife Service recorded a drop from 167,000 to 16,000 elephants between 1973 and 1989.³³ These numbers, and the stories of brutal killings that accompanied them, were a rallying cry for conservation organizations. The "Save the Elephant" campaign became popular as conservation groups and governments joined forces to push for a total ivory ban.

II. THE NEW PROBLEM: AFTER THE IVORY BAN

The Ivory Ban is the popular name for the change of elephants' classification from Appendix II to Appendix I of the CITES treaty. Appendix I species include "all species threatened with extinction which are or may be affected by trade. Trade in specimens of these species must be subject to particularly strict regulation in order not to endanger further their survival and must only be authorized in exceptional circumstances."³⁴ This ban on ivory trade, coupled with a massive western public relations effort, created an environment in which elephant populations flourished. In Kenya, one of the countries in which elephants

30. See Glennon, *supra* note 7, at 5 (Milton Freedman argued this with respect to Yellowstone Park).

31. N.Y. TIMES, June 2, 1989, at A2 (cited to in *id.* at 4 n.36).

32. *Id.*

33. Ricciutti, *supra* note 5, at 16.

34. CITES, 12 I.L.M. at 1088; see also Sands & Bedecarre, *supra* note 7. See in particular Part I(B) of Sands & Bedecarre for discussion of the prohibitions under CITES.

were most severely hunted, populations have grown from 16,000 in 1989 to 26,000 in 1993.³⁵ This increase has been welcomed by environmentalists and has been highly publicized. To western countries, the elephant's comeback is proof of their governments' commitment to the environment. To the African people, however, the benefit of this recovery is questionable.

The ivory ban was, in many ways, merely a quick fix. The long-term problems such as habitat destruction, resentment by humans, animal containment, and damage caused by the exploding elephant population still exist. Human problems such as poverty and hunger lead to the destruction of elephant habitat and the resistance of the African population towards the creation of parks. As one Zimbabwean remarked, "When we are hungry, elephants are food. When we are full, elephants are beautiful."³⁶ In addition, elephants are hard to contain and often roam outside parks boundaries in search of food, destroying crops and occasionally killing people.³⁷ Finally, the elephant's voracity and increasing numbers lead to massive damage to the parks and cause the local extinction of other animals.³⁸

Furthermore, many Africans view western concerns for the elephant as a colonial design to keep the African people in poverty.³⁹ African villages have little or no opportunity to comment on the "solutions" forced upon them by environmental groups or other international agencies. In addition, very little effort or money has been directed towards educating the affected local populations as to the need for conservation.⁴⁰

35. Ricciutti, *supra* note 5, at 16.

36. *Id.* at 19.

37. Brian Child, *A Perspective from Zimbabwe: The Elephant as a Natural Resource*, WILDLIFE CONSERVATION, March/April 1993, at 60.

38. Western, *supra* note 19, at 53. As a response, however, some ecologists argue that this very destruction has created much of Africa's biological diversity. Without the elephants to clear the land, diversity would not flourish. *Id.* at 53-54.

39. Child, *supra* note 37, at 60.

40. Jeffrey M. Leonard & David Morell, *Emergence of Environmental Concern in Developing Countries: A Political Perspective*, 17 STAN. J. INT'L L. 281, 310 (1991); see also Child, *supra* note 37, at 60-61.

The United States opposed suggestions that it should restructure institutions that give financial assistance to the third world in such a way as to give poor nations more of a say in how the money is spent. *North and South Hold Environment Hostage. Earth Left "Sitting in the Blood on the Floor," Environmentalist Warns*, SEATTLE TIMES, June 3, 1992, at A3.

III. CITES SOLUTIONS CURRENTLY UNDER DEBATE

Elephant recovery in the four years since the ivory ban has prompted a lively discussion about future plans. The recovery of elephant populations means that their Appendix I listing will not last long. All agree that a solution must be found that integrates the needs of elephants and humans over the long-term. However, environmentalists, government officials of all nations, and local populations disagree markedly over how to achieve this integration.

A. *Keeping Total Populations Down Through Culling*

Zimbabwe is one of the few countries that uses culling. Officials use controlled kills to limit elephant numbers and to bring in revenue for the parks.⁴¹ Other countries, such as Kenya, strongly oppose culling as barbaric and inhumane. Richard Leakey, head of the Kenya Wildlife Service ("KWS"), is opposed to culling on ethical grounds. As he says, "There is plenty of evidence that elephants are intelligent, social animals. Can we morally justify culling such creatures? I think not."⁴² Cynthia Moss, a well-known elephant researcher, agrees. She has spent the last two decades with elephants in the Amboseli Park in Kenya documenting familial interactions, responses to death, recognition of her return, and other aspects of elephant life.⁴³ The results of her studies have painted a sympathetic and intelligent portrait of the elephant.⁴⁴

41. Ricciutti, *supra* note 5, at 26.

42. Leakey, *supra* note 3, at 89.

43. This research has heavily influenced the decisions about the manner in which culling is carried out. In order to wreak the least havoc, Zimbabwe uses machine guns to kill off entire female headed groups. Killing off calves only causes stress on the older members of the group, and may create huge generation gaps. Killing off males is not practical. Not only do they travel alone, one male may still impregnate many females. If they are culled it will contribute to inbreeding. By killing off a whole female group, a section of the gene pool is still lost, but culling in this fashion seems to diminish the overall number most effectively with the least disturbance to the rest of the population. See Ricciutti, *supra* note 5, at 26. See generally Cynthia Moss, Interview by Karen Peterson, *Elephants I Know*, WILDLIFE CONSERVATION, March/April 1993, at 38.

