IMPLEMENTING CAMPFIRE AS A SUSTAINABLE LAND-USE STRATEGY: AN CULTURAL-HISTORICAL ANALYSIS OF WILDLIFE IN ZIMBABWE’S COMMUNAL LANDS

by

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A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

(Geography)

at the
UNIVERSITY OF WISCONSIN–MADISON
1998
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Introduction

During the 1980s, much of Sub-Saharan Africa suffered a series of droughts which profoundly disrupted the production systems throughout the region. The social and ecological ramifications of these drought events were often catastrophic, and as ecologists began responding to the crisis, the debate over appropriate land-use in dryland ecosystems intensified. State-managed programs promoting technological fixes revealed themselves as maladaptive to much of the Sub-Saharan drylands region, exacerbating the very land-use pressures they were intended to relieve. Given the many constraints to land-use, alternatives to conventional development schemes became a priority of many African governments and international development agencies. The government of Zimbabwe provides an example of how this priority has been implemented into a conservation-based development program, known as CAMPFIRE, through its current process of natural resource devolution.

This thesis addresses the concept of CAMPFIRE, the acronym for Communal Areas Management Program for Indigenous Resources, as a sustainable land-use option in Zimbabwe’s ecologically marginal Communal Lands, and in so doing explores the strengths and limitations of devolution in practice. As an alternative to centralized resource management, CAMPFIRE is evaluated from three conceptual points of reference: 1) the failure of state-controlled coercive conservation programs; 2) the
subsequent trend in resource management devolution in Africa; and 3) CAMPFIRE as an appropriate model for effective devolution of natural resource management.

The colonial government of Zimbabwe has a long history of coercive conservation policy, involving the expropriation of land from native farmers and a total ban on indigenous hunting. In effect wildlife became, and still is, the property of the state. Programs implemented for the conservation of wildlife had very little success due to the mistrust and resentment native people have for government initiatives, and also because of the centralized, top-down nature of natural resource management.

After Independence in 1980, CAMPFIRE emerged from the Department of National Parks and Wildlife Management (DNPWLM) in response to Zimbabwe's concern for its wildlife resources, which have become increasingly vulnerable to poaching. However, the Zimbabwe government, like those of so many other developing countries, has been hard-pressed for the funds to effectively manage natural resources and rural development. In response to this dilemma a new model for resource management has emerged, devolving responsibilities for natural resource management to rural communities “in the name of decentralization and popular participation” (Ribot, 1996; p. 40). As Ribot argues, “[t]his movement is based on efficiency, equity and development arguments in which community management is seen to improve performance in each of these spheres” (Ribot, 1996; p. 40). Devolution represents the current trend in natural resource management in much of Africa today.
CAMPFIRE is considered by many as a model for the devolution of natural resource management, with particular emphasis on wildlife (Child, 1991; King, 1994; Murphree, 1991; Murombedzi, 1994; Peterson, 1991; ZimTrust, 1990). The proponents of CAMPFIRE claim that the program’s sustainability lies in the legal access local communities are given to wildlife. Making wildlife accessible to local people offers them the opportunity to profit from wildlife use, usually through carefully managed safari contracts, photographic safaris and wildlife ranching operations. CAMPFIRE is rationalized on the basis that if local people view wildlife as an economically valuable resource, they will have a vested interest in its protection. This approach toward conservation reflects current trends in rural development seeking to redress the equity issues undermining previously failed conservation and development attempts, and the belief that economically-driven programs are sustainable.

This research traces CAMPFIRE’s departure from mainstream conservation and development projects, and evaluates the program’s success at meeting its objectives for providing a sustainable land-use option based on indigenous natural resources in Zimbabwe’s marginal Communal Lands. In the process of understanding the current situation in Zimbabwe, it is important to remember that present conditions in Zimbabwe are the product of its colonial past. Chapter I introduces the geography and social structures of pre-colonial and colonial Zimbabwe within an historical framework, addressing specific factors such as the distribution of arable land, the availability of
natural resources and the socio-political structures as they related to patterns of settlement and resource use during pre-colonial and colonial eras. This historical approach traces the changes in the relationship between local people and wildlife as colonial structures governing land use evolved. With the arrival of the European settler, a tripartite division of land-use emerged between natives, settlers and wildlife. From this discussion, the juxtaposition of social constraints onto a drylands ecosystem elucidates Zimbabwe’s current land-use concerns in terms of access to and control of resources -- specifically wildlife.

In Chapter II, CAMPFIRE is identified as an alternative conservation methodology, fusing indigenous resource use into a sustainable development package. Its role as a sustainable land-use option is explored in terms of the conservation philosophy underpinning the program’s conception. The significance of CAMPFIRE’s institutional role is facilitated by the recent process of natural resource devolution currently underway in Zimbabwe.

Chapter III applies the current regional political ecology framework to analyze Zimbabwe’s CAMPFIRE program, emphasizing the importance of local institutions to their success. Central to the regional political ecology literature are the various pressures placed on local land-users, and the interaction of these pressures within particular tenure systems, tenure being an instrument of state power. Employing this perspective involves three foci: 1) local emphasis on the land user and the social relations impacting land use
decisions; 2) exploring the broader context of these local linkages, socially and
geographically; and 3) situating the study into a historical analysis for clarification of the
present predicament (Neumann 1992). Theoretically, political ecology carries with it a
vast array of interpretations, none of which are mutually exclusive as most of the
literature is grounded in the political economy discourse (Bassett, 1988; Painter, 1987;
Watts, 1985). However, the literature is vast and for the purposes of this study, Blaikie
and Brookfield (1987) provide an appropriate framework, describing it as a combination
of “the concerns of ecology with political economy.” The inclusion of a regional
specificity yields Blaikie and Brookfield’s “regional political ecology,” which is the
approach taken in this work. Inherent to the political ecology discourse is the dynamic
between the state and various social classes regarding the use of natural resources,
including the role of tenure as a means of controlling access to and use of resources
(Drinkwater, 1991; Neumann, 1992; Peluso, 1992; Ranger, 1993). In this thesis, the
relationship between tenure and natural resource degradation is explored through the
current common property theory literature, particularly as it shapes the environmental
perceptions of local peoples.

Incorporating elements of common property theory helps to describe the nuances
of control and resistance between the state and the peasant population. This provides an
important historical dimension to this discussion, establishing many of the causal factors
leading to resource degradation (Peluso 1992). In this context, the impacts of various
internal and external land-use pressures are addressed, such as the local power matrix involving spirit mediums, chiefs and local elites, and their interaction with the larger state structure. By combining some of the concepts of common property theory and regional political ecology, methodological criteria for evaluating CAMPFIRE are established. These criteria are applied in the case study covered in Chapter IV, focusing on the Nyaminyami District within the Omay Communal Lands, CAMPFIRE's flagship project. The various successes and failures associated with this District have provided lessons for more recent CAMPFIRE endeavors. Chapter V concludes this work focusing on the significance and broader implications of CAMPFIRE, and its orientation within current conservation methodology.
Adapted from: Hanson Cooke Ltd.

Fig. 1  Map of Zimbabwe


Chapter One

Historic Land-Use Patterns

Geography

Situated on the high plateau of east and southern Africa, Zimbabwe is landlocked and bordered by Zambia to the north, Mozambique to the east, Botswana to the West and South Africa to the south. The Zambezi River runs along the northern border, while the Limpopo River transects the southern part of the country. A narrow band of mountains form the eastern border with Mozambique while the remainder of the country is characterized by a north-east to south-west watershed. Wooded savanna characterizes this landscape with the exception of the fertile eastern highlands, where the predominant land-use is commercial agriculture.

Historically, Zimbabwe’s landscape has experienced many patterns of use by both human and wildlife populations. Examples include the various modes of production and social organization associated with colonialism, and the migration patterns of wildlife across political boundaries. The demands of human and wildlife populations have varied and changed over time, but all are constrained by one factor necessary for their survival: access to natural resources. Conflict between human and wildlife populations has
become a central concern for conservation interests in present day Zimbabwe, especially as increasing human populations push into critical wildlife habitat. Resource access is a complex matter in present-day Zimbabwe, involving conflict not only between human and wildlife populations, but between various factions of the human population as well. In light of this dilemma, the big questions facing Zimbabwe focus on appropriate land-use options, and strategies to ameliorate the current resource problems inherent to Zimbabwe. It is in the context of land-use that the role of the country’s geography is characterized.

**Agro-Ecological Characteristics**

To better understand the discussion of land-use conflict as it pertains to the periods prior to, during and following colonialism, it is important to establish Zimbabwe’s agro-climatic regions. These regions identify the range of productivity within the physiographic domain, largely driven by the frequency of precipitation. Agriculture is the primary basis of Zimbabwe’s economy, its significance both to the economy and to the cultural land-use tradition being historically rooted in the pre-colonial period. However, the success of livestock husbandry and agricultural activities are subject to the vagaries of an arid landscape where rainfall poses the greatest physical constraint to productivity. Coupled with lingering land-use policies restricting peasant
access to more productive farming regions, the historic cycle of social and ecological inequality persists.

Zimbabwe experiences a single rainy season from November to March, during which some 65% of the country receives less than 750mm annually. Low rainfall coupled with land capability (soil type and slope) significantly reduces the area of arable land for intensive dryland cropping to a mere 7% of the country (Murphree & Cumming). According to a 1982 report undertaken by the Republic of Zimbabwe, the overall arable fraction is estimated to be about 22%; however, the erratic rainfall patterns and length of the growing season over much of the Communal Lands are not conducive to any significant agricultural output (Republic of Zimbabwe, 1982).

Vincent and Thomas (1961) provide a generalized, yet useful agro-climatic typology for examining land-use in Zimbabwe. Updated by AGRITEX, Zimbabwe’s agricultural extension service, this classification system has for the last thirty years provided the primary basis for all land use planning and analysis. The following five agro-ecological regions are recognized:

**Region I**
Comprises less than 2% of Zimbabwe; located in the Eastern Highlands. Rainfall is above 1000mm. Low temperatures and high altitude permit afforestation and intensive diversified agriculture, primarily coffee, tea, tobacco, deciduous fruits and intensive livestock production (Murphree & Cumming, 1991).

**Region II**
Comprises some 16% of Zimbabwe; located in the northeastern-highveld. Rainfall is reliable, ranging from 750-1000mm between November and March. This region is conducive to intensive cropping and livestock production.
Region III Comprises roughly 18% of Zimbabwe; located in the midlands. Rainfall is less reliable, amounting to 500-750 mm; mid-season dry spells and high temperatures are common, making this region best suited to drought-resistant crops and livestock, with semi-intensive farming.

Region IV Comprises 37% of Zimbabwe; located in low-lying areas of northern and southern parts of the country. Rainfall measures between 450-650 mm; periodic seasonal droughts and severe dry spells during the rainy season are usual. Overall, livestock production is suitable to this region, while dry land cropping is not.

Region V Comprises 27% of Zimbabwe; located in areas of very low relief, generally below 900m. Sporadic rainfall usually amounts to less than 450mm. Extensive livestock production and game ranching are the only tenable activities suited to this region.

Adapted from: Murphree and Cumming, 1991

Fig. 2 Agro-ecological Regions

In concert with precipitation, soil integrity is a critical aspect of agricultural productivity. Throughout the country, most soils are deficient in nitrogen, phosphorous and sulphur. Soil productivity has become further challenged by very short fallows (of 2-3 years), during which weeds and grasses proliferate. Minimal fallows are unable to restore fertility to cultivated land in the way that longer (15 year), traditional bush fallows once did (Grant, 1987; Murphree & Cumming, 1991). In addition, fertile, irrigable soils are limited in distribution, with the most extensive areas located in the arid southeast lowveld.

