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Zimbabwe's Wildlife Conservation Regime: Rural Farmers and the State

Kevin A. Hill[1]

This article examines the rhino and elephant conservation policies of Zimbabwe, focusing on the historical experiences of rural farmers with colonial and post-colonial wildlife policies. It begins by defining the social and political ramifications of the current environmental conservation debate in Africa, and how these are crucially affected by rural people's perceptions of environmental goods. Next, the paper explores the exploitative colonial legacy of wildlife conservation in Zimbabwe, and how that legacy has or has not been transformed since independence. The paper pays close attention to the development of linkages between rural farmers, local conservation NGOs, and local and national governmental bodies. Finally, the paper finds that, while many positive linkages have been made between conservation authorities and rural farmers and ranchers in elephant conservation programs, few such linkages have been made in the various rhino conservation schemes. Since Zimbabwe has been relatively successful in conserving its elephant population, but relatively unsuccessful in stopping rhino poaching, the paper concludes that the development of positive linkages between rural farmers and the state, which include heavy doses of popular participation at the grassroots level, is crucial for any successful natural resource policy.

KEY WORDS: sustainable utilization; popular participation; state-society relations; wildlife conservation.

INTRODUCTION

Rhinos and elephants may seem out of place in a discussion of popular developmental participation. Big game mammals, after all, do not vote,

[1]Department of Political Science, 3324 Turlington Hall, University of Florida, Gainesville, Florida 32611.

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nor do they politically organize themselves. But the rural farmers who have to live in close proximity to these animals *are*, at least potentially, political actors, and can be expected to respond to any wildlife policies made by the central government. Further, the survivability of species such as the elephant and the black rhino cannot be analyzed in isolation from the reciprocal linkages between the animals and the rural people who live near them. In the current Age of the Environment, much ink has been spilled in the popular press and among academics about the plight of Africa's big game. Further, many Western environmental activists have been very vocal about the decline of elephants and black rhinos throughout Africa. Yet this running debate has been framed almost entirely in ecological terms, as if preservation of wildlife for preservation's sake were the only criterion to be considered. With the advent of the World Conservation Strategy and other studies in the 1980s, some debate has shifted to the economic aspects of wildlife conservation and utilization. Yet little research currently exists which examines the relationship between popular participation and conservation in developing nations.

This paper seeks to explore and analyze the connection between big game conservation and rural participation, using Zimbabwe's historical experience with elephants and rhinos as a case study. By exploring the current and historical relationships between Zimbabwean rural people and the wildlife that surrounds them, one can hopefully gain insights into why Zimbabwe's effort to preserve the black rhino is failing, and, almost paradoxically, why the country's elephant population is actually *growing*. The cases explored in this paper clearly indicate that the more rural people are allowed and encouraged to participate in the management of big game, and the more material benefits they accrue, the higher their stake will become in conserving those living resources.

THE CURRENT CONSERVATION DEBATE IN A BROAD PERSPECTIVE

Before launching into a discussion of game conservation in Zimbabwe, one must first consider the global and historical milieu in which the environmental debate currently operates, both in theory and practice. Of particular interest to the present discussion is the long-running controversy over whether or not preservation of ecological resources for preservation's sake is viable as a conservation strategy, especially in the developing world. Many ecologists, such as Leopold (1933), Muir, and others, have argued that nature has the right to exist independently of human wants and needs. Writing about the Western environmental

movement, Rosenbaum (1991) states that "reduced to essentials, environmentalism springs from an *attitude* toward nature that assumes humanity is part of the created order, ethically responsible for the preservation of the world's ecological integrity." Other ecologists and many economists have adopted a human-centered approach toward the environment.

The World Conservation Strategy (IUCN, 1980) is the most completely articulated document this human-centered approach has produced. Taking a position steeped in market logic and rational choice economics, the WCS proposes three major conservation goals: to maintain essential ecological processes and systems, to preserve genetic diversity, and to insure *sustainable utilization* of species and ecosystems. This "use it or lose it" (Hudson, 1989) approach to ecology capitulates to the fact that humans will not conserve something unless it is of immediate or long-term economic value to them. The WCS further argues that economic development and biological conservation are compatible, as long as *economic* choices are tempered with an *economic* logic toward the sustainability of ecological resources (Tisdell, 1989). The Zimbabwean government openly claims to follow this rationale in pursuing its policies of elephant conservation, which include culling elephants and distributing the profits derived from them among the people who live in close proximity to the animals. The black rhino policy includes no such utilization provisions, and does not seek formal, direct integration of the policies and local farmers.