44. See generally *id.* at 39-43.

Zimbabwe's response is simple. Most officials and conservationists agree that the elephant is not endangered currently in Zimbabwe.⁴⁵ The populations have increased steadily from 32,000 in 1960 to 52,000 in 1989 to more than 70,000 today.⁴⁶ Zimbabwe officials maintain that these figures show conclusively that there are too many elephants for the habitat.⁴⁷ No one disputes the overpopulation of elephants in the woodlands of Zimbabwe. "[I]t is easy to see what elephants have done to woodlands in Zimbabwe. The story is the same as in the Aberdares: topped, downed, and girdled trees, mile after mile."⁴⁸ There have been a few claims that the elephant's numbers are overstated to justify these operations, but not many.⁴⁹ After a cull, the meat is distributed to local people and, until the ivory ban, the tusks and hides were sold. These uses of elephant products benefit directly the Zimbabwean people. Zimbabwean officials cite preservation of the habitat as their primary concern and main reason for culling: "After all, if habitat is destroyed, [the] elephants perish, too."⁵⁰

Despite international skepticism of their methods, many southern African states have culled for years with no significant pressure from outside groups. Having properly entered reservations to the ivory ban, Zimbabwe is on safe international legal footing in its culling. Due to their prior experience, however, Zimbabwe no longer allows reporters on culling expeditions, fearing the outcry that could result.⁵¹ Zimbabwe wants to use the income from culling for conservation efforts to benefit, amongst others, the elephant.⁵² To this end it leads the effort to partially lift the ban, so that Zimbabwe may be allowed to sell its stockpiles of ivory.

Culling seems to be an acceptable solution for Zimbabwe in the short term. Many ecologists accept culling as an unhappy necessity in an overall conservation plan.⁵³ It is also popular with the local populations because they benefit directly and indirectly from the cull. In the long-

45. Ricciutti, *supra* note 5, at 32.

46. *Id.* at 16.

47. *Id.* at 26.

48. *Id.*

49. *Id.* Leakey claims that their failure to properly count their rhino population should give rise to skepticism when asked to accept the Zimbabwean's estimation of elephant population. *Id.*

50. *Id.* at 28; *see also* discussion *infra* Part IV.

51. Ricciutti, *supra* note 5, at 28.

52. *Id.* at 30; *see also* discussion *infra* Part III.C.

53. Ricciutti, *supra* note 5, at 32.

term, as more is known about the elephant, culling may come increasingly under fire. In the meantime the nations that use culling will increase their pressure on the international community to allow a return to ivory trading.

B. *Separating Humans and Elephants Through Fencing*

Kenya leads the way in the use of fencing. Richard Leakey maintains that the only way to keep the conflict between humans and elephants for space to a minimum is to fence the elephants away from human habitations.⁵⁴ If the damage that the elephants inflict on humans is minimized, humans will not resent the elephants as much. In addition, fencing is relatively easy to construct, does not directly harm elephants, helps keep potential poachers out, and has political support.

The reality, however, is that this solution may have unfortunate long-term effects on both human development and elephant survival. Zimbabwe has specifically discounted fencing as an option because the artificial boundaries cause inbreeding and keep the elephants from dispersing.⁵⁵ An inability to disperse can lead to the sort of deforestation experienced in the Kenyan parks. Enclosed elephants destroy their habitat, killing themselves and other species.

The famed Treetops, an animal-viewing hostelry built on gigantic stilts and once enveloped by forest, now stands conspicuously in a large open area. Woodland beyond looks as if a welter of small tornadoes had barreled through. Large trees still standing are scarred by tusks. They will die.⁵⁶

Bush outside the artificial boundaries that is currently cleared by migrating elephants will envelop the area making the land unsuitable for grazing cattle or growing crops and perfect for the proliferation of tsetse flies.⁵⁷

54. *Id.* at 24.

55. *Id.* at 26. Zimbabwe keeps its local population happy by encouraging the villages to take responsibility for the elephant populations through ecotourism and other policy decisions. *Id.*

56. *Id.* at 25.

57. *Id.* at 26.

These long-term effects illustrate the need to find a better solution which will benefit both humans and elephants.