Zimbabwe’s total surface area is approximately 39 million hectares; of that total, 4.7 million ha. are designated as National Parks (12.1%); about 0.9 million ha. as State
Forest; urban and other state land comprises 0.2 million ha., and the remaining 85% of
the land (33.2 million ha.) is designated for agricultural use (Murombedzi, 1994). Of this
33.2 million ha., 12.8 million ha. (or 39% total agricultural lands) are large scale
commercial farms owned by 4800 mostly white farmers, accounting for only 0.05% of
Zimbabwe's total population (Murombedzi, 1994). The average size of these farms is
2,474 ha., with the bulk of the labor force (approximately 25%) living and working on
this land (Murombedzi, 1994; Murphree & Cumming, 1991). This inequitable
distribution and allotment of agricultural land throughout Zimbabwe is central to the
land-use controversy remaining in the wake of colonial rule in Zimbabwe. That peasant
farmers have lost access to natural resources and the production activities associated with
those resources underlie the motives for implementing CAMPFIRE as an alternative and
potentially sustainable land-use option.
LAND DISTRIBUTION IN ZIMBABWE (1987)

<table>
<thead>
<tr>
<th></th>
<th>Large Scale Commercial Farms</th>
<th>Small Scale Commercial Farms</th>
<th>Communal Lands</th>
<th>Protected Areas &amp; National Parks</th>
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<tbody>
<tr>
<td>Total area (km²)</td>
<td>157000</td>
<td>14200</td>
<td>163500</td>
<td>56200</td>
</tr>
<tr>
<td>Total area</td>
<td>40</td>
<td>4</td>
<td>42</td>
<td>14</td>
</tr>
<tr>
<td>% in Natural Regions I - III</td>
<td>51</td>
<td>56</td>
<td>26</td>
<td>15</td>
</tr>
<tr>
<td># of Farms</td>
<td>6000</td>
<td>8500</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Average Farm Size (ha)</td>
<td>2200</td>
<td>125</td>
<td>23</td>
<td>-</td>
</tr>
<tr>
<td>Population Density (ha / person)</td>
<td>-</td>
<td>12</td>
<td>4.5</td>
<td>-</td>
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</tbody>
</table>

74% of all communal land is located in Natural Regions IV and V
75% of all Small Scale Commercial Farm land is located in Natural Regions III and IV
51% of all Large Scale Commercial Farm land is located in Natural Regions I, II and III

LAND DISTRIBUTION BY AGRO-ECOLOGICAL ZONE: 1989 (Percent)

<table>
<thead>
<tr>
<th>NATURAL REGION</th>
<th>COMMUNAL</th>
<th>LSCF</th>
<th>SSCF</th>
<th>RESETTLEMENT</th>
<th>OTHER</th>
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</thead>
<tbody>
<tr>
<td>I</td>
<td>0.7</td>
<td>3.0</td>
<td>0.5</td>
<td>1.0</td>
<td>8.4</td>
</tr>
<tr>
<td>II</td>
<td>8.7</td>
<td>28.7</td>
<td>17.8</td>
<td>33.7</td>
<td>1.3</td>
</tr>
<tr>
<td>III</td>
<td>17.1</td>
<td>17.4</td>
<td>37.9</td>
<td>38.1</td>
<td>18.7</td>
</tr>
<tr>
<td>IV</td>
<td>47.6</td>
<td>25.2</td>
<td>36.9</td>
<td>15.3</td>
<td>28.8</td>
</tr>
<tr>
<td>V</td>
<td>25.9</td>
<td>25.7</td>
<td>6.9</td>
<td>1.9</td>
<td>43.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
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Adapted from: Murphree and Cumming, 1991

Fig. 3 Land Use Distribution in Zimbabwe
Pre-Colonial Land-Use: Agro-pastoral Production Systems

According to Murphree and Cumming (1991), agro-pastoral systems appeared in Zimbabwe some 2000 b.p., when domestic livestock were introduced to southern Africa. Granitic outcrops dominate this region, where light, easily-tilled soils and abundant rainfall provided ideal agro-pastoral conditions. The proliferation of these systems corresponded with increasing settlement patterns, both of which extended along the eastern watershed of Zimbabwe. With cohesive community structures in place, the Shona and Ndebele asserted their power over much of present-day Zimbabwe, extending their cattle based agro-pastoral economy as far as Kimberley, South Africa.

Two main agro-pastoral groups, the Mashona (Shona) and the Matabele (Ndebele), occupied the pre-colonial landscape. The larger of these groups is the patrilineal Shona, who are long-established inhabitants of the country. The Ndebele, concentrated in the western region, are more recent immigrants originating from the Natal early in the 19th century (Kay, 1970). Agriculture provided the base for the pre-colonial Shona and Ndebele economies, the principal crops being millet, sorghum, and to a lesser extent maize, a staple foodcrop thought to have been introduced by the Portuguese after A.D. 1500 (Grove, 1989). Because these crops were susceptible to periods of drought and pest infestations, a variety of activities such as hunting and gathering were important, while iron smelting, gold mining and a degree of internal and external trade also mitigated against the uncertainties of agricultural production (Beach,
1977; Moyo et al, 1990). The greatest insurance against the uncertainties of crop production was, however, domestic livestock, particularly cattle. Although cattle were restricted to areas free of tsetse fly (Glossina sp.), specifically the Matabeleland and the Mashonaland highveld (situated in agro-ecological regions I, II and III), they played a vital role in domestic economies (Murphree & Cummings, 1991; Moyo et al, 1990).

Palmer’s work suggests that at the time European settlers arrived in Zimbabwe in 1890, the Ndebele possessed some 250 thousand head of cattle (Palmer, 1977).

**Conceptualizing “Community”**

The notion of community is important to the common property resource literature, as it is the community of common pool resource users who agree on sets of rules, interact with each other and evaluate the consequences of their individual and collective actions (Oakerson, 1986). It is through this lens of community that pre-colonial land-use is viewed. However, “community” is a nebulous term, open to dozens of interpretations; its meaning in this work is captured by Passmore, who conceptualizes “community” as “a locality.....whose boundaries are defined by the people living in it and recognized by them as an entity, institutions which serve ‘basic needs’, a ‘sense of togetherness’, and the potential to work together” (Passmore, 1972, pp 95-96). In Zimbabwe, many studies suggest that rural people regard as their community the dunhu, the traditional headman’s ward (Cousins, 1993; Passmore, 1972; Scoones & Wilson,
According to Passmore (1972, p. 95), this is "the unit with which there is psychic and social identification by practically all the people." In Cousins' view, "the binding factors were the control over entry into the community exercised by the headman (via land allocation) and the headman's judicial role as adjudicator in disputes" (Cousins, 1993, p. 9).

It is important to note that communities, according to Cousins, can "contain multiple and overlapping identifications and exist as 'communities within communities' with their members living their lives in a number of different contexts" (Cousins, 1993; p.7). The significance here is to understand the community as an entity that is not necessarily harmonious, but rather one comprised of individuals with many different attitudes (Berry, 1989; Drinkwater, 1991; Ranger, 1993). In contrast is the parochial perception of community -- particularly in the paternalistic colonial context -- which conceptualized the indigenous community as a homogenous group who would inevitably have similar stereotyped needs and motivations (Ranger, 1993). Such misperceptions often contributed to poorly planned rural development schemes where the varied needs and contributions of the local community members were overlooked as insignificant, and the imposed structure of indirect colonial rule simplified and weakened local political structures (Drinkwater, 1991; Ranger, 1993).
Local Institutions Governing Resource Use

In an 1890 demographic profile, the human population of Zimbabwe was counted at 650,000, suggesting an overall population density of 1.67 persons/km² (Murphree & Cumming, 1991). Assuming that these data account for permanent population clustering only, large areas of land were unoccupied with respect to settled grazing and agricultural activities, though the activities of transhumance or nomadic pastoralists should not be overlooked in the land-use matrix. According to recent evidence, the basic social and economic unit was the household, consisting of a small grouping of huts to accommodate a man and his wives, children and often relatives (Beach, 1984; p. 20) The most visible unit of society was the village, comprised of varying numbers of households. Clusters of villages formed a nyika, or territory under a hereditary ruler who might be subordinate to one of the large Shona and Nguni states dominating the pre-colonial historical landscape (Beach, 1984).

Most land was under some form of "putative claim, the boundaries of the various polities being contiguous and defined, supported by group mythologies legitimating occupancy and proprietorship" (an important point is that very little of this land was considered ‘open access’) (Murphree & Cumming, 1991, p. 3). Although it is often suggested that common property was the dominant form of tenure in pre-colonial Zimbabwe, there is little consensus in the literature regarding a conceptual definition of communal tenure during this historical period (Cheater, 1990; Drinkwater, 1991; Ranger,
1993; Scoones & Wilson, 1990). In addition, the pre-colonial social structure has yet to be fully understood by historians due to the sheer lack of data. What we do know, according to Beach, is that “the basic underlying fact in the political economy was that society was not based on an equal sharing of resources or wealth ...” (Beach, 1984; p. 21) An example of this unequal distribution of resources is offered by Ranger, where he describes the labor and tribute given to the chief by his subordinates, and the privileges given to “powerful newcomers, who could offer the chief military or economic support” in return for “advantageous lands in preference to long-established but less influential residents” (Ranger, 1993; p. 356). In the case of land, control was the means by which power was mediated between the ruler and his subjects. Beach (1984) suggests that nearly every tract of land was claimed by some ruler as far back as the Early Iron Age, at least in the more heavily populated areas. As Beach states,

[i]n theory, control of the land, of whatever kind, was vested in the ruler as the leading living member of the dominant lineage ... the ruler had not only the right to grant land, but also to withdraw it from some of his subjects in order to grant it to others or to cede it to an outside group. The same principle operated at the village level. The head of the village would grant land to the head of a household, but from then on the fields were usually held by that household” (Beach, 1984; p. 21-22).

As stated throughout the literature, land would assume a semi-private status as long as it was occupied. In terms of usufruct and access, lineage and/or nuclear families controlled the fields they farmed, and to a certain extent, the fallows as well. In this sense, a farmer would have exclusive use-rights to a given parcel of land, confident that it would remain
in the possession of his family through patrilineal inheritance (Beach, 1984; Cheater, 1990; Murphree & Cumming, 1991; Ranger, 1993). Beach observes that this system, in principle, offered “every house and household an equal share of land” but that in practice this was not the case given the disparate quality of land in each unit (Beach, 1984; p. 22). It would be common for a large territory to occupy lush, fertile valleys adjacent to the hot, dry plateaus and lowlands. Access to water, grazing, minerals and hunting areas was uneven given the combination of ecological and political constraints governing land use. Some of the inequity in land appropriation was compensated by the system of usufruct rights, which overlapped the semi-private land holdings. Usufruct rights were given upon permission from the primary land user for access to resources such as trees and medicinal herbs (Berry, 1989; Peters, 1987).

Land and resource utilization in pre-colonial Zimbabwe were informed by an ethno-ecological knowledge system based on the micro-environments of the region (Beach, 1980; Murphree & Cumming, 1991). The dynamics of social conformity and religious sanctions ensured compliance to this regime, where the founding ancestral spirits were regarded as the owners of the land, controlling the frequency of rain, soil fertility and the stability of natural resource production (Murphree & Cumming, 1991). Through the channeling of spirit mediums, it was believed that these ancestors set forth regulations governing the use of natural resources, such as the planting of crops, offtake for fish and wildlife, the harvesting of timber and the use of fire (Murphree & Cumming,
Transgression of ancestral codes of behavior was thought to result in the withdrawal of the bounty of the land and its resources. Clearly, spiritually directed use of the natural resource base reinforced the role of the spirit medium within indigenous social structures, filling a major sphere of power within the local community (Ranger, 1993).

In addition to the spirit medium, local political elites played a major role in regulating access to and use of resources. By virtue of kinship ties and patronage some farmers held special status with the official ruling class, receiving preferences in land allocations, or special access to restricted areas for cattle grazing, for example. Wildlife, a crucial resource both in terms of subsistence and in the cultural identity of indigenous people, was strictly regulated by spirit mediums and political elites. Spirit mediums would designate hunting restrictions and offtake rates for given species, while powerful authority figures had the means to conduct their own hunts and limit access to key species from others. Anderson and Grove (1987) point out that control of hunting resources -- skins, meat and ivory -- was quite structured. As European settlers came onto the scene in the mid 1800s, they too were subject to the prevailing rules of access. One example involves the Ndebele king, Lobengula, who “sought to control outside adventurers by issuing hunting permits, levying fees on firearms and ammunition,” and subjecting specific regions to hunting restrictions. “Unsustainable activities such as collection of ostrich eggs and shooting of female elephants was strictly forbidden on the
part of all hunters -- both black and white” (Peck, 1993, p. 7). Although indigenous institutions of resource governance coexisted for only a short time with the settler population before they were subsumed into the greater colonial system, they did prove their sustainability in natural resource management, a fact not overlooked by those currently proposing CAMPFIRE.