Since the WCS was formulated mostly by ecologists, with input from economists, the document is a formal marriage of ecology and social science which will be needed if academicians and policy makers are to gain a complete picture of how nature and humans interact, hopefully in mutual benefit. But the WCS does *not* complete the picture on human-environment interactions, and as such should not completely inform our understanding of the human's relationship with his or her natural surroundings. As Tisdell pointed out in his 1983 critique of the WCS, and in his 1989 article on "Economics, Ecology, and Ethics," while the WCS is an important first step toward social responsibility in resource management, its ultimate success or failure "will depend upon the realities of politics" (1983).

More specifically, the WCS and its underlying philosophy of rational choice theory cannot directly address any set of values and norms a given society holds toward the human-environment relationship (Tisdell, 1989). A natural resource has its worth determined either by an inherent, quantifiable property (e.g., gold's value in monetary terms) or by a *societal perception* of its value (Karr, 1978). The latter is completely neglected by rational choice theory. Further, this incomplete marriage of ecology and

social sciences neglects to view potential or realized conservation policies and popular attitudes in their proper historical or cultural contexts.

Other criticisms have been leveled against a rational choice approach to environmental conservation. Economists themselves use the Prisoner's Dilemma model (Tisdell, 1983; Wade, 1987) to show that even if a group of like-minded individuals is convinced that wildlife preservation is in their economic self-interest, members of that group may tend toward an immediate, sub-optimal outcome (e.g., poaching and overhunting), which degrades the entire system. A logic of conservation and rational calculations may also be plagued by Eurocentrism, as the anthropologist Marks points out in his study of conservation policy implementation in Zambia:

> Because conventional wildlife management is part of a complex division of labor and knowledge within a relatively homogenous industrial society, it focuses almost exclusively on populations of wild animals within a biological framework of knowledge. This narrow perspective fails to comprehend the consequences of this knowledge under *differing political and economic circumstances* [emphasis added] (Marks, 1984, pp. 10-11).

Clearly, a meaningful view of human-environmental interactions is not satisfied by a strict biological/preservational perspective. An ecological perspective informed by rational choice economics does broaden the lens to include the motive of human self-interest in wildlife preservation or exploitation, and is a perspective adopted by many writers on the subject, as well as a growing number of policymakers charged with wildlife conservation (including Zimbabwe's).

Further, one cannot be satisfied with simply calling attention to the norms and values people hold or potentially hold about wildlife conservation. Indeed, much environmentalist writing today, both by activists and journalists, focuses simply on the "ethical responsibility" (Young, 1990) humanity as a whole shares for the preservation of natural resources. This attitudinal motivation probably drives Western policies on the current worldwide ivory ban. While well-intentioned, such attitudes, which are usually held by upper middle class, white, college-educated North Americans and Europeans (Inglehart, 1990), often neglect the perspective of the rural farmer who must live in the same area as a large elephant herd. As Pollack (1974) wryly states, "it is only the very understanding farmer who can appreciate the value of preserving elephants for foreign tourists when a large bull is destroying his [or her] crops." The Zimbabwean conservation movement and the government have both claimed that the worldwide ivory ban, at least as it was pushed by Western conservation organizations, amounted to "environmental imperialism," and as such was an imposition of values by one culture upon another. While cultural imperialism is a subject which has been much studied and debated, the

rise of international environmentalism may well add another component to that discussion. In the end, the attitudes and motivations different people hold toward wildlife conservation will largely determine policies and, ultimately, animal and human survivability. The proper context of those attitudes, however, must be thoroughly and fairly explored. Thus, the present research is guided by the following hypothesis: *In situations where hostility to conservation has developed among the peasantry, that hostility is best transformed to support through positive state-rural farmer linkages based on population participation, and through government accountability to those directly affected by such ecological policies.*