C. *Funds for Conservation from Ivory Sales: A Partial Lift to the Ivory Ban*

This is an emotionally charged issue, and one in which, not surprisingly, the participants often have internally inconsistent viewpoints. No one wants to return to the days when poachers ruled and elephants neared extinction. Even Zimbabwe, which endorses a lift to the ban, wants to continue the moratorium on trade of illegally gained ivory. Conversely, even some pro-ban conservationists like Richard Leakey would agree to a partial lift of the ban in order to sell the ivory from natural deaths.⁵⁸

Zimbabwe has recently increased the pressure by proposing a bilateral treaty with Japan that would allow trade of ivory between the two countries, circumventing CITES.⁵⁹

Prior to the last CITES meeting, in 1992, the International Union for the Conservation of Nature⁶⁰ declared that South Africa and Zimbabwe had sufficient populations and internal controls over ivory to make exporting tusks feasible except for one important rub: There would be no way to distinguish legal from illicit ivory at the importing end.⁶¹

The difficulty is simple: if the ban is lifted, how do we keep the elephants safe?

1. *Foreseeable Problems*

Some conservationists argue that, unless it becomes possible to distinguish illegal ivory from legally obtained ivory, the resumption of the ivory trade in Zimbabwe would threaten elephants throughout Africa.⁶²

58. Leakey, *supra* note 3, at 59.

59. Ricciutti, *supra* note 5, at 32.

60. The IUCN has an African Elephant Specialist Group.

61. Ricciutti, *supra* note 5, at 32.

62. *Id.*

Conservationists also doubt Zimbabwe's ability to protect the elephants from poachers, citing Zimbabwe's inability to protect the black rhino. Veterinarians regularly amputate rhino's horns to remove the incentive for poaching. But not even this was enough; in the last year and a half six dehorned black rhinos were "slaughtered by ... poachers intent on demonstrating that they can slip into the country and kill rhinos with impunity."⁶³

Many conservationists do not want culling to become any more prevalent than it already is. To allow governments to "feed off culling"⁶⁴ would encourage nations with low incomes to supplement their treasuries through ivory sales and to overestimate the numbers of elephants contained within their borders so as to hide this practice. It would be impossible to adequately police "the police."

It is easy to find examples where governments have tried to ease conservation oriented restrictions and have failed. As public pressure over whaling has eased from countries such as Norway, there has been a return to the killing and renewed concern for the species' survival.⁶⁵

In India, massive efforts were made to save the Bengal tiger. Prime Minister Indira Gandhi launched Project Tiger, which established a network of reserves for the tiger, trained wardens, and equipped patrols. By most accounts the project was a success.⁶⁶ The success of Project Tiger, however, is a sham. Reserve managers, whose pay is tied to their performance, regularly inflated the number of tigers.⁶⁷

In China, panda conservation has been on a crash course for many years. While public pressure was high, the Chinese officials gave lip service to panda preservation. Projects to breed captive pandas were created, regular trading by zoos was encouraged, and conservation organizations gave enormous amounts of money to officials for research and panda habitat protection. The project has not worked. Corruption is rampant. Every year, huge numbers of pandas are killed by hunters while

63. Sharon Begley, *Killed By Kindness*, NEWSWEEK, April 12, 1993, at 50, 56.

64. Ricciutti, *supra* note 5, at 32.

65. Begley, *supra* note 63, at 53-54.

66. *Id.* at 56. B.R. Koppikar, director of Project Tiger in 1980, boasted to the *New York Times*, "You can say that there is now no danger of extinction of the tiger in India." Linden, *supra* note 29, at 47.

67. Begley, *supra* note 63, at 56. The estimated number of tigers in 2025 in the wild is now zero. *Id.* at 52.

Chinese officials tell conservation groups that the police were "too busy with other duties."⁶⁸

Another egregious example of easing conservation restrictions in China is the "rent a panda" practice by which zoos, such as Adventure World Zoo in Japan, get a breeding pair on a ten-year loan. The Zoo is supposed to attempt to breed the pair, but they have no breeding program or experts in residence.⁶⁹ The ten million dollars paid to China for the loan is supposed to be used for panda conservation, but many charge that it is being used by officials for their own benefit.⁷⁰

Another important analogy to the difficulties inherent in legalizing the ivory trade is the Colombian program to discourage poaching of caiman.⁷¹ Colombia created government regulated breeding ranches where ranchers could raise caiman for profit as long as five percent were released into the wild. Instead of helping to preserve the species by making it profitable, these ranches have become covers for the illegal trade as poachers "launder" illegally obtained crocodile skins through the ranches.⁷²

To return to an ivory trade without eliminating dishonesty, greed, corruption and stupidity⁷³ would place the elephant in far greater danger than currently exists. A return to the ivory trade would mean a return to the days of corruption and poaching and prove once again that conservation cannot be adequately achieved through the free market alone.

2. *The Foreseeable Benefits*

The problems involved in a legal ivory trade may not be insurmountable. An effort to genetically "fingerprint ivory" is underway

68. *Id.* at 52. Pandas are not expected to survive this century. As long as there is no safe habitat for them in the wild, they will die out. The difficulties inherent in panda mating ensure that pandas will not exist if efforts to save the species are left solely to captive breeding programs. *Id.* at 53.

69. *Id.* at 52.

70. *Id.*

71. Caiman are "cousins" of crocodiles. *Id.* at 53.

72. *Id.* In addition, much less than five percent of the captively bred caiman are released into the wild. *Id.*

73. *Id.* at 50. "We nearly wiped out the beast of the field. Then we tried to save them. Now greed, corruption and stupidity are finishing the job that bullets began." *Id.*

that could make the sale of illegal ivory virtually impossible.⁷⁴ The current "shoot to kill" policy may be sufficient to deter even the most desperate poacher.⁷⁵ If a way can be found to ensure the honesty of the officials charged with regulating the trade⁷⁶ the African people could derive numerous benefits from the ivory business.