The Early Colonial Years: Disempowerment, Expropriation and Changing Land-Use Patterns

By 1890 the stories told by travelers and prospectors of abundant gold to be found north of the Limpopo River lured the initial wave of European settlers into the lands of present-day Zimbabwe, and by 1894, more than 5000 Europeans had settled. Soon thereafter, the territory came under the administration of the British South Africa Company (BSAC). The quest for gold was soon abandoned, however, as deposits were scarce, and in response, the colonial administration set forth a policy to diversify the economy and encourage white agriculture. In order to secure better lands for settlers, taxation of the indigenous population began; refusal or inability to pay resulted in the confiscation of native lands, which were quickly handed over to European settlers. The imposition of taxes on the native population was a standard approach used by colonial administrators to force native farmers from their lands, and as the European demand for land increased, so too did taxation. Poll, hut, and even dog taxes were implemented,
such that peasants were increasingly forced to seek wage labor in order to pay them. For the European population, this helped to create a steady supply of cheap labor to mines and farms, while undermining the viability of the African farmer facing imminent eviction. Cousins offers the following account:

...the mining companies needed a source of cheap labor in order to be profitable, and the colonial state was instrumental in undermining peasant production and assisting a rival sector of capitalist farming to establish itself in its place. The [Communal Areas] became the home base of a semi-proletariat, which could not support itself without selling its labor power. At the same time this emerging working class was not dispossessed of all its land and continued to engage in below-subsistence agricultural production (Cousins 1993, pp. 13-14).

Loss of land was not the only means by which blacks were kept from participating in the larger economy, as seen in the case of commercial agricultural production. While white agriculture enjoyed the advantage of policies promoting its subsidization, black agriculture was driven to the level of subsistence production only, enjoying none of the advantages of white agriculture. In fact, restrictions were placed on the marketing of agricultural produce from the communal areas, squeezing black farmers out of large-scale agriculture altogether, exacerbating the trend of black wage labor. This had the combined effect of securing the racially structured political economy, while reducing the Communal Lands to a residential and subsistence base (Murphree & Cumming, 1991).

Access to the wildlife resource soon tilted in favor of colonial interests as well. The unrestricted hunting of wildlife subsidized a broad range of colonial activities, from prospecting to homesteading. During the 1870s, white hunters reduced elephant herds by
400-700 animals per year, so that by 1900, less than 4,000 elephants populated Zimbabwe (Peck, 1993). However, unfair competition and ruthless exploitation of wildlife by settlers fueled mounting resentment among the indigenous inhabitants, culminating in the first Chimurenga War of 1896-1897 (Peck, 1993). The unfortunate consequences of these hostilities further depleted wildlife populations, as colonial troops fed themselves off the land. In the aftermath of the revolt, colonial authorities seized black firearms and arrested black hunters. The door was finally closed to indigenous access to wildlife when under the provisions of the Game Preservation Ordinance of 1899, only white settlers were to be allowed the rights and means for wildlife utilization (Murombozvi, 1992; Peck, 1993). Exceptions to this policy were rare; according to Peck, “... a collaborating chief could petition the British South Africa Company administration to retain an old musket as a status symbol and/or hunt local game to avert famine” (Peck, 1993; p.8). The formalization of wildlife prohibitions upon the indigenous population was matched by the freedom given to the settler population to possess firearms and to hunt wildlife with remarkably few restrictions. By 1914, white landowners had acquired the right to “take or kill game upon such land at any time”, so that the liquidation of livestock, motivated by profit, indirectly institutionalized exploitative wildlife extraction (Peck, 1993; p. 9).

The impacts of colonization on local institutions governing natural resources were more gradual. According to Hughes,
[t]he entry of settlers ... did not immediately alter the institutions of chieftaincy ...
[f]or most of the colonial period Rhodesia took land and labor from African residents but sought to preserve their administrative and land tenure systems as vehicles of indirect rule ... they simply pegged off the best farmland (Hughes, 1996; p. 37).

The historical perception of land tenure has received the greatest attention in the literature, and as Ranger asserts, “[t]he classic European notion of communal tenure, whether of the right wing or the left, was based on a false history,” (Ranger, 1993; p. 356). Tenure within the Communal Lands was permitted to remain under perceived common property regimes of management within traditional authority structures. The social structures governing resource management -- that is, the roles of the chief and spiritual medium -- were subsumed by the colonial administration, collapsing complex local political structures into a single chiefdom as colonial administrators sought to facilitate indirect rule (Hughes, 1996; Ranger, 1993). This co-optation was accomplished by the regional colonial administrator whose selection of a community “representative” to address issues of resource management replaced the traditional decision-making body of elders and spirit mediums. Usually, this resulted in the “creation” of a chief or a local headman to ensure the colonial power grip, dismantling the social relations embedded in the indigenous system of resource management (Drinkwater, 1991; Hughes, 1996; Ranger, 1993). With the establishment of the Native Affairs Department in 1902, the African chiefs’ most important powers were transferred to European Native Commissioners (Bucher, 1980; p. 24) As Bucher notes,

the spirit mediums are no longer the sole selectors and installers of chiefs ...
[e]ven though the Commissioners, as a rule, leave the process of electing a new
chief in the hands of the tribal institutions, they are empowered to reject the spirit medium’s choice and have done so fairly often (Bucher, 1980; p. 42).

Bucher also notes that during the period of colonial rule, chiefs became salaried and responsible to the central government in Harare. Given this change, it is important to question the legitimacy of the chiefs during the colonial period and into the present. Ranger argues that the issue of chiefly power has been distilled to three themes since the colonial period:

[0]ne of these is that chiefs have been able to represent themselves as spokesmen for popular defense of “tradition” against unpopular state policies. Another is that chiefs and headmen have been allocating land in return for fees and bribes. A third is that there has been increasing conflict between chiefs and councils over land allocation (Ranger, 1993; p. 363).

Cousins adds that the changing social conditions imposed by colonial rule helped shape the “communal tenure” system during this period as one characterized by:

1) the self-selection of lands rather than chiefly allocation (in the early colonial period at least); 2) inequality in land holdings as (opposed to) the common presumption of an inherent egalitarianism; 3) individual proprietorship and cultivation of arable lands rather than collective use; 4) the emergence of individual entrepreneurship from within this system, as against a supposedly inherent subsistence orientation; 5) a relative security of land holdings (Cousins, 1993; p. 10-11).

In addition, because much of the native land base had been reduced, the flexibility and adaptability of traditional land use methods was also restricted, with significant impacts to the environment. Because proprietorship of wildlife, timber and certain minerals were expropriated to the colonial government, tenure security was lost, and local communities no longer had a vested interest in maintaining what was once
"their" natural resources. As Murphree explains, wildlife could no longer be regarded as a resource "but only as a liability -- someone else’s legal property to either be tolerated with resignation, stolen (cropped or poached), or destroyed, covertly if possible" (Murphree, 1990, p. 2). According to Murombedzi, the demise of the resource management regime under which resources had been managed by communities resulted in an 'open access' situation. As the sense of collective proprietorship was lost, an entrepreneurial element began to emerge (Murombedzi, 1994). The fact that this context has persisted for more than half a century has significantly altered the pre-colonial cultural perspectives relating wildlife conservation with sustainability. According to Murombedzi (1992), "[a]n ironic outcome of expropriation and the erosion of all traditional rights in wildlife is the accelerating degradation of the resource in the face increasing population pressure and decreasing state capacity to regulate resource utilization, particularly to regulate individual resource users as opposed to groups of users." The exclusion of indigenous peoples from access to their former resource bases initiated tribal nationalism and resistance against the British administration; in terms of wildlife this resulted in high rates of poaching and an overall devaluation of the entire wildlife resource base.
Resettlement and the Communal Lands Dilemma

A major element fueling Zimbabwe's civil war of the 1960s and 1970s was the issue of land distribution, specifically the glaring disparity between whites and blacks. As previously mentioned, of the 33.2 million ha. designated for agricultural activities, 12.8 million ha. (or 39% total agricultural lands) have been owned by 4800 mostly white farmers, accounting for a mere 0.05% of Zimbabwe's total population (Murombedzi, 1994). This situation has perpetuated both social and environmental problems stemming from the distribution of commercial and communal farmland in relation to agricultural production potential. As stated by Murphree and Cumming (1991):

... land apportionment policy started at a time when human populations were very low and its impact has since been greatly exacerbated by human population growth and the necessary accompanying growth in livestock and cultivation. ... The changing patterns of statutory land allocation use from 1890-1980 when viewed in the context of land capability reveals that much of the prime agricultural land is not being used and much of the land under cultivation is not capable of sustained cropping (Murphree & Cumming, 1991, pp. 7, 10).

The ecological implications of such land-use policies are reflected in the prevalence of deforestation, overgrazing and erosion, most severe in the communal areas (Murombedzi, 1992, 1993; Murphree & Cumming, 1991; Ranger, 1993).

With the passage of the 1931 Land Apportionment Act, native farmers were relocated to Communal Lands (first known as Native Reserves, and later called Tribal Trust lands prior to Independence in 1980). Communal Lands, the majority of which are located in the resource-poor natural regions IV and V, challenge peasant farmers with
severe constraints to agricultural production. The abundance of wildlife remaining in these regions, however, provided communal residents with a steady supply of protein, regardless of the legal ramifications. Although colonial authorities were aware of the harsh agroclimatic conditions into which they were forcing the majority of the indigenous population, they made no effort to mitigate these circumstances. This deliberate lack of land-use planning set the early stage for conflict between humans and wildlife for the scarce resources existing in those areas. The subsistence effort was further complicated by the fact that resettlement schemes essentially thrust large populations of people into very marginal lands; McIvor (1994) estimates that at the time of Independence in 1980, the Communal Lands population numbered over seven million, with a mean population density of 28 people/km². This combination poses significant implications for the welfare of both humans and wildlife.

The predominant motive for forced evictions and resettlement during the colonial era was for the purpose of creating European-owned commercial farms, but large tracts of land were also set aside for the establishment of parks and recreational areas. For many of these early settlers, recreation consisted of trophy hunting for the wildlife that was abundant throughout Zimbabwe, fueling settler demands for “protected” areas, as well as the prohibition placed on local communities against hunting game, even for subsistence needs. As told by J.H. Peterson (1991), “[w]ith the establishment of a colonial government, all wildlife became the property of the state. Since the state was in
the hands of white settlers, this effectively meant that legal utilization of wildlife was the exclusive property of whites (Peterson, 1991; p. 12).”

The expropriation of land and associated resettlement schemes have exacerbated environmental and social instability throughout Zimbabwe, most especially in the Communal Lands. In the process, state and local relations have suffered due to the coercive history of government imposition of natural resource management practices. In turn, a profound mistrust of government has helped cripple the implementation of potentially sustainable conservation measures. The relationship poverty and poaching became important to both ecologists and social scientists concerned with sustainable rural development, who began proposing alternative approaches.