THE COLONIAL LEGACY OF CONSERVATION IN ZIMBABWE

Beginning with the establishment of the settler colony by Cecil Rhodes' British South Africa Company in 1890, the African population of Zimbabwe endured land alienation unsurpassed anywhere in its scale on the African continent. Through legislation and taxation schemes, rural farmers were either forced into the growing mining economy of the colony or into marginal, fragile scrub, and dustland farming areas. Indeed in 1991, over 100 years after the Pioneer Column established Salisbury, 40% of Zimbabwe's arable land is *still* held by less than 1% of the population, most of whom are descendants of the settlers. But taxation and Colour Bars were not the only schemes used by the various colonial regimes to take the best land for themselves; wildlife preservation schemes also led to land alienation, and created a hostility to wildlife conservation among local people that still must be battled today.

Not only were rural farmers moved off the best land; they were also prohibited from hunting wildlife on the meager lands allocated to them (IUCN, 1988). Suddenly, the Rhodesians became the gamekeepers, and the Africans the poachers. Whereas the local people had once hunted game both for food and ritual, what had once been a practice of everyday life now became illegal. They were even barred from killing elephants and other dangerous animals which threatened their crops. Thus, rural farmers had to suffer the consequences of living with wildlife while reaping no benefits from them, and having no say in their management. In this atmosphere of conflict and obvious lack of concern by the authorities for creating truly meaningful grass roots participation in conservation programs, rural farmers would rather be rid of wildlife than tolerate its presence; consequently, the conservation message had little meaning to these people (IUCN, 1988).

The Parks and Wildlife Act of 1975 marked a change in government policy toward ownership of wildlife resources. Still the basis of Zimbabwe's wildlife conservation regime, it officially recognized that wildlife was the property of those who lived on the land with it. In theory, it transfers ownership of wildlife living in the communal areas of Zimbabwe to the rural farmers living there. Owing to the nature of land tenure, the owners of large commercial ranches have seen more material benefits from this legislation than have the rural farmers. Nevertheless, the 1975 Act does offer a potential watershed transition for human–wildlife relations in the communal areas.

Since the attitudes of rural farmers toward wildlife conservation were formed in the context of colonialist schemes to alienate the rural farmers from the land, these negative attitudes must be seen within the context of a political culture of resistance to colonialism (see Ranger, 1985). Indeed, the nationalist movement, led by ZANU and ZAPU, openly campaigned among the rural farmers to resist the implementation of wildlife conservation policies. Thus, those who were to become the leaders of Zimbabwe in 1980 played a part in enhancing the culture of resistance to wildlife conservation, as part of the overall anti-colonialist struggle. These same people are today part of a government which *enforces* very similar conservation legislation to that promulgated by the UDI regime and its predecessors. How effectively they transform the values and norms of *resistance* to conservation into *support* for conservation will depend very much on how conservation attitudes and motivations are affected by current environmental policies.

THE TRANSITIONAL PERIOD (c. 1980–1981)

According to Shadrack Gutto, former lecturer in law at the University of Zimbabwe: "Conservation is a religion through which a wealthy elite worship nature" (quoted in *Zimbabwe Wildlife*, June 1989b, p. 22). In the Zimbabwean context, the word "whites" could safely be substituted for "a wealthy elite." The history of wildlife conservation *does* carry elements of racism, particularly the early land conservation laws. This legislation left an anti-conservationist legacy among local people, to which Dr. Callistus Ndlovu, MP, referred in Parliament in 1989:

> Let me say that during the struggle for independence, and in fact as far back as the 1950s, there was a great deal of resistance from the African population to any conservation programme. This was not because the African majority was opposed to conservation as a principle, or as a means of preserving the natural resources of this country. It was in part their political resistance. I say this, because at a certain point in time, those of us who were involved in the struggle for independence did encourage people not to cooperate with certain programmes for conservation, and thus might have created an impression not only among our own supporters but also among those who are charged with this responsibility that we are not interested in conservation (Parliament of Zimbabwe, 1989, p. 943).