The foremost gain would be a new source of funds to finance conservation efforts.⁷⁷ These funds could be used to compensate individuals and villages for damage done by elephants, to hire more troops with better weapons to fight poachers, to buy land and expand the parks, and to educate people on the need for conservation. Conservationists have high hopes that once local populations realize that conservation is in their own best interests, they will cooperate willingly with these efforts.

IV. UNCED--BIODIVERSITY: SOLUTIONS FOR FUTURE CONSIDERATION

CITES primarily emphasizes the preservation of individual endangered species. Unfortunately, the decision about which species to save under CITES is not made according to a logical system, but haphazardly, based often on the "cuteness" factor. Because the cute animals are the ones for which raise public sympathy, outrage, and dollars, these animals are more likely to be chosen.⁷⁸ This concentration creates a dilemma for conservationists about whether to spend money on sustaining the last tigers or pandas when the same amount could probably save several other albeit less well-known species from extinction.

74. See generally Nicholas Georgiadis, *Fingerprinting Ivory*, WILDLIFE CONSERVATION, March/April 1993, at 72.

75. A prominent southern African conservationist noted that Botswana military units "killed half the poachers and let the rest go home to tell the story." Ricciutti, *supra* note 5, at 16.

76. No one has yet proposed a way to ensure adequately the honesty of officials who would police the kills or count the elephants.

77. Zimbabwe's arguments about raising much needed funds by the sale of ivory is disingenuous. Extra funds could be obtained merely by raising the cost of admission to the wildlife parks. To enter Kenya's parks costs \$15, to enter Zimbabwe's, admission is free. If Zimbabwe were serious about its intention to use funds to further conservation efforts, the estimated \$50 million that Zimbabwe would make from the sale of ivory could be obtained by raising the cost of admission to two dollars. Begley, *supra* note 63, at 53.

78. If a species is photogenic -- like elephants, whales, or harp seals -- the chance that it will evoke public concern is increased significantly. This is the "cuteness" factor.

The preoccupation of CITES with individual species also forces conservationists to concentrate solely on the advancement of one species, sometimes to the detriment of other animals or habitats, creating some uncomfortable choices. For instance, if mink whales are destroying the food supply of the protected blue whale, should they be hunted to ensure the blue whale a chance?⁷⁹ If the African parks are being deforested, should the elephants be culled, the "profitable" cattle be removed, or the human enterprises shifted to allow the indigenous species -- antelopes, zebra, giraffe, ostrich -- to return?⁸⁰ If the only way to save the rainforests is to remove the people, should the rainforest or the humans lose? CITES exposes all our inadequacies as decision makers.

Conservationists' experience with CITES demonstrates the need for a new "custom" that would protect the environment and endangered species⁸¹ through a change in focus from individual species to global resources and habitat preservation.⁸² For environmentalists, this new custom would also be a welcome change from the obstacle of national sovereignty, and the sacrosanct right to destroy one's own country implied therein.⁸³ The result of these discussions and ideas was the UNCED--Biodiversity treaty of July, 1992.⁸⁴

A. *A Conservation Framework*

The UNCED-Biodiversity treaty is the first attempt to create a legal framework for the complex interrelationships that exists between species. The goal of the treaty is to provide a plan and statement of principle that will guide steps toward planet wide protection of the environment. But what exactly does biodiversity entail?

Biodiversity obviously has something to do with pandas, tigers and tropical forests. But preserving biodiversity is a

79. See Begley, *supra* note 63, at 54.

80. PAUL R. ERLICH & JONATHAN ROUGHGARDEN, *THE SCIENCE OF ECOLOGY* 603 (1987).

81. Glennon, *supra* note 7, at 10; cf. Leonard, *supra* note 40, at 284.

82. Glennon, *supra* note 7, at 34-35.

83. *Id.* at 29.

84. The United States became a signatory on July 4, 1993. WASH. POST, June 16, 1993, at A14.

much bigger job than protecting rainforests or charismatic megafauna. It's the job of protecting all life -- microscopic creepy-crawlies as well as elephants and condors -- and all life's habitats -- tundra, prairie and swamp as well as forests.⁸⁵

According to the preamble to the treaty, biodiversity has "ecological, genetic, social, economic, scientific, educational, cultural, recreational, and aesthetic" value.⁸⁶ In other words, humans have an obligation to prevent the extinctions of species and habitat destruction because diversity has an intrinsic value.⁸⁷ For example, biodiversity recognizes the importance of biological resources to indigenous and traditional communities and the respect that those communities have for those resources.⁸⁸ Economists prefer a biologically diverse environment because it mimics their concept of a free market. Finally, and perhaps most importantly, knowledge of ecology suggests that the more diverse an environment is the more resilient it is. To ignore the interaction among species, or to allow one species free rein, is to invite the destruction of all.⁸⁹

B. *Legislating Biodiversity*

Some economists and advocates for developing nations believe the human-determined free market should decide how much and what will remain. In a free market, a local population can earn a return on its investment by using market forces to determine the allocation of

85. Donella H. Meadows, *Preserving Biodiversity is Protecting Life on Earth*, L.A. TIMES, May 13, 1990, at M4, cited to in William M. Flevares, Note, *Ecosystems, Economics, and Ethics: Protecting Biological Diversity at Home and Abroad*, 65 S. CAL. L. REV. 2039, 2046 n.38 (1992).