Land-Use Since Independence

The post-colonial context of land-use has undergone rapid change. As the war of independence was largely centered around the land issue, a strong nationalist movement promoted the need for redistribution of land to the native population to redress the imbalances of colonial expropriation (Murombedzi, 1994; Ranger, 1993). At the time of independence, the communal areas were experiencing high annual rates of population growth, about 3%, and resettlement appeared to be the ideal solution to this potential crisis (Murombedzi, 1994). The newly independent Zimbabwe thus began the process of land redistribution by acquiring land from large-scale commercial farms (mostly white-
owned) on a willing-buyer willing-seller basis, to resettle thousands of smallholders from the communal areas (Murombedzi, 1994). However, primarily due to lack of available land for purchase, by 1991 only 51,000 families had been resettled on 3.3 million ha of land. Resettlement was further constrained by the unavailability of funds to provide the necessary infrastructure to facilitate settlement (Murombedzi, 1994). However, according to Herbst (1990), the combination of logistical obstacles to resettlement, coupled with the high rate of population growth in Communal Lands, had convinced policy makers that resettlement alone would not solve overcrowding and resource degradation in the communal areas. In response, another significant policy initiative, the Communal Lands Reorganization Programme, emerged in 1986 with a focus on land reform and internal reorganization in the communal areas (Herbst, 1990). The aim of this program was to centralize arable, settlement and grazing land in the communal areas through the process of villagization. The objectives of the CLRP resemble the centralization policies of the 1930s and the Native Lands Husbandry Act (1951), all of which were met with resistance from the smallholder population (Drinkwater, 1991; Ranger, 1993). In fact the CLRP reinforces Murphree and Cummings’ observation that since 1980:

[i]n practice there has been little major change in overall patterns of land use, production and environmental effects compared with earlier decades. The developments of the 1980s can probably best be summarized as ‘more of the same’. (Murphree & Cumming, 1991:14)
Because of the perceived need to reorganize land-use in the communal areas, land-use planning has become the dominant feature of Communal Lands policy since independence (Murombedzi, 1994; Scoones & Wilson, 1989). In general, the process remains very top-down, while local level resource capacity remains largely overlooked, and environmental issues receive "disproportionately little attention" in the policy process (Murombedzi, p. 16). Murphree and Cumming agree that land-use policy has historically tended to shift its focus between "economic and agricultural imperatives" on the one hand, and "equity and political considerations" on the other (Murphree & Cumming, 1991, p. 14). Ecological considerations have been given minimal consideration, and as land-use policy remains fragmented in Zimbabwe, Murombedzi calls for a "more holistic and synchronized land use and environmental policy" (Murombedzi, 1994, p. 16). Given the emphasis of land-use policy on increased agricultural production of export crops, there have been potentially negative consequences for the marginal agro-ecological zones IV and V. This lack of environmental consideration is identified as a major weakness in government land-use policies, and according to Murphree and Cumming resulted from:

(government's) failure to address the institutional components (land tenure and resource rights regimes, management options, motivational dynamics) for efficient and sustainable use of land [in agro-ecological zones IV and V] (Murphree & Cumming, 1991, p. 18).

Internal factors contributing to Communal Lands degradation involve state assumption over the control of resources, which not only worsened resource management
in the communal areas, but did so by weakening local resource management institutions. This in turn eroded the social mechanisms regulating resource use such as the stratified power structures of elites, spirit mediums and even territorial cults (Drinkwater, 1991; Murphree & Cumming, 1991; Ranger, 1993). In addition, because of its limited financial capacity, the state was unable to police successfully local resource use. The devaluation of local environmental knowledge combined with the lack of state regulation of the natural resource base led, in some cases, to what Hardin refers as a “tragedy of the commons” situation (Hardin, 1968).

While centralized land-use planning dominated the early independence years, a number of both large-and small-scale land-use plans have emerged in the communal areas encouraging the sustainable utilization of natural resources in these marginal areas for economic development. In concert with this recent shift in land-use policy is the process of decentralizing the system of local government as the basis for pursuing community-based resource management. Notable among such plans is the CAMPFIRE program, which is based on the devolution of wildlife resource management to the local level.
Chapter Two
Devolution of Wildlife Management: the birth of CAMPFIRE

Devolution of Resource Management

Throughout Africa, devolution of natural resource management is the current trend (Ribot, 1996). While there are many who look to devolution as the only means to redress the failures of former resource policies, there is also reason for skepticism. The main concern of devolution critics is the absence of local institutions to which authority can be devolved (Murombedzi, 1992, 1994; Ranger, 1993; Ribot, 1996). In the case of Zimbabwe, local institutions capable of managing natural resources, particularly wildlife, disintegrated under nearly a century of colonial rule (Ranger, 1993). The existing institutional infrastructure is very much shaped by the legacy of indirect colonial rule, where local elites maintain authority through patronage and corruption (Ranger, 1993). Devolving authority to local communities, then, often means increasing the private coffers of local elites whose interests are not concerned with those of the community (Ribot, 1993). According to Ribot:

[w]ithout locally accountable representation the ostensible objectives of participatory approaches are unlikely to be met. There are no guarantees that the social or ecological externalities of (wildlife) management will be internalized, there is a great risk that the benefits will not return to the community as a whole ... like colonial rule, it can also strengthen and legitimize the non-representative, unaccountable governance forms it relies on (Ribot, 1996; p. 44).
Wildlife management in Zimbabwe began its slow process of devolution after the passage of the Wildlife Conservation Act in 1960. Under the provisions of this Act, game policy took on a more sustainable role in terms of wildlife protection based on ecological principles driven by the increasing popularity of state safari areas which were generating significant revenue. The response of the government was to expand the hunting concessions to private sport hunting and tourism operators (Peck, 1993). The growth of the wildlife industry in Zimbabwe is rooted in the 1975 Parks and Wildlife Act, in which proprietorship of wildlife resources was conferred upon "owners or occupiers of alienated land", an event which marked both the early process of devolution of natural resource management, and the birth of new community-level approaches toward effective resource management (Murphree, 1991). In short, the language of the Act calls for the devolution of responsibility for wildlife management from the central government to the local communities through the mechanism of Appropriate Authority. Although this marked a significant shift in the power structure of resource management, the granting of Appropriate Authority and associated plans for development remain subject to state approval, and wildlife resources remain the property of the state (Murombedzi, 1994). This process is examined in detail in Chapter IV.
Operation Windfall

During the 1960s, it became clear to ecologists that the survival of wildlife outside protected areas depended solely on the charity of neighboring rural communities, who lacked the necessary incentives to protect a potentially destructive resource without receiving any benefits. Declining wildlife populations, particularly elephant and rhino, were evidence of a poaching problem driven by both the illegal demand for wildlife products (such as ivory) and the retaliations of peasant farmers suffering the destruction of crops and livestock caused by marauding wildlife into village territory.

An early experiment with local conservation development, Operation Windfall (Wildlife Industries New Development for All), was initiated during the mid-1970s in the Chirisa Safari Area of the Sebungwe region generating profits from the culling of 755 "surplus" elephants and the leasing of five year hunting concessions to private operators (Murphree, 1990; Peck, 1993; Zimbabwe Trust, 1990). Cash and products were returned to the local communities participating in this project; the 240 local villagers involved in the program earned $25,300 in wages, and the district councils received $960,000 in revenues over a two year period (Peck, 1993). While observers noted an immediate decrease in the incidences of illegal hunting and an overall improvement in local attitudes toward wildlife, significant gaps in the planning and implementation of Operation Windfall undermined this important progress, and the program was not sustained (Zimbabwe Trust, 1990). In the case of Operation Windfall, local communities
were not included in decision-making and management, and had no voice in the
distribution of the proceeds. Rather, all revenues generated from wildlife use were paid
directly to the National Treasury, and efforts to collect reimbursement went largely
unfulfilled over an extended period of time. In this sense the potential connection
between wildlife conservation and financial benefit was foregone, much to the detriment
of the local community. Lessons from this attempt revealed some critical components
for success, namely the importance of local participation in the planning and
implementation of conservation development plans, and the creation of local institutions
to facilitate these ends (Anderson & Grove, 1987; Murombedzi, 1992; Murphree, 1991;
Peck 1993; Peterson, 1991). From the onset, Operation Windfall missed the opportunity
to establish a truly community-based program by overlooking the one element central to
its success: the needs of the local community. Specifically, the lack of equity in local
representation during the planning of the project coupled with the lack of technical skills
transferred to locals regarding wildlife management played against the potential for local
autonomy. This in turn prevented the formation of an effective common property
management regime. Still, the larger concepts and principles embodied in the plan
inspired a later attempt, known today as the Communal Areas Management Program for
Indigenous Resources (CAMPFIRE).

The emergence of CAMPFIRE was hastened by a series of poorly planned
conventional development schemes, exacerbating the degradation of indigenous
resources. Some of these projects directly resulted from the rapid resettlement of land unsuitable for agriculture. This trend was largely driven by land pressures elsewhere in Zimbabwe, but was accelerated by tsetse fly eradication over vast areas of communal land where large wildlife populations persist, raising concerns over appropriate forms of land use in (Zimbabwe Trust, 1990).

**Communal Areas Management Program For Indigenous Resources (CAMPFIRE)**

In 1986, Zimbabwe's Department of National Parks and Wildlife Management (DNPWLM) initiated a program to address the problems of rural development of communally owned resources, emphasizing wildlife (ZimTrust, 1990). Specific problems included the lack of local participation (emphasizing the need for local institutions), the lack of technical and financial assistance, and the need for clearly defined proprietary rights regarding wildlife resources (Murombedzi, 1992). Ecologists from the DNPWLM devised a sustainable development scheme intended to enable rural communities to manage, and directly benefit from local wildlife. Known as the Communal Areas Management Program for Indigenous Resources (CAMPFIRE), this wildlife-based development initiative uses market incentives to promote economic, ecological and social sustainability. Ecologically, CAMPFIRE hinges on the proposition that indigenous wildlife is likely the most appropriate form of land use in marginal areas where populations of wild animals remain in significant numbers, though this statement
poses some serious equity issues which will be explored more fully in chapter IV.
Economically, it requires the existence of markets for the goods and services that wildlife can provide, primarily in the form of recreation, such as safari hunting or nonconsumptive uses such as photographic tours. Further, these markets should provide returns greater than potential profits from other forms of land use. A core concept of CAMPFIRE is that those bearing the costs of living with wildlife, often for the profit and pleasure of others, should also benefit (monetarily or otherwise) from the utilization of those resources. It is because of these benefits, and their potential for improving the rural standard of living, that CAMPFIRE is linked with rural development (King, 1994).

CAMPFIRE consists of an interdisciplinry group of collaborators involving the Department of National Parks and Wildlife, social scientists from the University of Zimbabwe’s Center for Applied Social Sciences, biologists and conservation experts from the World Wildlife Fund, and institutional, administrative and funding assistance from Zimbabwe Trust (ZimTrust), a local NGO responsible for the overall implementation of CAMPFIRE projects.

The role of the social scientists in this process is to help define the needs of communal populations, interpreting their economic problems and seeking out appropriate social policy and land tenure systems. World Wildlife Fund biologists assist the Department of National Parks staff in maintaining sustainable wildlife populations. Specifically, population counts are taken for key species throughout the communal areas;
carrying capacities are determined based on ecosystem parameters, and a very limited offtake quantity is established per species. Offtake is carefully conducted though culling in the form of trophy hunting, which compensates local communities for the recreational value of the animal. ZimTrust aims to establish the local institutional framework necessary for a viable CAMPFIRE project. This entails establishing local committees (primarily comprised of local elites), involving local people in the planning and implementation process, and creating a mechanism for the distribution of benefits generated from CAMPFIRE activities.

The proponents of CAMPFIRE claim that with the rights to access and use of natural resources in place, rural people can satisfy many of their material and other needs without depleting the habitat important to wildlife, or the wildlife itself. This is based on the assumption that wildlife acquires a value, encouraging its prudent use in the form of safari hunting, photographic safari activities and wildlife ranching. In turn, this may help to restore a perception of wildlife as a valuable resource rather than a worthless nuisance.

The conditions for establishing and implementing CAMPFIRE differ from site to site, giving the program a great deal of flexibility in meeting local needs. Because the social and ecological challenges and opportunities vary from one communal area to the next, it is wrong to assume that this program can succeed based on a single set of assumptions in any given location. However, the all-encompassing assumption that indigenous wildlife is likely the most appropriate form of land use in marginal areas has
significant equity implications which will be given further analysis in the Nyaminyami case study in Chapter IV.
Natural Regions

- High rainfall, suited to specialized and diversified farming
- Moderate rainfall, suited to intensive and semi-intensive farming
- Low rainfall, suited to livestock and wildlife use

Land Use

- Communal lands
- Other lands, including commercial farmlands
- Wildlife areas, including:

  - Districts with appropriate authority status for wildlife management, and Campfire projects being planned and implemented, as at January, 1990.
  - Districts or areas identified as having potential for Campfire projects, as at January, 1990.
  - Components of the Parks and Wildlife Estate that have potential as nuclei for community wildlife projects.
  - Major Zimbabwean protected areas, including national parks, safari areas and some forestry areas.