In independent Zimbabwe, these attitudes still affect the policy environment in which any conservation program must operate. Immediately after independence in 1980, a wave of elephant poaching swept the communal lands and national parks. According to one game warden, as much as 90% of this poaching was not for ivory, but because the preservation of wildlife, especially those in the national parks, was associated with white rule (Timberlake, 1985).

This suspicion of conservation on racial grounds has carried over into the governmental attitude toward NGOs and to some conservation legislation. One example of the latter is the debate over the Natural Resources Amendment Bill in 1981. Part of this bill sought to curtail the authority of the Natural Resources Board, an advisory board to the Department of National Parks traditionally dominated by whites. Previously, the NRB had the authority to block large public works projects if they were deemed by the Board to be harmful to the environment. In an act of mistrust, the amendment took this power out of the hands of the NRB, because, the Minister of Natural Resources and Tourism said, "[such power] could be obstructionist to development in areas neglected by previous governments" (Parliament, 1989). Further, the nature of relations between Government and the NGOs is tainted by the dichotomous racial makeup of the two parties. This was noted in a December 1987 editorial by veteran conservationist Dick Pitman, who said: "Let's be quite blunt; we only have to look at the ethnic composition of most voluntary [conservation] organizations to recognize that we may be in danger of becoming irrelevant" (Pitman, 1987, p. 5). Indeed, of the ten members of the Zimbabwe National Conservation Trust coordinating committee who represent conservation NGOs in 1989, all ten were white.

The seemingly disproportionate white interest in conservation issues is strikingly borne out in the Zimbabwe Parliament. Table I presents "Speaking Capacity Scores" for black and white parliamentarians in both conservation and non-conservation areas for two time periods. These scores are derived by dividing the percentage of actual observed speeches for a racial group by their percentage representation in the House of Assembly. Thus, a score of 1.0 indicates a racial group is speaking on an issue in exact proportion to its overall representation in Parliament, whereas a score of 3.0 shows a group speaking three times out of its proportion. These speeches were drawn from a random sample of all House debates as

Table I. Speaking Capacity Scores

Issue area	All	All	All	NC	NC	NC	Cons.	Cons.	Cons.
Time period	80–82	88–89	All	80–82	88–89	All	80–82	88–89	All
White scores	3.48	2.83	3.17	3.42	1.34	2.46	3.58	5.05	4.32
Black scores	0.38	0.78	0.57	0.4	0.96	0.66	0.36	0.5	0.43
T-value	8.30[a]	2.46[b]	5.83[a]	5.17[c]	0.56	3.17[c]	12.14[a]	6.04[c]	8.70[a]

[a] $p < 0.001$.
[b] $p < 0.01$.
[c] $p < 0.05$.

published by the Government. This table contains four significant sets of facts. First, whites tended to speak out of their proportions on all issues in both time periods. This is probably due to their role as an opposition party in a Westminster-style parliament. Second, while whites speak on nonconservation issues at a higher rate than blacks, this trend is much higher for debates dealing with conservation. Third, whites speak more out of proportion on conservation issues than they do on other issues. Fourth, while the gap in speaking proportionality for the two racial groups on nonconservation issues has decreased over time, the gap on conservation issues has actually *increased*. Clearly, then, whites retain a more obvious interest in conservation issues than do black elites and, by association, the millions of black rural farmers. This situation, and the historical reasons for it, certainly serve to constrain successful implementation of any conservation scheme, and inhibit the establishment of popular participation in conservation and human–wildlife relations.

COMPARATIVE PERSPECTIVES ON CHANGING CONSERVATIONAL ATTITUDES: ZIMBABWE'S RHINO AND ELEPHANT CONSERVATION POLICIES

With the colonial background to conservation fully in mind, let us now examine how the current government has tried to change the rural political culture surrounding wildlife conservation attitudes at the grassroots level. In approaching this subject, we will examine two sets of conservation policies: the Operation Windfall and CAMPFIRE wildlife utilization schemes, and the Operation Stronghold rhino anti-poaching program currently operating in the Zambesi Valley.

