# Evaluation and Use of Economic Incentives in the Sustainable Management of Communally-Owned Natural Resources: The Campfire Experience

by

Margaret Sangarwe (nee Mukahanana)

A Practicum
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree of

Master of Natural Resources Management

Natural Resources Institute
University of Manitoba
Winnipeg, Manitoba

**THE UNIVERSITY OF MANITOBA**

**FACULTY OF GRADUATE STUDIES**

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**Acknowledgements**

Completion of this study was made possible by many caring people. First, I first wish to thank most sincerely my supervisor Dr Fikret Berkes of the Natural Resources Institute, University of Manitoba, who gave me continuous guidance throughout my research work. Second, I also wish to thank the following members of my Practicum Committee: Dr Gary Johnson of the Department of Agricultural Economics; Dr Elizabeth Troutt of the Department of Economics and Mr Art Hoole a former Canadian counterpart under the Canadian-funded Zimbabwe Natural Resources Management Programme, for the tremendous guidance and support rendered to me. My thanks also goes to Professor Thomas Henley of the Natural Resources Institute who also gave me great encouragement and advice on my research.

I am indebted to Rob Taylor a colleague and Canadian advisor under the ZNRMP, who provided me a lot of encouragement and guidance in my research work as well as spending a lot of time editing my drafts. My appreciation goes to Vimbai and Owen Chitohwa who helped me with the final editing. I also wish to acknowledge the many government and non-governmental officers who provided me with the literature I required for my studies as well as those officers who agreed to be interviewed during my research.

I am also very grateful to the Canadian International Development Agency, CIDA for providing the financial support that enabled me to complete my course work.

**Dedication**

I dedicate this work to my husband Philemon, my son Zvikomborero and to my daughters Rumbidzai, Rufaro and Chiratidzo for bearing with me when I had to spend many hours on my practicum.

THE SOLUTION. Given the chance, Zimbabwe's rural communities have demonstrated the ability to use wildlife sustainably, for the benefit both of human development and of conservation

**Abstract**

Historically, sparse populations and abundance of natural resources has meant little attention given to the regulation of natural resources. However, as populations grew and technology improved, pressure on natural resources has increased, often leading to resource degradation. Attention has been focused on the management of both privately-owned resources and common property resources. It has been realised that the economic incentives and local involvement in the management of the resources can promote long-term conservation of the resource. This study seeks to find out whether incentives work to encourage better management of natural resources. An examination of the CAMPFIRE project in Zimbabwe was the focus of the study with particular attention given to the Dande Communcal Area of Guruve.

The analysis extensively used secondary data as well as responses from selected interviews of key people involved with CAMPFIRE at national and local level. Although it was difficult to link benefits and changing attitudes, in wards where the benefits were substantive, local people regarded wildlife as an asset. The opposite situation pertained in wards with low income from CAMPFIRE. Apart from economic incentives, social incentives were also considered important for the sustainability of CAMPFIRE. The potential for CAMPFIRE as an important incentive for natural resources management and a rural development model was acknowledged. It was however, recommended that there is the need to increase income base for CAMPFIRE and promote local empowerment among other recommendations.

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## ACRONYMS

| | |
|---|---|
| Agritex | Department of Agriculture Extension Services |
| CAMPFIRE | Communal Areas Management Programme for Indigenous Resources |
| CASS | Centre for Applied Social Sciences of the University of Zimbabwe |
| CCG | CAMPFIRE Collaborating Group |
| CCU | CAMPFIRE Co-ordination Unit in the DNPWLM |
| DNPWLM | Department of National Parks and Wildlife Management |
| GOZ | Government of Zimbabwe |
| LA | Local Administration |
| LG | Local Government |
| MLGRUD | Ministry of Local Government, Rural and Urban Development |
| PAC | Problem Animal Control |
| RDC | Rural District Council |
| SADC | Southern Africa Development Community |
| USAID | United States of America International Development Assistance |
| WWF | World Wide Fund for Nature |

# CHAPTER 1.

## INTRODUCTION

### 1.1 Preamble

Dating back millions of years, man has depended on natural resources (forestry products, water, stones, minerals, vegetation etc.) for survival. Since these resources were abundant and populations were sparse, they were considered in infinite. There was therefore no need to manage natural resources, since nature renewed itself. With the technological advancement that characterised the 20th century, the capacity of man to exploit natural resources has been greatly enhanced. The rapid industrialisation that took place during the Industrial Revolution, demonstrated that natural resources were not limitless as believed, but could be depleted if the rate of harvest exceeded the natural regeneration rate. The importance of regulating the use of natural resources has therefore gained recognition by policy makers and natural resources managers. Natural resources management programmes have been put into place in order to ensure that the world and its people present and future generations will continue to benefit from these resources.