Adapted from: Department of National Parks and Wildlife Management, Zimbabwe, 1990

Fig. 4 Protected Areas, Natural Regions and Land-Use in Zimbabwe
Chapter Three
Regional Political Ecology and the Role of Common Property Tenure

According to Donald Moore (1993), current analytical discourse on the causes of environmental degradation in the Third World increasingly relies on models of political ecology. Generally speaking, "political ecology focuses on the political, economic and social structures and processes which underlie the human practices leading to degradation" (Neumann, 1993; p. 86). The early roots of this discourse are often credited to Blaikie and Brookfield, who turn to "the shifting dialectic between society and land-based resources," to explain how economic processes determine the way natural resources have been exploited, emphasizing "a concern with the role of the state ... (and) such actions as taxation, food policy, land tenure policy and the allocation of resources" (Blaikie & Brookfield, 1987; p. 17). As Neumann (1992) and Moore (1993) point out, political ecology has come to incorporate questions of resource access and distribution, political rights and processes and technical and development alternatives. In basic terms, Neumann summarizes the elements of the political ecology framework as:

(1) a focus on the land users and the social relations in which they are entwined;
(2) tracing the linkages of these local relations to wider geographical and social settings; and (3) historical analysis to understand the contemporary situation (Neumann, 1992; p. 87)
In this thesis, the efficacy of CAMPFIRE is analyzed through this political ecology lens, with an historical micro-level emphasis on rural farmers of the communal areas and the local social structures governing their land-use decisions. These local land-use dynamics are placed in the broader historical context of social relations at the national level, examining the impacts of land-use policy during periods of pre-colonial, colonial and independence. The spatial and temporal impacts of these decisions on the local social and ecological environments provide the context for the recent resource "problems" in Zimbabwe’s Communal Lands, inspiring the creation of community-based development schemes such as CAMPFIRE. Some of the perceived problems characterizing the communal areas have been previously addressed: uneven access to resources, exploitation of wildlife resources and lack of tenure security and defined resource rights. It is the latter set of issues, tenure security and defined resource rights, which provide the theoretical focus for this political ecology case study and which success will be measured against.

Before engaging in the common property discourse, it is necessary to characterize Zimbabwe’s Communal Lands. Given the turbulent history of Zimbabwe’s Communal Lands, the idea that a genuine system of communal land tenure exists has received much criticism in the literature. The significance of this debate is that it challenges ideas of tradition, the implications of which play into the dialectics of state-peasant relations. Ranger contextualizes this claim by stating:
the irony is that the term (communal areas) has been adopted in independent Zimbabwe because it is thought to reflect an African attitude to land rather than a European one... yet the whole notion of 'communal tenure' is preeminently a European construct (Ranger, 1993; pp. 354-355).

It was during the early period of colonialism that the idea of communal tenure arose (Cheater, 1989; Cousins, 1993; Drinkwater, 1992; Ranger, 1993). Chiefs no longer wielded control over land, and colonial authorities left peasants to their own devices, so that as people moved away from their old centralized villages, they appropriated land to themselves (Beach, 1980; Ranger, 1993). As peasant communities developed, "land allocation was local and consensual, at least until the interventions of the colonial state from the 1920s onward" (Ranger, 1993; p. 357). The validity of communal tenure underpins the entire concept of CAMPFIRE, yet given the evidence in the literature it appears that it is based on misperception. Evidence suggests it is the state rather than local community that continues to govern resource use in the Communal Lands, despite the current trend toward natural resource devolution (Cheater, 1989; Cousins, 1993; Drinkwater, 1991; Hill, 1997; Murombedzi, 1994; Ranger, 1993; Scoones & Wilson, 1989). Given this situation, can we assume the state will completely relinquish its power, and is it a realistic objective to apply the principles of common property regimes to the problems of access to and overexploitation of wildlife resources in Zimbabwe's Communal Lands?
Land Tenure Systems

As Elinor Ostrom (1990) points out, the issue of “how to best govern natural resources used by many individuals in common” remains unresolved (Ostrom, 1990; p. 1). Some scholars have promoted state control as a means of abating “tragedy of the commons” situations, while others look to privatization of these natural resources as the solution to overexploitation. Before addressing issues of common property resources, some discussion of the “tragedy of the commons” and state control approaches will help to situate CAMPFIRE’s institutional orientation as an alternative model.

In his 1968 article “Tragedy of the Commons,” Garrett Hardin articulated an argument that promoted privatization of resources held in common. Hardin inferred that when a natural resource is open to everyone without limit, the process of overexploitation is inevitable: “ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons” (Hardin, 1968; p. 1244). This hypothesis has received tremendous criticism, primarily because of its fundamental confusion between an open access situation and a common property system. Open access denotes the absence of any system of rights, so that it is not a property regime at all (Feeny, 1992; Murombedzi, 1994; Ostrom, 1990; Peck, 1993). In the open access situation, there is an absence of accountability on resource users to refrain from use; “everyone has the privilege to use the thing but no one has the right to exclude others from the use of the thing ... there is no defined group of users and the benefits of
use ... can accrue to anyone” (Bromley & Cernea, 1989; p. 871-872). On the other hand, common property is in essence ‘private property’ for the group, based on what Ostrom calls a “man-made resource system” (Ostrom, 1990; p. 30). This system is based on the guarantee to each individual member of a clearly defined group that he will not be excluded from the use or benefit of something which is used by other members of that group. Individual members have both rights and duties with respect to use rates and maintenance of the commonly owned resource, as well as the right to exclude other individuals who are not members of the group from the use or benefit of the resource (Murombedzi, 1994; p. 22).

In the real world context of resource use most scholars agree that there are few situations in which resource utilization is purely open access; many are approximations of open access, usually resulting from a collapsed tenure system, where some elements of that former system remain intact (Feeny, 1992; Murombedzi, 1994; Ostrom, 1990). The conclusions drawn from these studies argue that open access inevitably leads to resource degradation because of its inability to exclude others from use of the resource. Yet as Murombedzi points out, degradation of common property resources “usually occurs after the destruction of existing communal tenure regimes (Murombedzi, 1994; p. 24). The Hardinesque conditions, then, are not inherent to the common property tenure system, a fact used by the proponents of CAMPFIRE to reinforce the process of devolution of natural resource management.

The role of the state as administrator of use and access to resources is somewhat of an extension of privatization. As Ostrom explains, “proponents of centralized control
want an external government agency to decide the specific (strategies of resource use)”
and she qualifies this claim quoting Carruthers and Stoner (1981, p. 29): “common
property requires public control if economic efficiency is to result from their
development” (Ostrom, 1990; p. 9). Many Third World governments have taken this
policy advice in their regulation of resources such as forests, grazing lands and wildlife.
However, the centralization approach suffers from some false assumptions that, as
Ostrom points out, “presume that agencies have accurate information (concerning such
things as carrying capacity), monitoring capabilities, sanctioning reliability and zero costs
of administration” (Ostrom, 1990, p. 10). This does not reflect reality, and the failures of
many centralized approaches attests to this (Derman, 1991). Often, due to the inability of
the state to effectively monitor and impose sanctions, resources become vulnerable to
conditions of open access, and de facto use rights are imposed by dominant groups of
users. Again, insecurity of tenure and poorly defined use rights leads to potential
degradation of the resource.

**Common Property Resources, Collective Action Institutions and CAMPFIRE**

Ostrom offers a common property perspective based on self-organized, collective
action that is significant to this study because, implicitly, CAMPFIRE incorporates
Ostrom’s institutional perspective. Specifically, Ostrom’s methodology involves
identifying:
those aspects of the physical, cultural and institutional setting that are likely to affect the determination of who is to be involved in a situation, the actions they can take and the costs of those actions, the outcomes that can be achieved, how actions are linked to outcomes, what information is to be available, how much control individuals can exercise, and what payoffs are to be assigned to particular combinations of actions and outcomes (Ostrom, 1990; p. 55).

In pursuing this strategy, Ostrom focuses on the present aspects of common property resource dynamics through the lens of rational choice theory, allowing one to “abstract from the richness of the empirical situation to devise a playable game that will capture the essence of the problems individuals are facing” (Ostrom, 1991; p. 55). In addition to defining various CPR problems, Ostrom offers the following list of conditions that helps to explain the persistence and sustainability of successful CPRs and their related institutions:

*Design principles illustrated by long-enduring CPR institutions*

1. **Clearly defined boundaries**: individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.
2. **Congruence between appropriation and provision rules and local conditions**: appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labor, material, and/or money.
3. **Collective-choice arrangements**: most individuals affected by the operational rules can participate in modifying the operational rules.
4. **Monitoring**: monitors, who actively audit CPR conditions and appropriator behavior, are accountable to the appropriators or are the appropriators.
5. **Graduated sanctions**: appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or both.
6. **Conflict-resolution mechanisms**: appropriators and their officials have rapid access to low-cost arenas to resolve conflicts among appropriators or between appropriators and officials.
7. **Minimal recognition of rights to organize:** the rights of appropriators to devise their own institutions are not challenged by external governmental authorities.

*For CPRs that are parts of larger systems:*

8. **Nested enterprises:** appropriation, provision, monitoring, enforcement, conflict resolution, and governance are organized in multiple layers of nested enterprises.

Adapted from: Ostrom, 1991

Fig. 5

As Ostrom notes, these principles are by no means all inclusive nor are they exhaustive, but they have proven to be consistent elements in the success of many CPRs because they provide incentives for appropriators to commit themselves to conform to rules, monitoring activities and to replicate CPR institutions over time. Because CAMPFIRE is designed for the communal tenure structure, Ostrom’s principles can be useful indicators of the institutional effectiveness of this form of CPR, though this kind of analysis must first be qualified. CAMPFIRE is a relatively young CPR program, and continues to transform itself in response to the shortcomings and successes of the various project findings; in addition, CAMPFIRE has focused entirely on wildlife, a fugitive resource for which it is difficult to apply such things as “clearly defined boundaries.” These conditions must be considered when subjecting CAMPFIRE to Ostrom’s design principles in determining its viability.

In addition to this caveat, there are some limitations to the applicability of Ostrom’s model in assessing CAMPFIRE or any other CPR. Because she analyzes the “rules of the game” through the narrow lens of rational choice theory, the only operative
actors Ostrom addresses are the immediate group of CPR users. On the one hand this approach has great appeal for policymaking as it simplifies the context of CPR dynamics, but on the other hand this simplification overlooks critical factors such as the role of the state, the history of the CPR, and the relationship dynamics of its users in understanding questions of structured inequality and relations of power. To elaborate on this last point, simplification of CPR dynamics has resulted in the tendency to reduce multi-stranded relations to a single-stranded entity focused solely on a single CPR, in this case wildlife. In addition, the use of non-CPR resources and the institutions governing their use will affect the CPR of concern; an example of this includes wildlife habitat.

In the case of Zimbabwe’s Communal Lands the role of the state is integral to its history, where since the early colonial years the state has been the pivotal player in establishing the “rules of the game.” The ninety years of coercive colonial rule had what Drinkwater calls “an extraordinary effect on the shaping of the country and its peoples today...” leaving in its wake a newly independent state as the “dominant source of power in the country” (Drinkwater, 1991; p. 28-29). This issue of power between the state and local structures is absent from Ostrom’s analysis; Ostrom recognizes the state’s role in establishing the initial context for the “game” but fails to incorporate the dynamics of the state-local relationship over time. As Neumann emphasizes, “understanding the origins of threats to wildlife ... requires an analysis of the historical evolution and political dynamics of state conservation policy, particularly as it pertains to changes in
the control of access to resources" (Neumann, 1992; p. 85). While CAMPFIRE represents the application of collective action theory based on self-organizing and self-governing groups at the producer community level, an obvious contradiction underlies these attempts as the state is reluctant to devolve fully its power despite current decentralization rhetoric (Cheater, 1990; Derman, 1991; Drinkwater, 1991; Murombedzi, 1992; Murphree & Cumming, 1991; Ranger, 1993). Given the historical relevance of this power struggle between state and local institutional structures, this relationship and its contradictions cannot be overlooked in assessing the viability of a CPR mechanism such as CAMPFIRE.