86. UNCED--Biodiversity, 31 I.L.M. at 822.

87. Glennon, *supra* note 7, at 7; see also, Tracy Dobson, *Loss of Biodiversity: An International Environmental Policy Perspective*, 17 N.C.J. INT'L L. & COM. REG. 277, 282-87 (1992).

88. UNCED--Biodiversity, 31 I.L.M. at 822.

89. See Western, *supra* note 19, at 52.

resources.⁹⁰ Environmental groups have achieved notable successes in the conservation of endangered species by manipulating market demand.⁹¹ By allocating its resources, a local population can realize a return on the resources spent preserving this quasi-property right.⁹² In other words, villagers would be able to decide, by allocating water, food, and space for the elephants, how many elephants should live. The villagers could then use those excess elephants to feed themselves, to bring in tourists, or to sell to game hunters.⁹³

Unfortunately, a human run free market incorporates some uncomfortable externalities. What if the local population decides that the optimum number of elephants, or any other species, is zero? How "profitable" will the species have to be to be "worthwhile"? How does one value a species? What about those benefits to which the free market does not assess cost easily, such as the benefit a person receives from watching a wildlife conservation program about elephants on television? International externalities, such as those illustrated above are the result when a free market is determined at the local level and why many believe that such a market will not result in the optimum level of biodiversity.

C. *Specific Conservation Provisions*

Besides creating a renewed call for conservation and a framework in which conservation can take place, the UNCED--Biodiversity treaty

90. See Robert Housman & Durwood Zaelke, *Trade, Environment, and Sustainable Development: A Primer*, 15 HASTINGS INT'L & COMP. L. REV. 535 (1992); see also Child, *supra* note 37, at 60.

91. Linden, *supra* note 9, at 49. Pressure on the fashion industry in western nations helped halt precipitous declines in spotted-cat populations during the 1970's. International condemnation of ivory-consuming nations has granted the elephant at least a temporary reprieve. *Id.*

92. Housman & Zalke, *supra* note 90.

93. For a discussion of the benefits of this plan, as applied in Zimbabwe, see generally Child, *supra* note 37, at 60-61. Child writes enthusiastically of what this policy has accomplished for African wildlife. Local villagers are receiving more funds and are working towards biodiversity in the hopes of substantial gains from ecotourism. Child does not address the problems with this individual plan. He does not discuss what will happen if there is a drought, if local food supplies dwindle, or if international economic downturns decrease the number of visitors to parks. If biodiversity is assessed in terms of what it does for humans, it will lose out when human needs become pressing.

contains several provisions that can aid the elephant, specifically those provisions promoting research, education, sustainable use and sustainable development transfers.

1. *Research*

Our lack of knowledge about the biological world around us is a huge obstacle when we try to make conservation decisions. "To an astonishing degree, ecologists do not know what organisms occur where today, so that changes in distribution and abundance often are difficult to document."⁹⁴ Even in the United States, "which seemingly would have been explored thoroughly ... species that were thought to be endangered have ... turned out to be widespread and common. [While] [o]ther populations and species have disappeared simply because no one knew that they were endangered in the first place."⁹⁵ Even where ecologists do have data, they are restricted to simple models to interpret the vast complexity of nature.⁹⁶ The framers of the UNCED--Biodiversity accord are aware of this problem and have called for the establishment of "programs for scientific and technical education in measures for identification, conservation, and sustainable use of biological diversity."⁹⁷ Nations can certainly afford to put more money into research: "only a few tens of millions of dollars per year [are spent] in basic [ecological] research.... In contrast, our species spends roughly ... \$1.4 billion *per day* [on defense]."⁹⁸ The UNCED--Biodiversity treaty also recognizes that we cannot delay our decisions in the meantime for lack of "full scientific certainty."⁹⁹

94. ERLICH & ROUGHGARDEN, *supra* note 80, at 609-11.

95. *Id.* at 611.

96. *See, e.g., id.* at 64. All modeling currently used is simplistic compared to the complexity of interrelationships between species.

97. UNCED--Biodiversity, 31 I.L.M. at 827.

98. ERLICH & ROUGHGARDEN, *supra* note 80, at 612.

99. UNCED--Biodiversity, 31 I.L.M. at 822.

2. *Education*

Article 13 of the UNCED--Biodiversity treaty concerns public education and awareness of the need for biodiversity. It requires that the signatories "promote and encourage understanding of, and the measures required for, the conservation of biological diversity."¹⁰⁰

This provision is aimed at educating two specific groups, the first being local populations around the conservation areas. All conservationists and free market advocates agree that the key to conservation success is to get local populations to value their wildlife.¹⁰¹ The second group is the governments of the countries containing conservation areas. At present these countries often view conservation measures as a form of colonialism, and this leads to an uneven and ineffective effort. Until better cooperation exists, "[r]equiring international consensus is likely to lead to the lowest common denominator solutions because environmental costs are externalized in the absence of some corrective action and because of the holdout and free rider problems."¹⁰² It is just as necessary, although this is not addressed in the UNCED--Biodiversity treaty, to educate people in developed countries to value biodiversity, to appreciate their role in preserving biodiversity, and to be prepared to pay for preservation.