Various management techniques have evolved over many years, starting from deep ecological[1] to

[1] Deep ecology was concerned about maintaining pristine environments, through species protection excluding any use of the resources.

ecologic-economic[2] approaches. different countries and localities. The effectiveness of these management approaches, has in many instances, been compromised The evolution of these techniques has been guided by the various property regimes that characterise natural resources management in by the competition between the economic development and need to maintain ecosystem health. Management of natural resources has been more complex in cases of communal ownership and more so when the resources are fugitive in nature. In such cases, delineation of ownership boundaries is impossible and exclusion of non-owners difficult. This does not in any way suggest that other management regimes are not without problems. Policy makers have had over the years to come up with innovative ways of sustainably managing common resources. Various policy instruments have been applied ranging from command and control to voluntary compliance mechanisms. What is perhaps important in natural resources management is, to ensure that any management technique should include the users of the resource as stakeholders and allows benefits to accrue to the custodians of those resources. This will serve as an incentive for the sustainable management of those resources. Regulation has been used exclusively in the past to regulate the use of natural resources. It has however been acknowledged that regulation alone cannot achieve sustainability. Legislative development and its enforcement requires investment in human and financial resources and it is therefore costly to governments and the taxpayers.

[2] Ecological economics acknowledges the linkages between ecological protection and economic development and puts emphasis on sustainable use of resources as opposed to protectionism to protectionism.

Prices, markets and governmental fiscal policies can also play a complementary role in shaping attitudes and behaviour towards the environment.

Furthermore, as budgets for central governments have diminished over the years, ways of cutting down expenditure on legislative control have been sought. Many governments have cut the cost of legislative control through the introduction of innovative ways of maintaining government control over resources, while at the same time reducing the cost of such control. The use of economic incentives to encourage local populations to better manage their resources has been one such innovation that has proved to be cost effective and resulted in better conservation of natural resources; especially common property resources.

The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) in Zimbabwe is a natural resource management programme which has sought to use monetary and other incentives as a way to encourage local communities to manage their wildlife sustainably. The study seeks to examine the use of these incentives in the context of wildlife management in Zimbabwe, so as to determine whether they are effective.

## 1.2 The Issue

During the early 20$^{th}$ century, the colonial government in Zimbabwe promulgated the "Kings Game Laws" which alienated wildlife from the local people through the

establishment of protected areas. Wildlife became state property and local people were denied any access to this resource. However despite these protective measures, wildlife continued to destroy crops, livestock and at times killed people in the communal areas adjacent to the protected areas. This created animosity between people and wildlife, leading the communal inhabitants to regard wildlife as a menace and clamour for its removal. Illegal poaching was also on the increase and government control proved difficult.

The Department of National Parks and Wildlife Management (DNPWLM), realised that the solution to the decimation of wildlife was to bring back wildlife to the people by allowing them to benefit from its utilisation. The CAMPFIRE programme in Zimbabwe was initiated in 1983 to address the depletion of wildlife resources in the communal areas, by enabling local rural communities to directly benefit from this resource. It was believed that, allowing communities to manage and utilise wildlife under CAMPFIRE can bring sustainable livelihoods and incomes to communities. Once communities can derive direct benefits from wildlife resources and participate in its management, it was hoped that local communities would attach value to wildlife and promote its conservation. This evaluation intends to determine whether CAMPFIRE is succeeding in providing this incentive and whether attitudes towards wildlife have changed as a direct result of distributing these wildlife benefits among the local communities.

## 1.3 CAMPFIRE: A brief synopsis

An examination of the CAMPFIRE programme in Zimbabwe provides a unique opportunity to examine the development and implementation of a community-based natural resource management system. Not only does such an examination provide an overall analysis and assessment of the programme itself, but it also allows the consideration of general theories relating to the use of economic instruments for natural resource management.

The Zimbabwe government realised that the long-term survival of wildlife in communal areas ultimately depended on promoting sustainable use rather than on protectionism. Protectionistic laws introduced during the early twentieth century by the colonial government had not led to better conservation of wildlife resources but rather to bitter conflicts between government and the local communities. The conflicts emanated from the fact that although wildlife had been put in protected areas, it still destroyed crops, livestock and human lives in communal areas adjacent to the protected areas. The "war" between villagers and elephants culminated in increased incidents of poaching and outcry for government to fence off its wildlife. In 1975 the Parks and Wildlife Act was amended to allow landowners the right to utilise and benefit from wildlife on their land. This only applied to commercial landowners. The government realised that due to allowing sustainable use concept, the numbers of wildlife were increasing in the commercial farming areas. The government decided to extent this success story to the communal areas. The Parks and Wildlife Act was again amended in 1982 to allow local authorities (District

councils now referred to as Rural District Councils (RDCs) to apply for "appropriate authority" for wildlife in their area of jurisdiction. What this meant was that if a local authority was granted appropriate authority status it would manage wildlife in its area, including utilising it for the benefit of its people. This became "The CAMPFIRE programme." Before CAMPFIRE, revenue from wildlife utilisation in communal areas was put into the Treasury and the people whohad to live with wildlife did not get any benefit. Limited compensation was given to families whose crops were destroyed by wildlife. Although the Act was amended in 1982, the CAMPFIRE programme document was only finalized in 1986. It was only in 1989 that the first two districts, Nyaminyami and Guruve were granted "appropriate authority" status. By 1991, 12 districts had received appropriate authority status and by 1996, the number had increased to 36 (Child 1995). Figure 1.1 shows the CAMPFIRE districts in 1996.