A second criticism of Ostrom's approach involves the lack of emphasis placed on structures of power, particularly in the local setting where "decision-making" is too narrow a conceptual focus for understanding institutional dynamics. Sara Berry (1989) observes that the strategies of rural people include attempts to obtain control over resources and opportunities through investing in social and political relationships, not just efforts to effect increases in productivity and output. Berry's work shows that it is wrong to assume that unified and well defined systems of rules and practices exist, and her analyses of multiple, overlapping and sometimes mutually contradictory sets of rights of access and control are important for understanding the politicization of tenure systems. Power structures are central to property regimes, and as Cousins (1993) notes, "... power plays over the distribution of benefits often account for institutional change." Focusing on
the operation of power rather than on ‘decisions’ still allows for analysis of rules establishing conditions of collective choice and of operational rules” (Cousins, 1993; p. 15). In Africa, access to resources is largely based on social identity, and as Berry claims:

If access to the means of production is predicated on social identity, then the definition of property rights hinges on the demarcation of social boundaries, and exploitation operates through the subordination of some people within access-defining groups, rather than on the complete exclusion of people from ownership of the means of production (Berry, 1989; p. 53).

Recognizing the diversity of interests and motivations behind collective decisions is important to the analysis of common property regimes, and as Peters (1987) points out, elicits the question “whose equity?”

Despite these shortcomings, Ostrom’s model provides a sound basis for assessing the viability of CAMPFIRE as an appropriate CPR institution for governing the human management of wildlife. Perhaps the greatest appeal of this approach is that it is easily quantified, lending well to the policy-making process. Since it is the CAMPFIRE program which largely determines the structuring of wildlife management, any institutional assessment and recommendations must consider the principles informing its approach: 1) Effective management of wildlife is best achieved by giving it economic value for those who live with it; 2) Differential inputs must result in differential benefits: this principle relates to Peters’ (1987) question “whose equity?”, and in this context, the answer is “those who have the resource and pay for its existence” (Murphree, 1992; p. 8).
In addition, wildlife assets are distributed unevenly, as is the cost of sustaining and managing them. Costs include damage and destruction to crops and livestock, prevention control, possible injury or death to humans, and the costs of designating land for wildlife habitat rather than other options; 3) *There must be a positive correlation between quality of management and magnitude of benefit:* a "fundamental policy objective is to provide the motivation for good management, thus policy should ensure that good management 'pays'" (Murphree, 1992; p. 9); 4) *The unit of proprietorship should be the unit of production, management and benefit:* proprietorship cannot be separated from production, management and benefit and is a fundamental component in a communal resource regime; 5) *The unit of proprietorship should be as small as practicable within ecological and socio-political constraints:* as Murphree states,

"[f]rom a social dynamics perspective scale this is an important consideration; large-scale structures tend to be ineffective, increasing the potential for inefficiency, corruption and the evasion of responsibility ... a communal management regime is enhanced if it is small enough (in membership size) for all members to be in occasional face-to-face contact, enforce conformity to rules through peer pressure and has a collective identity" (Murphree, 1992; p. 9).

In the following chapter, the implementation of CAMPFIRE in the Omay Communal Lands of Nyaminyami District provides context for this analysis. In addition, the historical dynamics of state/local relations and the local power structures affecting collective action regarding land-use are related to CAMPFIRE.
Chapter Four

CAMPFIRE in Nyaminyami District: the case of Omay Communal Lands

The Nyaminyami District, located in the northeastern region of the Zambezi Valley, is comprised of three Communal Lands: Omay, Kanyati and Gatshe Gatshe. The Omay and Gatshe Gatshe Communal Lands are bounded to the east by the Sanyati River and to the west by the Sengwa River, while Lake Kariba forms the northern boundary (Murombedzi, 1992). Matusadonha National Park, constituting 30% of the District’s total land area, is situated in the center of the district separating Omay from the Gatshe Gatshe and Kanyati Communal Lands. The significance of Matusadonha National Park to this district is expressed by Taylor:

The National Park set on the shores of Lake Kariba and amidst the mountains of the Zambezi escarpment, is home to nearly all the large mammals known to occur in Zimbabwe. Moreover, the adjacent Communal Lands are also similarly endowed with wildlife and a spectacular scenery for which the Zambezi Valley is reknowned (Taylor, 1986, in Murombedzi, 1992).

All three Communal Lands are situated in agro-ecological zones III, IV and V, where poor soils and erratic rainfall prohibit intensive agriculture (Murombedzi, 1992; Murphree & Cummings, 1991; Pantzare & Vredin, 1993; Peterson, 1991). Consequently, the Nyaminyami District has become dependent upon the state for supplementary food aid in the “food for work” or drought relief aid schemes. Because Nyaminyami is a protein deficient region, wildlife represents a potential form of relief from food scarcity,
a factor which has been a driving force behind poaching (Murombedzi, 1992; Ranger, 1993).

Currently the human population of Nyaminyami is estimated to be at 40,000 people representing various settler groups throughout Zimbabwe (Murombedzi, 1992; Taylor, 1993). Prior to the construction of the Kariba Dam, the District was sparsely settled, but as the lake filled, many people who once lived along the Zambezi River were resettled in Nyaminyami District. More recently a second wave of settlers has entered the District driven by pressures elsewhere in Zimbabwe, and partly by the state-sponsored eradication of tsetse fly, opening up previously unsettled land to subsistence agriculture and livestock farming (Zimbabwe Trust, 1990).

Decades of colonial neglect left Nyaminyami one of the least developed districts in Zimbabwe at independence. The lack of arable land gave successive colonial regimes little incentive to invest much attention in even the most basic infrastructure, with the exception of the District's wildlife and tourism potential through the creation of the National Parks and Safari Hunting activities (Murombedzi, 1992). In addition, the Rhodesian government actively sought to prevent the "development" of the Tonga, a predominant group in Gatshe Gatshe Communal Land, as these people were regarded a tourist attraction in their "pristine" state. This intentional neglect of development limited Nyaminyami's participation in the colonial state exclusively to the wildlife-related activities of the DNPWLM and safari operators (Hill, 1996; Murombedzi, 1992).
Employment opportunities are meager, and are limited to the kapenta fishing industry, some tourism (the hotel and catering industry and some safari operations), Matusadonha National Park, NGOs and the tsetse fly eradication program. The outcome of this restricted relationship between the District and the state is that with the exception of the Kariba Dam project, Nyaminyami remains decades behind Zimbabwe’s other districts in terms of development.

Administration

Shortly after independence in August, 1981, the Nyaminyami District Council (NDC) was created to serve as the first local state-authorized authority for the area (Murombedzi, 1992). This District was administered by a District Commissioner located in Kariba, who was supported by other government officials based in Omay, including three Agricultural Officers and a Game Officer from the District Development Fund. Hence, no indigenous political structures are recognized at the District level. From its inception, the NDC was heavily dependent upon grant revenue from the Central Treasury for its capital and recurrent expenditure, and this centralization of the District Administration represents a continuation of colonial assumptions underlying development methodology, which calls for the central management of development resources (Murphree, 1992; Taylor, 1991). The overall impact of this approach undermined the potential for viable local government structures, and orients
accountability to the center rather than the grassroots level. In addition, attempts to involve locals in the administrative network were unsuccessful; as early as 1975, the chiefs in the area refused to participate in the formation of what was then called the African Council (precursor of the District Council). According to Murombedzi, refusal to participate was based on the belief that:

... it would lead to the imposition of taxes, the enforcement of soil conservation measures and a prohibition on river bank cultivation. The matter was not pressed and administration remained in the hands of a District Commissioner. This resistance seems to have been part of a wider strategy of resisting the colonial state ... in 1980, local government in Omay continued to be based on the old tripodal system: the traditional hierarchy of spirit medium and chiefs; the judiciary of both traditional and Roman Dutch law; and the administration” (Murombedzi, 1992; p. 8).

Ranger notes that since independence in fact, there has been “increasing conflict between chiefs and councils over land allocation” (Ranger, 1993; p. 365). This chasm between state and traditional land-use authorities is a significant contributing factor in the current conflict between humans and wildlife in the Nyaminyami District, particularly in the Omay Communal Lands where wildlife remains abundant.

The general underdevelopment of the area means that there is little access to local revenue for the NDC. The absence of liquor outlets, a limited number of operating business licenses, a weak productive base (both agriculturally in terms of industry) and generally low incomes made it impossible for the NDC to levy a development tax (Murombedzi, 1992). The fiscal viability of NDC was further threatened by the requirement by the Government of Zimbabwe that all local authorities be financially self-
sufficient as soon as possible. It is not surprising then that the Nyaminyami District Council should turn to the single natural resource prevalent in the region for the generation of revenue they are so desperate to acquire: wildlife.

**Appropriate Authority and Wildlife Management**

Operation Windfall was implemented in the region in the early 1970s as a means of generating revenue from wildlife, while attempting to curb poaching. Although the program was not sustained for reasons previously addressed, wildlife revenue disbursed under the program became increasingly significant to the NDC budget, and from this the NDC saw the potential for developing a wildlife-based economy (Murombedzi, 1992; Taylor, 1993).
Organization Structure Of The
Nyaminyami Wildlife Management Trust

Adapted from: Murombedzi, 1992

Fig.6 Organizational Structure of the Nyaminyami Wildlife Management Trust
The Council had maintained some concessions with safari operators, but without Appropriate Authority status all revenues from wildlife were paid directly to the Treasury, and efforts to gain reimbursement for local development were continually frustrated. Between 1982 and 1987, Nyaminyami only received 49.5% of its gross wildlife earnings (Zimbabwe Trust, 1990). This inequity motivated the NDC to establish a Steering Committee in 1985 comprised of 12 representatives, including six ward councilors and representatives from NGOs and the Department of National Parks, to explore the means of controlling its wildlife resources in terms of a 1982 amendment made to the 1975 Parks and Wild Life Act (Hill, 1996; Murphree, 1992; Murombedzi, 1992). This amendment allowed "owners and occupiers of alienated land" to become the appropriate authority for wildlife on their land, and District Councils can be designated Appropriate Authorities over the wildlife resources of their constituent areas" (Murombedzi, 1992; p. 14). More specifically, the provisions of Appropriate Authority status under the auspices of the DNPWLM, state:

"Appropriate Authority in effect grants District Councils the same rights as commercial farmers enjoy on private land. Councils are empowered to enter into contracts with private organizations for the exploitation of their wildlife, receive all payments directly and carry out their own problem animal control. Equally well the onus is on them to carry out their own law enforcement and protect the resource" (DNPWLM, 1989; p. 5).

As stated in a steering committee document, "... with its commitment to Government's objective that it should become financially self-supporting, the Council looked at ways and means of enhancing the wildlife resources and enlarging its benefits to the District"
With input from Center for Applied Social Sciences, World Wildlife Fund and Zimbabwe Trust, the Steering Committee sought to establish a trust that could develop the institutional capacity for wildlife management, thereby meeting the criteria for Appropriate Authority status. In 1987, the Nyaminyami Management Wildlife Trust (NWMT) was born, and in January 1989, the Department of National Parks and Wildlife Management (DNPWLM) conferred Appropriate Authority (AA) status upon the NDC (Taylor, 1993).

Central to this case study is the question of the legitimacy of AA as an effective mechanism for the devolution of wildlife management. This concern rests on three conceptual aspects of CAMPFIRE: resource control, funding mechanisms, and lack of local institutions. According to the DNPWLM, the major management activities of an AA are:

- to enter into contracts with private organizations for the exploitation of their council’s wildlife;
- receive all payments for wildlife exploitation directly;
- carry out their own problem animal control;
- carry out their own law enforcement and protect the resource (Murombedzi, 1992; p. 15)

However, the DNPWLM retains residual control over wildlife by setting and approving annual offtake quotas, in addition to monitoring AA activities by requiring submission of annual reports. Further, the DNPWLM can withdraw AA status where it is deemed necessary, though there is no clear basis for such action (Murombedzi, 1992). In addition, ZimTrust has taken over the role of implementing agency because DNPWLM
has neither the funds nor the personnel to do so (Zimbabwe Trust, 1990). This has fundamental implications for local participation that will be addressed below. And finally, the devolution of management responsibility cannot be fully achieved due to the nature of the aforementioned management activities, which are beyond the scope of the lowest administrative unit. It is also suggested by Murombedzi that devolution is impossible because of the nature of accountability in local government, which is inherently accountable to the central government and not to lower administrative levels (Murombedzi, 1992).