3. *Sustainable use*

Sustainable use ("SU") is defined as "the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations."¹⁰³ In other words, biological resources can be used, but not consumed. The concept of SU is one of the cornerstones of the treaty and one of the chief methods by which conservationists hope to give value to wildlife and economic value to preservation efforts. Unfortunately, SU, like the free

100. *Id.* at 827.

101. *See, e.g.*, Glennon, *supra* note 7, at 39. *See generally* Leonard & Morell, *supra* note 40, at 310.

102. Patti A. Goldman, *Resolving the Trade and Environmental Debate: In Search of a Neutral Forum and Neutral Principles*, 49 WASH. & LEE L. REV. 1279, 1294 (1992).

103. UNCED--Biodiversity, 31 I.L.M. at 824; *see also* Ricciutti, *supra* note 5, at 32.

market, still relies on human determinations of "how much" and "of what" rather than on decisions of nature.

The most obvious and widely endorsed SU for the elephant is ecotourism. To many, ecotourism is the ideal solution. Local populations value and protect the elephants because of the income they generate; conservationists are happy because the elephants are safe; and tourists can enjoy seeing one of the most charismatic animals on earth. However, ecotourism is simply not practical for many areas. Political instability, the lack of amenities, and the unsuitability of rainforests for easy elephant viewing all combine to make tourism an impossible goal for some countries.¹⁰⁴ Unhappily, many of the most unsuitable countries are the ones that would benefit most from the added income.

Not all forms of SU are so benign. Ironically, the UNCED--Biodiversity treaty views Zimbabwe's proposed elephant culls as somewhat more palatable than CITES did, principally because culling helps preserve biodiversity in areas overpopulated with elephants. "SU emphasizes the survival of the species, even at the expense of individual animals. With this approach, some die to help pay for others, harvested for profit to support a country's conservation program."¹⁰⁵

SU has caused a great deal of controversy in conservation circles because it clashes with the traditional view of conservation by preservation. There are also dangers involved in SU that are not present in traditional forms of conservation. For all Zimbabwe's assurances, the practice of culling is inexact at best, considering how little is known about determining a viable elephant population level, how stable elephant populations are, and how many animals can be safely culled. Finding feasible alternatives to SU, however, is very difficult.

4. *Sustainable Development*

The most politically controversial provisions of the UNCED--Biodiversity treaty are those concerning wealth and technology transfers, referred to as Sustainable Development ("SD"). Signatories must undertake to "facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity ... and do not cause significant damage to the

104. Ricciutti, *supra* note 5, at 33.

105. *Id.*

environment."¹⁰⁶ The purpose of the transfer is to prevent undue environmental harm that might occur if undeveloped countries industrialize using older technology.

The treaty also states that "developed country Parties shall provide new and additional financial resources to enable developing country Parties to meet the agreed full ... incremental costs to them of implementing measures which fulfill the obligations of this Convention."¹⁰⁷ These transfers involve much more than developed countries providing payments for clean factories and more wildlife refuges in Africa. The transfers involve an equalization of the standards of living between the developed and developing worlds. Without this equalization the destruction of habitat in the developing world will continue.¹⁰⁸

To many people, SD sounds suspiciously like socialism;¹⁰⁹ this was one of the principal reasons that the Bush administration rejected the treaty.¹¹⁰ Wealth and technology transfers, even without restrictions as

106. UNCED--Biodiversity, 31 I.L.M. at 829.

107. *Id.* at 830.

108. In general, "development" as a goal must be de-emphasized. If a country is called "less developed," it will want to "develop." To further the goals of diversity -- encouraging poorer countries voluntarily to preserve their environments and richer countries to give technological assistance and funds to help -- these labels must go. Perhaps calling the "developing" nations "environmentally pure" or the "developed" nations "overdeveloped" or "environmentally damaged" would help. *See generally* Alan Thein Durning, *Long on Things, Short on Time; Consumerism and the Environment*, MAGAZINE OF THE SIERRA CLUB, January/February 1993, at 60 (in which the author stresses that we must change the way in which we consume natural resources and that the first step is to reevaluate how we measure success so as to include commodities, such as leisure time and pleasant places in which to spend it, rather than simply money and possessions).

109. *Earth Summit: President's Caution Justified*, PHOENIX GAZETTE, June 4, 1992, Ed/Op at A14. "The clear expectation is that rich countries will help pay the cost of so-called sustainable development -- managing their development in ways that do no permanent harm to the planet." Terry Altas, *Earthshaking Summit? Rio May Be Turning Point or Just Talk*, CHI. TRIB., May 31, 1992, at 1C.