Operation Windfall and the CAMPFIRE Program

Under the previously mentioned Parks and Wildlife Act of 1975, hunting and ranching of non-endangered wildlife are allowed in both communal and commercial farming areas, under the logic of sustainable utilization (the "use it or lose it" philosophy). Zimbabwean parks authorities and conservationists assert that only through this approach to game conservation will the long-term survivability of species like the elephant be insured. This rational choice-based thinking is behind Zimbabwe's opposition to the current worldwide ivory ban. Timberlake (1985) gives evidence that the policy of controlled elephant hunting is insuring the species' survival in Zimbabwe. Operation Windfall, which began in 1981, requires that the revenues derived from hunting elephants in the communal lands or in the safari areas near these lands be plowed back into development projects in the affected areas. In the first year of the program, the ivory and meat of elephants produced Z$960,000 to build local infrastructure, schools, and clinics. Further, Zimbabwe's elephant population is now *growing*, and is a large foreign exchange earner as well.

A broader program complementary to Operation Windfall is CAMPFIRE: the Communal Area Management Programme for Indigenous Resources. CAMPFIRE, created by National Parks ecologists, acknowledges that when local natural resources begin to dwindle, communities will move toward a rational system of resource allocation, if allowed to do so. Whereas the colonial conservation scheme specifically prohibited rural farmers from managing their own wildlife resources, CAMPFIRE seeks to have national government work in conjunction with local communities to *broaden* local ownership and management of wildlife and other resources. The program also mandates that any benefits which result from local custody and exploitation of natural resources should accrue to that community directly (IUCN, 1988).

The institutional structure for the management of wildlife and other resources is centered in locally-controlled Natural Resource Cooperatives with nationally-recognized territorial rights over Communal Resource Areas. Under CAMPFIRE, all adults in the community become "shareholders" in the cooperative. Ideally, they receive benefits from income, employment, and production generated by tourism, ivory culling, meat marketing, etc. These Natural Resource Cooperatives are fully integrated into the existing Zimbabwean administrative system of Village, Ward, and District Development Committees at the local level, all of which are under the provincial and national levels of administration (IUCN, 1988).

The current worldwide ban on ivory threatens the successful operation of Windfall and CAMPFIRE. If Zimbabwe cannot sell its ivory on the

world market, argues former Natural Resources Minister Victoria Chitepo, people living near these potentially dangerous and destructive animals will see no benefit in preserving them, and may consequently either allow poachers to operate in the areas or wantonly kill the animals as they grow in number and threaten the local livelihood (Meldrum, 1989). Meldrum also reports on an interview with Mr. Ephraim Chafesuka, chairman of the Guruve District Council. This area borders the large Zambesi Valley concentrations of elephants, and was one of the first of 26 communities to participate in CAMPFIRE. "Why should Zimbabwe get the blame for Kenya's inability to manage its wildlife?" Mr. Chafesuka asked. In October 1990, the Zimbabwean government acknowledged that no widespread culls had taken place since the ivory ban went into effect. Nevertheless, more detailed research on both the international political economy of ivory, as well as on the effects of these bans on Operation Windfall and CAMPFIRE, is needed. Clearly, Windfall and CAMPFIRE are vast improvements in resource management over the colonial era practices of divorcing the rural farmers from wildlife. Further, they are evidence of Zimbabwe's attempt to create a well-integrated conservation system which will hopefully *ameliorate* the colonial legacy of open rural hostility among farmers toward wildlife conservation. There are at least four major reasons for this.

First, the authority of the government in directing conservation is recognized and respected by the local communities participating in the Windfall and CAMPFIRE programs. National Parks officials provide guidance to the local wildlife conservation regimes, and distribute to them profits made from the sale of elephant products. Yet the local units are considerably autonomous in the administration of their own conservation programs.

Second, some measure of earned trust between the local resource cooperatives and the national authorities develops within a framework based as closely as possible on traditional (pre-colonial) methods of wildlife management (IUCN, 1988). Thus, not only are localities integrated into the national conservation scheme, but the local cooperatives may also engage the national authorities within the context of a traditional local conservation metaphor based on the trust that pervades traditional, local societies. Here, the locality, if successfully integrated into the national conservation scheme, may actually internalize the values behind the whole conservation system, thus integrating rural farmers, elephants, and National Parks authorities into the same system.