The Omay Communal Lands

The Omay Communal Lands are located along the southern shores of Lake Kariba, occupying a spatial area of 2,870 km$^2$ (Taylor, 1993). With a population of approximately 20,000 Tonga and Shangwe people, Omay is divided among four chieftainships; Mole, Negande, Nebiri and Msampakaruma (Murombedzi, 1992; Taylor, 1993). Each chieftainship comprises two wards, further divided into villages represented by approximately 200 households per village Murphree, 1991). Murombedzi notes that while during the war for independence, “most villagers were removed from the remoter river valleys where they were settled to the chiefly centers which became ‘Protected Villages’” (Murombedzi, 1992). Since independence, however, an outward migration from these villages back to original settlement patterns along the river and stream banks
is occurring. The success of the tsetse eradication program has driven much of this expansion, although the presence of wildlife in the former settlement areas has become a source of conflict. This movement, according to Murombedzi, "constitutes a recolonization of formerly settled land from wild animals" with the upshot of increased conflict between humans and wildlife (Murombedzi, 1992).
Adapted from: Taylor, 1993

Fig. 7 Map of Omay Communal Land in Nyaminyami District, Kariba, Zimbabwe. Hatching shows the major settlement areas within the chieftainships of Mola, Negande, Nebiri and Msampakaruma. Siakobvu is the administrative center of the District and Chalala and Bumi Hills are commercial and tourist growth points. Completed (–) and proposed (—) electrified game fencing is also indicated.
The construction of Lake Kariba forced the resettlement of the Tonga cultivators residing on the Zambezi floodplain, who were relocated to less hospitable higher ground. As Murombedzi (1992) describes,

[n]o compensation (was given) for the loss of their rich alluvial fields...” and that they were left “without provisions for infrastructural development for the new settlements. Today they are still recovering from the trauma of the relocation (to) their current location, barely able to scratch a decent living from agriculture ... the Tonga have not benefitted from the hydro-electric power generated from Kariba, and only a few have access to the fishing permits which entitle them to fish on the lake (Murombedzi, 1992; p. 7-8).

Incomes in Omay are comparatively low, and most adults are engaged in seasonal wage labor, picking cotton on commercial farms around Karoi, Chegutu and Kadoma (Murombedzi, 1992). Agriculture is limited to subsistence cultivation, and due to the presence of tsetse fly, livestock holdings have been confined mostly to goats and sheep, often traded for cash to supplement household needs (Murombedzi, 1992; Taylor, 1993). Commercial activities in Omay are limited to some gillnet and kapenta fishing and a few commercial tourist facilities on the lakeshore (Zimbabwe Trust, 1990).

Wildlife Utilization

In contrast to Kanyati and Gatshe Gatshe Communal Lands, an abundance of wildlife occupies Omay. While there are a range of species which are economically and ecologically important, elephant (*Loxodonta africana*) and buffalo (*Syncerus caffer*) comprise 82% of the large herbivore biomass (Taylor, 1993). Census data for elephant
obtained over a period of thirteen years in Omay shows the population to number 2,098 ± 25%, with a mean crude density of 0.75 ± 25%/km² (Taylor, 1993; p. 3). Despite the variability of individual estimates, the population fits a long-term growth rate of 5% (Taylor, 1993). Populations are distributed throughout Omay with localized concentrations in the more inaccessible, remote areas of the district. Overall densities of elephant in the adjacent Matusadonha National Park do not differ significantly from those in Omay. However, differences in distribution, ecological density, group size, home range and movement reflect the differences in management between the two areas; within the park boundaries elephant populations enjoy protection with little human interference as compared to the pressures of hunting, harassment and human activities to which they are subjected in the Communal Lands (Taylor, 1993). Like elephant populations, buffalo numbers also reflect an upward trend in growth rates estimated at close to 10% annually. Between 1980 and 1991, the mean number of buffalo was estimated at 6,262 ± 39%, with populations concentrating along the Lake Kariba shoreline (Taylor, 1993). The third largest contribution comes from impala (Aepyceros melampus) consisting of some 15,000 animals accounting for 8% of the total herbivore biomass, while lesser numbers of another 12 species comprise the remainder. The following discussion focuses on four current aspects of wildlife utilization occurring simultaneously in Omay Communal Lands.
Sport hunting is significant to conservation efforts in Omay; immediate and substantial income is generated from a sustainable quota of animals (as determined by DNPWLM) and an immediate distribution of benefits is feasible, a necessary element for maintaining community interest in the project. Because safari hunting is the principal form of wildlife utilization and revenue generation under the NWMT program, the safari industry has become its primary management focus. During the first year of operation, most of the NWMT's revenue was generated by sport hunting in the Omay Communal Land under agreements with two safari operators: Astra Wildlife and Buffalo Range Safaris (Zimbabwe Trust, 1990). Each operator pays a concession fee to hunt in a specified area; in addition, a trophy fee is imposed for each animal actually killed in the hunt, and these costs are passed on to the client who is required by Parks and Wild Life Regulations (1990) to make such payments in foreign currency (Murombedzi, 1992). Although the fees vary considerably from hunt to hunt, operators charge a daily average of US$500. In return for a certain financial guarantee by the safari operators, NWMT is obligated to guarantee a minimum hunting quota for the operator by monitoring local ecological behavior. Monitoring local ecological behavior is thought to be best achieved by offering economic incentives for conserving wildlife, though the efficacy of achieving compliance through financial incentives is both debated and inconclusive (Hill, 1996; King, 1994; McIvor, 1994; Murombedzi, 1992, 1994; Murphree, 1991; Murphree & Cumming, 1993; Peterson, 1991; Taylor, 1993; Thomas, 1991; ZimTrust, 1990). One reason for this impasse is the nature of safari hunting which remains a predominantly
elite and white occupation. The post-colonial government has made few revisions to wildlife policy because of the perceived benefits (mostly foreign exchange earnings). Such legislation is biased against communal residents in favor of the large landowners and safari operators, effectively excluding local people from the resource despite the political rhetoric from government promoting devolution of wildlife management. While safari operations provide revenue for the wards, the lack of local participation in this industry stifles the potential for local people to see a direct link between their conservation efforts and the resulting economic benefits.

The second most lucrative form of wildlife utilization comes from game cropping. Because the negative attitudes of local people toward wildlife are slow to change, the NWMT decided to hasten this process by providing game meat at affordable prices. In addition to providing meat to the people of the District at controlled but subsidized prices, game cropping objectives seek to: generate employment and develop local skills and knowledge; and retain financial and economic viability (Murombedzi, 1992). In 1989, NWMT was allocated an annual impala cropping quota of 10% (1500 animals), generating 30,000 kg. of meat which was sold to local people at below-market prices, generating Z$25,000 (Taylor, 1993; ZimTrust, 1990). Impala are culled in three operations annually, comprising an important part of the NWMT management focus. While it is noted that the meat is only periodically available, game cropping has indeed generated enthusiasm for game meat. Still, local attitudes have not changed significantly as a result of this program, largely due to the fact that local involvement in the cropping
exercise is limited, so that game cropping is viewed by locals as a “benevolent NDC exercise” (Murombedzi, 1992). As it currently operates, game cropping does not meet any of the criteria for an effective CPR as defined by Ostrom (1990); moreover, it fails to embrace CAMPFIRE’s management principles as outlined in the previous chapter.

Problem Animal Control (PAC) constitutes another major form of wildlife consumption. Because of the frequent damage to crops, livestock and occasionally humans caused by wildlife, there is considerable intolerance of wildlife. The response of authorities to large game involves control measures aimed either at harassing or shooting the ‘culprits’ involved in the damage. PAC animals may be used to generate revenue by selling them to fee-paying clients, as was done successfully in 1992 (DNPWLM, 1992). Although it is the responsibility of the District Council to control PAC, the DNPWLM sets quotas to ensure proper offtake procedures and if the system is abused it may be withdrawn. The DNPWLM sets the following stringent guidelines for regulating the hunting of PAC animals:

1. Animals must be on quota;
2. PAC animals must be persistent crop raiders and have caused meaningful damage;
3. The animal shot must be the culprit ... it should be shot in the field or followed and killed within 1,000 meters of the field;
4. Offtake of PAC must be tightly controlled by the District Council ... operators must not kill animals without an official written request from council;
5. Records of PAC activities should be submitted to the DNPWLM with the District’s annual report (and) should also include cases where no action was taken;
6. Any hint of abuse of this system will result in immediate cessation of PAC and immediate reduction of the trophy quota, on a one-for-one basis (DNPWLM, 1992; pp. 10-11).

According to Taylor (1993), some 1,000 problem animal reports were filed between 1989-1991, with some 70% of the incidences being elephant related. The next most common problem animals include buffalo (17% of reports), lion (4%), leopard, hyaena and baboon (collectively less than 2% total reports) (Taylor, 1993). The number of incidents was similar in each of the settlement areas and largely proportional to the ward in question with the exception of Msampakaruma where “nearly 27% of the incidents occurred over 17% of the total area of Omay. This probably reflects the greater number of people living in this area of the District compared to elsewhere” (Taylor, 1993, p. 11).

The number of requests for PAC enforcement far exceed the number of animals actually killed and the fact that the numbers of elephant shot on control have not substantially increased attests to this (DNPWLM, 1992; Taylor, 1993). Between 1983 and 1992, 81 elephant bulls, all potentially valuable trophy animals, were shot on PAC, averaging 0.4% of the total population size. It is interesting to note that the mean number of elephants shot on trophy offtake over the same time period was 12 animals per year, or 0.6%, so that the total combined offtake was in excess of 1% (Taylor, 1993). Since trophy offtakes should not exceed 0.75%, the reported levels of control offtake will not allow sustainable trophy elephant hunting in the long-term, making it necessary either to reduce the number of animals shot on safari or the number of animals shot on PAC.
A recent approach taken to relieve this problem involves converting PAC elephant into trophy animals which are marketed during the wet season, when crop raiding is at its peak and crop damage is most severe. Safari clients may then hunt problem elephants under tightly controlled conditions (Taylor, 1993). The PAC and trophy quotas would be combined allowing for some flexibility between the two categories, with a single quota not to be exceeded unless human life is in jeopardy. In 1992, this approach was implemented on a trial basis with positive implications (Taylor, 1993).