110. Jeffrey L. Dunoff, *Reconciling International Trade with Preservation of Global Commons*, 49 WASH. & LEE L. REV. 1407, 1432 n.160 (1992) (citing Steven Greenhouse, *A Closer Look: Ecology, the Economy and Bush*, N.Y. TIMES, June 14, 1992, § 4, at 1); Michael Weisskopf & Ann Devroy, *World Leaders Set Course for Protecting the Earth*, WASH. POST, June 13, 1992, at A1; *see* Editorial, PHOENIX GAZETTE, *supra* note 109.

The Bush administration also rejected the treaty because of concern over the treaty's distribution of intellectual property rights. Dunoff, *supra* at 1432. In response to business concerns about patent rights, the Clinton administration drafted and circulated

to use, are not socialism. For African nations to value their wildlife they must receive benefit. For developed countries to show their appreciation of wildlife, they must be prepared to pay.¹¹¹ In this way the international community pays for its enjoyment of biodiversity through increased aid to the host country.¹¹² The United States is currently a "free rider" on Africa's environmental diversity. The wealth and technology transfers contained in the UNCED--Biodiversity treaty give value to biodiversity and conservation.

Others have criticized SD because the receiving nations get to determine how the money is spent.¹¹³ Given the track records of some countries that have distorted the numbers of animals and misappropriated funds earmarked for conservation, the possibility that such handouts will only further line the pockets of corrupt officials is quite real. The solution to this problem, however, lies in increased monitoring and revised monitoring methods, not a rejection of SD.

Although increased bureaucracy is never desirable, funding more international regulatory agencies may be necessary to properly implement some of the proposed solutions.¹¹⁴ The cost of such agencies will be offset somewhat by the savings produced by a decrease in corruption. To accomplish anything, however, these proposed organizations and those already in place must be given more authority to act.¹¹⁵

reservations to UNCED--Biodiversity. This may be a foundless worry. Companies such as Merck and Co. have already begun negotiating biotechnology issues with individual countries. Adam L. Steltzer, *U.S. Biotechnology Intellectual Property Rights as an Obstacle to the UNCED Convention on Biological Diversity: It Just Doesn't Matter*, 6 TRANSNAT'L LAW 271, 297-99 (1993).

111. The European Economic Community has already offered to pay \$720 million for conservation goals under UNCED--Biodiversity. Jeremy Gaunt, *Environmental Woes Persist, But Attitudes Change*, SUN SENTINEL, June 3, 1993, at 6A.

112. Dunoff, *supra* note 110, at 1432; Glennon, *supra* note 7, at 38-40.

113. David Hurlbut, *Beyond the Montreal Protocol: Impact on Nonparty States and Lessons for Future Environmental Protection Regimes*, 4 COLO. J. INT'L ENVTL. L. & POL'Y 344 (1993); John R. Lott, Jr., *No Strings, Biodiversity Treaty Actually a Giveaway to Third World*, PHOENIX GAZETTE, May 22, 1993, at A13.

114. Richard B. Stewart, *International Trade and Environment: Lessons from the Federal Experience*, 49 WASH. & LEE L. REV. 1329, 1347-48 (1992).

115. *Cf. id.* at 1348.

V. OBSERVATIONS AND CONCLUSION

The future of the African elephant is reasonably secure for now. Humankind responded with great energy when the elephant was threatened and will do so again. The elephant profited from CITES, but a treaty designed to save specific species does not make for a good long-term ecological balance. Even though the UNCED--Biodiversity treaty does not contain any specific new plans for the elephant, the treaty's emphasis on the preservation of diversity and habitat will do more for the future of the elephant than CITES did by eliminating many of the conflicts and tensions between humans and elephants.

The UNCED--Biodiversity treaty is encouraging for other reasons as well. It marks one of the first times that humans have admitted their responsibilities to the non-human world in a major treaty.¹¹⁶ CITES and UNCED--Biodiversity are positive first steps but alone are not sufficient to reverse the current trends of species extinction, deforestation, soil erosion, and pollution. That reversal will require a fundamental rethinking of our attitudes towards the world around us.¹¹⁷

Continued development, as we have known it, is no longer progress, it is our death. If we continue blithely on our present path, we will force all other species to make way for humans.¹¹⁸ Some pessimistic ecologists believe that it is already too late to reverse our chosen path and that the destruction of the rainforests and several key species is assured. To them, once a "keystone species" is hit, many others will die out, sealing our fate.¹¹⁹

We do not have to move towards global socialism to save ourselves. We must allow the free market to work properly.¹²⁰ Richer nations and poorer nations must evaluate market costs and benefits correctly. There can be no externalities for this trend to be reversed.¹²¹ This can be accomplished only by aid to the less environmentally damaged countries. If we can help those countries to raise education levels, job

116. UNCED--Biodiversity, 31 I.L.M. at 822.

117. See generally PETER SINGER, *ANIMAL LIBERATION: A NEW ETHICS FOR OUR TREATMENT OF ANIMALS* (1975).

118. See, e.g., Western, *supra* note 19, at 50, 88.

119. Flevaris, *supra* note 85, at 2040 n.5 (citing Edwin M. Smith, *The Endangered Species Act and Biological Conservation*, 57 S. CAL. L. REV. 361, 363 (1984)).