Third, economic reciprocity develops between locality and government, since monetary gains that come from locally-culled ivory are returned to the local level after the ivory is auctioned by the national authorities.

Here obvious monetary benefits accrue to all involved, whereas in the colonial era rural farmers realized no profit from these resources; in fact, they were a drain on local monetary resources through fines from hunting, etc.

Finally, local conservation officials operating through the resource cooperatives are accountable to their members for the distribution of resources, and the members are accountable to each other in their provision of inputs to the cooperative. Likewise, national parks authorities are accountable to these local cooperatives in providing expertise, and in the distribution of proceeds from elephant products. In the colonial era, no such double accountability linkages existed.

Clearly, these major linkages between rural farmers, elephants, and conservation officers can at least be potentially successful in breaking the culture of resistance to wildlife conservation created among the rural farmers in the colonial era. Operation Stronghold, however, is another story entirely.

Operation Stronghold

Estimates put the number of black rhinos at 1,000,000 continent-wide in 1900 (Pink, 1988, p. 3). At that time they were widely dispersed over all tropical parts of Africa. By the 1920's, agricultural and human settlements in Southern Rhodesia were gradually pushing the species into the arid, tsetse-infested western areas. By 1960, their last great refuge in Southern Rhodesia became the Zambezi Valley, with a few inhabiting the Chipinge area of the Eastern Highlands. By 1980 there were only about 15,000 black rhinos left in Africa, and by 1985 only 4500, half of which were in Zimbabwe. In fact, the Zambezi Valley contains the world's only contiguous population of over 500 black rhinos (IUCN, 1989, p. 27).

Beginning in December 1984, poaching gangs of as many as 16 armed men began crossing into Zimbabwe from Zambia in search of black rhinos (*Zimbabwe Wildlife*, June 1985). Between January 1985 and August 1989, at least 530 rhinos were killed in Zimbabwe, resulting in a poaching offtake of 24.5% in only 4 years (Parliament of Zimbabwe, 1989, p. 2215; *The Herald*, August 10, 1989). According to a National Parks and Wild Life Management report issued in early 1989, between 500 and 600 black rhinos remain in the Zambezi Valley, an area of 11,222 square kilometers (*Zimbabwe Wildlife*, 1989a). In 1985, National Parks quickly established Operation Stronghold, a system of patrols by armed game scouts in the Zambezi Valley (IUCN, 1988). The rationale behind Stronghold is not to kill poachers, but to detect them before they kill (*Zimbabwe Wildlife*, 1989).

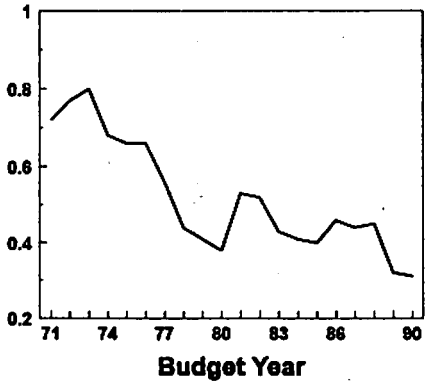

Fig. 1. National parks budget as a percentage of total governmental budget, 1970-1990.

A recent Department of National Parks report estimated that Z$750 per square km must be spent for Stronghold to succeed, if indeed only 500 black rhinos are left in the Zambesi Valley. This figure, however, is twice the 1990 National Parks operating budget; thus, a successful continuation of Stronghold is in severe financial doubt (*Zimbabwe Wildlife*, 1989b). Figure 1 summarizes data on the Department of National Parks' share of the annual national budget from 1970–1990. Since the budget share for the Department has actually declined steadily in the post-independence years, one would not seriously expect Harare to give National Parks or Operation Stronghold the 100% funding increase it needs to survive as currently conceived.

Unfortunately for the black rhino and the wildlife utilization argument, the rhino in its dwindling numbers cannot fit into the present scheme of conservation which is making Windfall and CAMPFIRE a success, since the economic use of rhinos through hunting would appear detrimental to the species' survival. So, whereas rural people can easily see the primarily economic benefits of elephant conservation, an altogether different attitudinal and policy environment surrounds rhino protection. Rural people, under the present policy with Stronghold at its center, see no *economic* incentive in helping to protect rhinos. The situation in fact is often the opposite, since poaching gangs sometimes engage in banditry against local people or bribe them to look the other way. "If only people could see some sort of benefit for helping in the fight against rhino poaching,

laments *Zimbabwe Wildlife*, "a significant part of the battle would be won" (1989b).