Nonconsumptive tourism constitutes a fourth major form of wildlife utilization in Zimbabwe, especially in the Communal Lands where abundant wildlife and relatively undeveloped landscapes are attracting large numbers of tourists (McIvor, 1994). Relative political stability in Zimbabwe in the latter part of the 1980s and early 1990s, coupled with the growing popularity of the wilderness experience in the international tourism market, have promoted a rapid expansion in the number of foreign visitors to the country (DNPWLM, 1992; McIvor, 1994; ZimTrust, 1990). Between the years 1981 and 1992, the number of tourists rose from 320,000 to 658,000 and is expected to increase by an average of 8% annually through the end of the decade (McIvor, 1994). This has obvious implications for wildlife utilization, none of which has been lost on the NWMT which has negotiated with five tour operators to lease sites in the District for non-hunting safaris. The NWMT has offered leases for a period of 9 years 11 months initially, and in
return for this long lease the lessees must commit a guaranteed ZS$300,000 annually (based on the 5/28/91 exchange rate), in addition to 20% of the annual gross revenue (Murombedzi, 1992). Infrastructural developments are to include rustic camps constructed from local resources and local labor, with the idea of promoting economic opportunity and generating support for the project. Bearing in mind the issue of access to the benefits derived from various forms of wildlife utilization, critics of the CAMPFIRE program note that both safari hunting and non-consumptive tourism increase opportunities for ‘external’ interests to benefit from the Communal Lands wildlife resource.
Financial results relating to wildfire management activities in Nyaminyami District  
All values in Zimbabwe Dollars (ZS)

<table>
<thead>
<tr>
<th>Activity/Item</th>
<th>Year</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hunting</td>
<td>272187</td>
<td>346506</td>
<td>462765</td>
</tr>
<tr>
<td>Cropping</td>
<td>35910</td>
<td>28720</td>
<td>48484</td>
</tr>
<tr>
<td>PAC</td>
<td>11256</td>
<td>7917</td>
<td>8999</td>
</tr>
<tr>
<td>Tourism</td>
<td>-</td>
<td>-</td>
<td>36000</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>1159</td>
<td>13600</td>
</tr>
<tr>
<td>Total</td>
<td>319353</td>
<td>384302</td>
<td>569848</td>
</tr>
<tr>
<td>Allocation and Expenditure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Council levy</td>
<td>25287</td>
<td>16958</td>
<td>26817</td>
</tr>
<tr>
<td>Operating reserve</td>
<td>29578</td>
<td>21472</td>
<td>8965</td>
</tr>
<tr>
<td>Depreciation</td>
<td>-</td>
<td>34152</td>
<td>23242</td>
</tr>
<tr>
<td>Recurrent expenditure</td>
<td>66488</td>
<td>214724</td>
<td>306824</td>
</tr>
<tr>
<td>Total ward dividend</td>
<td>198000</td>
<td>96996</td>
<td>204000</td>
</tr>
<tr>
<td>Dividend (per ward)</td>
<td>16500</td>
<td>8083</td>
<td>17000</td>
</tr>
</tbody>
</table>

Adapted from: Taylor, 1993

Fig. 8 Revenues from wildlife management activities in Nyaminyami District, Zimbabwe
### Trophy hunting quotas and fees in Nyaminyami District, 1989 - 1991

<table>
<thead>
<tr>
<th>Species</th>
<th>Fixed Quota</th>
<th>Unit Trophy Fee Z$</th>
<th>Total Fixed Fees Z$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elephant - M</td>
<td>12</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Elephant - F</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Elephant - FTL</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*Zebra</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Hippo</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>*Bushpig</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*Warthog</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>*Buffalo - M</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>*Buffalo - F</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>*Buffalo - NT</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*Bushbuck</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>*Kudu - M</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>*Eland - M</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>*Duiker</td>
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<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Reedbuck</td>
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<td>4</td>
<td>4</td>
</tr>
<tr>
<td>*Waterbuck - M</td>
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<td>16</td>
<td>16</td>
</tr>
<tr>
<td>*Sable - M</td>
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<td>6</td>
<td>6</td>
</tr>
<tr>
<td>*Impala - M</td>
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<td>80</td>
</tr>
<tr>
<td>*Impala - F</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>*Klipspringer</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>*Grysbok</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Lion</td>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Lioness</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Species</td>
<td>Fixed Quota</td>
<td>Unit Trophy Fee Z$</td>
<td>Total Fixed Fees Z$</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------</td>
<td>--------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>*Leopard</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>*Genet</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*Civet</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*Hyaena</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*Jackal</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*Porcupine</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*Baboon</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Crocodile</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>*Guinea Fowl</td>
<td>100</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>*Francolin</td>
<td>100</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>*Pigeons/doves</td>
<td>100</td>
<td>220</td>
<td>500</td>
</tr>
<tr>
<td>*Sandgrouse</td>
<td>-</td>
<td>108</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Concession Fee                                    56820  71430  111550
Total Value (fixed quota only)                    246220  309530  334650
* Species with optional quotas

Adapted from: Taylor, 1993

Fig. 9 Trophy Hunting Quotas and Fees in Nyaminyami District, 1989-1991
It is important to note that conflict has arisen in the Nyaminyami District because revenues generated from concessions made between Omay and concessioners have been evenly distributed between Kanyati, Gatshe Gatshe and Omay, despite the fact that the people of Omay carry the greater burden of living directly with the wildlife (Murphree, 1992; ZimTrust, 1990). A crucial aspect of the distribution of revenue is that the majority of the funds ends up in the pockets of the local elites. This is perpetuated by a fundamental misunderstanding of local community structure by proponents of CAMPFIRE, who view local communities as a heterogeneous entity. It has even been asserted that CAMPFIRE’s economic approach toward conservation is simply another strategy of the state to gain control of local channels of revenue from Communal Lands, encouraging the participation of the elites while maintaining a coercive structure with the locals (Hill, 1995; Murombedzi, 1992). This directly conflicts with CAMPFIRE’s second management principle, which states that differential inputs must result in differential benefits.

**Institutional Viability**

From the preceding discussion it is clear that the implementation of CAMPFIRE is driven by economic incentives to invoke collective action in wildlife management, rather than focusing on wildlife utilization to generate a sustainable CPR which would
promise greater sustainability of wildlife. The role of the dividend is two-fold according to Murombedzi, who describes it first as:

an economic incentive to elicit collective action and popular participation in the resource management program, and (secondly) as the benefit of that participation to individuals or communities ... [i]n otherwords, the production of an annual wildlife dividend is the primary objective of CAMPFIRE as it is currently being implemented (Murombedzi, 1992; p. 51).

Based on current fieldwork (Hill, 1996; Moore, 1995; Murombedzi, 1992; Peterson, 1991; Taylor, 1993; Thomas, 1991), the implementation of CAMPFIRE in Nyaminyami and the Omay Communal Lands in particular has not been effective in terms of a viable CPR. This conclusion is based on the failure of CAMPFIRE to address the central issue of accountability and its inability to provide the conditions necessary for creating viable local institutions capable of collective action at the local level. These shortcomings manifest themselves in conflicting group interests in the management of wildlife, as noted by the fact that safari operators are the greatest beneficiaries in terms of security of access to the resource, revenues from safari operations, and conflict control through NWMT which protects them from negative local actions such as poaching. NGOs such as CASS, WWF and ZimTrust have all significantly shaped the implementation of CAMPFIRE, creating a serious constraint to local institutional development. The need for development of local resource management institutions to take over from existing utilizers is critical if CAMPFIRE is to become a viable CPR. It is noted in the literature that certain aspects of management remain beyond the capacity of
the NWMT such as establishing safari offtake quotas which is still the domain of the DNPWLM (Hill, 1996; Murombedzi, 1992; Peterson, 1991; Thomas, 1991). Adequate transfer of skills to local people could mitigate this shortcoming.
Chapter Five
Discussion and Conclusion

It is clear from the previous case study that institutional development at the District Council level is strong compared to the minimal efforts made at the local village level. It is suggested by Murombedzi that the NDC assumes that local participation refers to some "local articulation of needs, etc., regarding the resource ... this definition does not consider a tenure regime or system of rights that defines local as well as all other rights to wildlife in a holistic ecological sense ..." (Murombedzi, 1992; p. 69). A closer look at the local village level in Omay reveals that the population is not aware of the potential role they could play in their own resource management, nor is there any clarity in what they are expected to do with the resource other than refrain from poaching and to cease all arable expansion and livestock importation (Hill, 1996; Murombedzi, 1992). In otherwords, local management implies that some limitation of individual investment in agricultural production is in order, yet for this to occur wildlife must generate income to locals sufficient enough to offset the foregone income from expanded agricultural production.

Without a system of rights and obligations it is questionable whether any discussion will center on local management of wildlife. Institutional development must
extend far beyond the formation of committees whose duty it is to articulate perceived local needs; in the spirit of Ostrom, institutional development should embody the process in which rights and obligations to the resource are defined and authority structures for enforcement are created. Without this sort of process local participation will always be limited to the trivial decisions on how revenue should be invested. Sustainability of wildlife cannot be secure without there being some connection between the local community and the resource; this may come in the form of some co-management arrangement between NDC, NWMT and local authority structures to actually utilize and exploit the resource for local benefit. Further, the absence of a defined or recognized system of rights may in fact exacerbate the negative perceptions local people have toward wildlife. It may be that clearly defined rights as emphasized by Ostrom and promoted by CAMPFIRE’s own principles is the single most important pre-condition for people to regard wildlife as being valuable to the household economy.

Despite CAMPFIRE’s significant institutional shortcomings, most scholars are praising the program’s achievements in wildlife conservation. While poaching continues to challenge Zimbabwe’s wildlife officials, some evidence indicates reduced illegal offtake in the majority of CAMPFIRE project areas (Child, 1991; Zimbabwe Trust, 1990). Still, CAMPFIRE’s inability to function as a successful CPR overshadows the measures of success the program has enjoyed (Moore, 1995; Murombedzi, 1992; Murphree, 1991; Pantzare & Vredin, 1993; Thomas, 1991). Given the popularity of
CAMPFIRE as a model for devolving natural resource management to local communities, it is crucial for proponents to understand the implications of its shortcomings.

First, the CAMPFIRE model is built exclusively around wildlife with disturbing implications for other resources such as habitats. While species important to CAMPFIRE’s hunting quotas receive some measure of protection, other natural resources such as habitats and non-offtake species remain vulnerable to overexploitation, directly impacting the welfare of wildlife (Murombedzi, 1992). Another consequence of the single focus on wildlife resources is that local institutions governing wildlife use disintegrate as they come under Ward authority (Murombedzi, 1992; Moore, 1995; Ranger, 1993).

A second caveat to the use of CAMPFIRE as a model for devolution is that genuine autonomy has not been given to the local village level with regard to natural resource management (Hill, 1995; Murombedzi, 1993). Rapid rural development schemes such as CAMPFIRE are beginning to incorporate local participation, but top-down project implementation persists. As Murphree states, “[f]or too long ‘community development’ has been conceptualized in Africa as an extension to local people of central government institutions” (Murphree, 1991; p.15). Despite this, it is important to consider the appropriate administrative and spatial scales to which power should be devolved. Often the advocates of CAMPFIRE fail to acknowledge the uneven
distribution of power at the local village level. As mentioned in previous chapters, the existence of local power struggles begs the question “how local is too local”? If the DNPWLM is to devolve power to the village level, it is imperative that differentiation within and between communities be recognized and understood if CAMPFIRE is to remain a viable program rather than another development scheme for the benefit of a few local elites.

In addition to this concern for the social legitimization of CAMPFIRE as a model for devolution is the issue of CAMPFIRE as a model for wildlife management. Again, with reference to the various levels of management currently existing in the Communal Lands, the management of a fugitive resource such as wildlife must be considered. While many CAMPFIRE advocates call for a sweeping devolution of management down to “the most basic unit of production” (Murombedzi, 1992) and even to “the household level” (Peterson, 1991), there remains little consensus on appropriate institutional levels of management for wildlife under the CAMPFIRE program. Simply “creating” local institutions to facilitate devolution may be short-lived once the various NGOs are no longer committed to CAMPFIRE.

One approach emerging in the development literature to address these multi-scale management concerns is co-management. This strategy offers local communities significantly more involvement in local decision-making but final jurisdiction is retained by the central government. Local representation on a co-management board may
constitute the majority, giving local people a greater sense of security over their resources. In the case of Zimbabwe's CAMPFIRE program, institutional objectives would shift in focus from total devolution to the co-management of natural resources working with government officials, community organizations and NGOs. This structure is very similar in operation to many of the current CAMPFIRE projects, including the Omay Communal Lands. Implementing co-management objectives rather than aiming for total devolution offers a more realistic wildlife management strategy, given the absence of institutional infrastructure, funding and technical skills at the local level.

As Child and Peterson summarize, "CAMPFIRE is not just a wildlife programme, it is not even just an economic development programme based on wildlife. Ultimately it is a people and institutional development programme based on the sustainable production of wildlife" (Child & Peterson, 1991; p. 86-87). From the preceding case study it is clear that the management of natural resources is complex. Management schemes are dependent upon the nature of the resource involved, the system of tenure under which the resource is managed, and the social relations defining that system. As an alternative to more traditional centrist development models, CAMPFIRE is a holistic model seeking to incorporate the dynamics of local land-use systems while attempting to give local people a legitimate voice in the use of their natural resources. While it is hardly a panacea, CAMPFIRE offers great potential for reconciling the interests of rural communities and the conservation of wildlife.
References