120. See *supra* text accompanying notes 90-91.

121. See *supra* text following note 92; see also Glennon, *supra* note 7, at 5-10.

possibilities, and relative security, ample evidence exists to show that birth rates will decrease.¹²² The West should provide assistance for these efforts because decreasing total population is vital to biodiversity in the long term. It is also apparent that until the West is willing to value biodiversity through technological and monetary assistance, poorer nations will continue to underestimate the value of their resources because of externalities and will continue to exploit them.¹²³ The free market can work; it just needs some assistance. This assistance must come in two ways: changing behavior and views about conservation and eliminating mismanagement, waste, and corruption.

A. *Changing Behavior and Views About Conservation*

It is impossible, and perhaps even undesirable, to change everyone into eco-warriors overnight. Changing behavior and viewpoints takes time, and the faster it is attempted, the greater the backlash. Unfortunately, we have realized the extent of our predicament so late and have acted so slowly that we are now in a position where drastic changes must be made quickly, with little time for changing the public's views and building consensus.

Changing behavior in the more developed nations may be a coincidental byproduct of the UNCED--Biodiversity treaty. Inherent in the treaty is the idea that other countries must be valued for their undisturbed natural resources and that keeping those resources undisturbed is important to the entire world.¹²⁴ If people in the United States start to believe that keeping Africa unspoiled is desirable, they may extend that thinking to other areas. In the short term, we must start preservation efforts immediately for those areas least disturbed in order to minimize future damage. In the long term, we must fundamentally rethink our ideas about development, progress, success, and human interaction with other species.

122. See, e.g., Robyn Cerny Smith, Note, *Female Circumcision: Bringing Women's Perspectives into the International Debate*, 65 S. CAL. L. REV. 2449 (1992); Sorrentino, *The Changing Family in International Perspective*, 113 MONTHLY LAB. REV. 41 (Mar. 1990); BUREAU OF THE CENSUS, U.S. DEPT. OF COMMERCE, STATISTICS AT A GLANCE § 3 (Nov. 10, 1992).

123. See discussion *supra* Part IV.A.

124. See discussion *supra* Part IV.A.

Most importantly, however, this change in thinking must happen soon, before it is impossible to undo the damage that has been wrought.

For the less developed nations, a campaign should be waged emphasizing development that can be obtained without damage to the environment or to native cultures. Once informed of the issues and probable results, these societies may recognize that the harmful development is not worth the cost. As they realize how "developed" nations envy their unspoiled beauty and wish to emulate them, development may diminish as a priority.¹²⁵

B. *Eliminating Mismanagement, Waste, and Corruption*

Essential to maintaining the support of the United States and that of other donating countries is the elimination of mismanagement, waste, and corruption when dealing with donated funds. This can be achieved by changes in thinking, financial management, and the compilation and use of statistics.

The UNCED--Biodiversity treaty addresses changes in thinking and supervision. Thinking of Africa as a place to be exploited for its resources will no longer be easy under the treaty. New administrative agencies will have to be created to distribute and control funds. The funds are not only for saving elephants; they will ensure that local populations can eat when elephants tear down their crops as well. Allowing funds to be used this way may reduce much of the current tension between conservationists and indigent peoples.

The third requirement, a change in counting methods and use of compiled data, is not currently planned. Uniform counting requirements are very controversial in ecological circles, primarily because no one best method exists. We have reached a stage, because of the UNCED--Biodiversity treaty, at which we need a yard stick to measure successes and to ascertain the need for change. In the case of elephants, it may not matter so much whether we get the right number of animals as whether the numbers between Kenya and Zimbabwe are comparable. For other species, such as pandas and tigers, with few remaining individuals and that are so close to extinction, we may have no choice but to count every individual. Counting is important because in the past, funds available for the conservation parks have been tied to how many animals they maintain.

125. See *supra* note 108.

If Zimbabwe were allowed to cull and report the number of elephants it has in whatever manner it wanted, we would have no way of judging the effect of the culling on the elephant population other than by what Zimbabwe reported. If funds are tied to the country, rather than to how many elephants or tigers it held within its boundaries, much of the need to miscount would be eliminated. If a uniform counting method were imposed, the effectiveness of a country's conservation efforts could be more easily evaluated. If a uniform method were imposed upon a country, "miscounting" becomes more difficult because of the ease of verification. Additionally, if funds were not tied to numbers, countries may be less opposed to outside monitoring of their efforts and less likely to inflate or miscalculate their numbers.

UNCED--Biodiversity's new rules must be monitored and renegotiated when necessary. We are trying to correct market deficiencies, but we are doing so with little knowledge about the outcome. The treaty can be an excellent statement of purpose and a welcome starting point. Conversely, the UNCED--Biodiversity treaty may be just the tool needed by those who wish to exploit the environment to justify their destructive activities by creating a way in which countries can justify destroying animals and habitat. To keep the UNCED--Biodiversity treaty from becoming a hindrance to conservation, however, it must be viewed as an introduction rather than a final solution.