Recognizing that the Windfall/CAMPFIRE scheme cannot work with rhino protection, some conservationists have sought to concentrate resources on rhino education campaigns among rural people, particularly school children. Through these campaigns, NGOs and government officials try to imbue in communal people either the nebulous "conservation ethic" for the sake of cultural heritage, or the idea that rhino poaching is an act of economic sabotage against the state. But such platitudes and principles have very little priority for people who derive no direct benefit from rhino conservation. Further, they either view the ecological ethic discussed at the beginning of this paper as wholly inadequate as an orientation toward environmental conservation in the developing world; or they create an image of negative state-rural farmer linkages based on sanctions, seemingly a continuation of colonial practices.

Zimbabwean NGOs have also waged public awareness campaigns about the black rhino to audiences overseas and among those immediately interested in conservation in Zimbabwe. *Wild Kingdom* and *National Geographic* have both produced videos on the rhino, with the former highlighting Operation Stronghold in particular. Articles on the black rhino have appeared in several magazines and newspapers all over the world, with help from information provided by the Zimbabwean NGOs. At home, these organizations have produced and endorsed such things as rhino t-shirts, stickers, sew-on patches, pamphlets, key chains, and even a Z$85 board game in which players try to get rhinos safely out of the Zambezi Valley without being shot by poachers! How effective such measures are with rural people who live in close proximity with rhinos and poachers is questionable.

One can, therefore discern a much bleaker picture of Stronghold than of Windfall and CAMPFIRE. Whereas the main political actors in the latter programs are the rural farmers and local and national conservation authorities, Stronghold's implementation is limited to armed anti-poaching squads, game wardens, and Harare-based Parks authorities, with some input by urban-based, exclusively white-controlled, conservation NGOs. The rural farmers who live close to the rhinos (and poachers) play no part in the management of black rhinos, nor do they derive any tangible benefits from the program. Recalling our analysis of elephant conservation, at least four themes are crucial here. First, regarding governmental authority, rural farmers perceive that government is enforcing its anti-poaching laws from the top-down, as was the practice under colonial authorities.

Second, whereas Windfall and CAMPFIRE tie these conservation policies closely to the traditional-based metaphor of trust, no such linkages

are present in Stronghold. The only part rural farmers play in Stronghold is if they are arrested as poachers or possibly harassed by anti-poaching squads, actions which more closely resemble colonial conservation enforcement practices than state-society linkages based on trust. The partial linkages that exist between Parks authorities and the white conservation NGOs are tinged with the racial suspicions of the past which still pervade many parts of Zimbabwean life. Thus, the colonial metaphor, rather than trust, is still very strong in this particular policy of wildlife conservation.

Third, the reciprocity perspective clearly shows that rural farmers derive no economic benefits from Stronghold or the black rhinos living near them. The NGOs who have raised over Z$1 million in the past few years for Stronghold do provide capital inputs for rhino protection, but have been given no real role in policy formulation (see *Zimbabwe Wildlife*, 1987 and 1989 series). Finally, the parks officials are accountable only to their own standards. Neither the rural farmers living in the Zambesi Valley nor the conservation NGOs are linked to the state authorities through the kinds of accountability mechanisms inherent in Windfall and CAMPFIRE, which are based heavily on popular participation.

Stronghold, then, is hardly discernable from colonial conservation practices. The culture of hostility created by colonial land and resource alienation has not been ameliorated by Stronghold, even though the former nationalist guerrillas are now in control of the government.

CONCLUSION

This paper has demonstrated that no analysis of ecological conservation in the developing world is complete if it does not incorporate a cultural and attitudinal component. In countries where conservation was used as an instrument of colonial land and resource alienation, an understandable hostility to wildlife conservation is bound to develop among the rural farmers who have suffered from these schemes. Therefore, post-colonial conservation policies must be examined in light of these historical realities and must be oriented toward breaking such attitudes of hostility.

Two interesting political variables could potentially derail Zimbabwe's successes in using sustainable utilization as a strategy to conserve the nation's elephant herd. First, if the world-wide ivory ban remains in effect for the foreseeable future, the commoditization of the elephant would be severely hampered. Thus, the immediate economic value for rural farmers to conserve elephants would be lost, if Zimbabwe could not sell its elephant products on the international market. Further, if the Zimbabwean conservation authorities are correct in their belief that the non-economic utilization of

a species would be detrimental to that species' survival, the ivory ban would actually hasten the elephant's demise in Zimbabwe's countryside. Under these circumstances, although Zimbabwe's point would have been proved, the results would be devastating for the African elephant.

Second, the major political question for Zimbabwe has always been the land question. In a country where the one percent white minority still controls almost 40% of the arable land of the nation, questions of redistribution are obviously crucial to rural farmers and white commercial farmers alike. Since the Zimbabwean conservation authorities have been actively encouraging white commercial farmers to use some of their land for keeping wildlife, including relocated black rhinos, some of the land which the government would potentially redistribute has been utilized to support a defined government policy. Politically, this question is extremely interesting. If the more populist of Zimbabwe's politicians are arguing for land redistribution, while simultaneously the Department of National Parks and Wild Life Management is encouraging white farmers to use underutilized land to hold part of the national wildlife estate, a political collision course may be set. Which political faction or arm of the bureaucratic state wins this outcome remains to be seen. Meanwhile, thousands of landless rural people and some endangered or protected species continue to compete for the same scarce land resources.

The Zimbabwean experience with land alienation and the resulting hostility to conservation is probably more extreme than similar experiences for most other African nations. So, are Zimbabwe's experiences and the lessons of post-colonial conservation policies generalizable? This question cannot be fully answered here; more country-specific case studies are needed. But the hypothesis tested here can certainly be applied to other countries: In situations where hostility to conservation has developed among the rural people, the hostility is best transformed to support through positive rural-state linkages based on popular participation, and through government accountability to those directly affected by such ecological policies. Thus, when we focus culturally and attitudinally on resource conservation policies, these policies take on an even wider meaning than most previous studies of human–ecological relationships acknowledge.

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Pastoral Dairy Marketing and Household Wealth Interactions and Their Implications for Calves and Humans in Ethiopia

Sarah J. Holden,[1,2] D. Layne Coppock,[1,3] and Mulugeta Assefa[4]

Surveys of pastoral households in a semi-nomadic Borana community during 1987–1988 were used to test the hypothesis that poorer families living closest to a market town would be most affected by the enhanced opportunity to sell dairy products, which would intensify competition between people and calves for milk and have negative implications for calf management. These poorer families indeed reported the highest rates of milk offtake per cow, and the milk increment was probably sold to purchase more grain for human consumption at the expense of milk intake for the calf. Consequently, this strategy may increase the susceptibility of malnourished calves to disease, especially those from lower-producing dams. Benefits of improved human energy intake from grain and retention of livestock capital must be weighed against risks of calf death and possible malnutrition of people from milk restriction when assessing dairy marketing trade-offs that are most acute for the poor. Opportunity to sell dairy products at favorable terms of trade helps the poorest people survive, and their risks could be mitigated by policies that facilitate grain marketing in the rangelands and interventions that improve calf feeding management, diversify human diets, and create alternative opportunities for women to generate income. The households postulated to be most at risk were identified from a complex, but logical, interaction among factors of distance to market, household wealth, and the quality of milking cows held. This indicates that targeting such needy groups for development

[1]International Livestock Centre for Africa, P.O. Box 5689, Addis Ababa, Ethiopia.
[2]Current address: Livestock Economist, Animal Health Project, c/o FCO (Jakarta), King Charles Street, London SW1A 2AH, United Kingdom.
[3]Current address: Assistant Professor, Department of Range Science, College of Natural Resources, Utah State University, Logan, Utah 84322-5230.
[4]Livestock Development Project, P.O. Box 1052, Addis Ababa, Ethiopia. Current address: 3815 Webster Street, Oakland, California 94609.

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