Sustainable rural development requires strategies that enable rural people to improve their quality of life and at the same time maintain their resource base. CAMPFIRE reconciles these requirements by identifying a range of potential financial and other benefits that rural communities could derive through conservation of wildlife populations (CAMPFIRE Newsletter, 1992). Thus CAMPFIRE was aimed at restoring positive perception of wildlife as a valuable resource and to provide a powerful incentive for rural people to adopt wildlife management as an alternative to conventional subsistence agriculture (CAMPFIRE Newsletter, 1994).

CAMPFIRE is a philosophy of sustainable rural development, which allows rural communities to manage and benefit directly from indigenous wildlife. It is essentially an entrepreneurial approach to development that uses market forces to achieve the economic, ecological and social sustainability of wildlife (Zimbabwe Trust 1993). Approximately 85 000 rural inhabitants are currently benefiting from CAMPFIRE revenues.

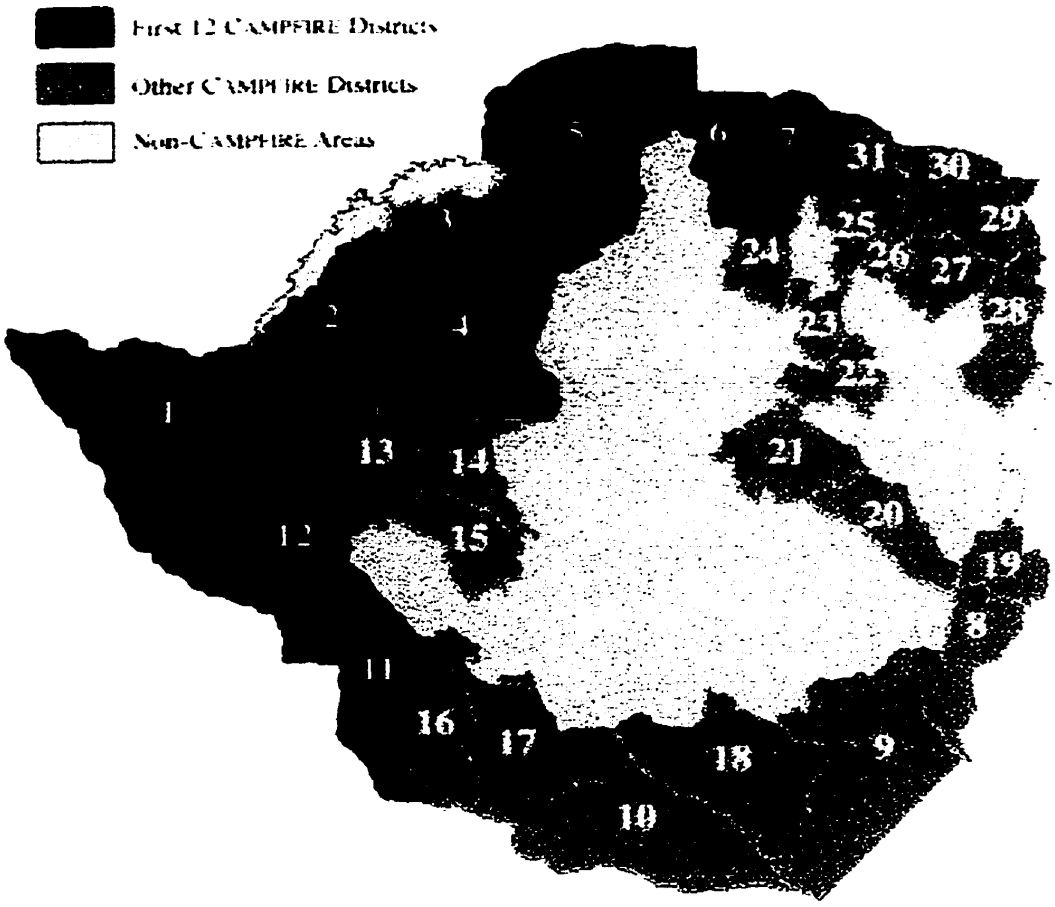
CAMPFIRE is a programme with dual objectives. By making wildlife profitable to rural communities, it attempts to generate rural development while simultaneously providing local communities with incentives to conserve wildlife and to manage interrelated natural resources such as soils, water, woodlands, grazing and arable land. For this reason, CAMPFIRE rests on three premises:

- wildlife have a competitive economic advantage over cattle in areas marginal for agricultural production and cause less environmental damage;
- the best people to manage wildlife are the landholders; and
- the practical way to promote wildlife conservation is through financial incentives (Murphree 1993).

CAMPFIRE attempts to institute local wildlife management and change the perceptions of communities towards wildlife by demonstrating the potential this resource has to earn income for rural households (Martin, 1986).

CAMPFIRE has been described as "a philosophy of sustainable rural development that enables rural communities to manage, and directly benefit from indigenous wildlife." It is essentially an entrepreneurial approach to development, and conservation that uses market forces to achieve economic, ecological and social sustainability of wildlife use (Zimbabwe Trust, 1993).

Decentralisation of the wildlife management and utilisation to local authorities in Zimbabwe has been occurring within the overall government policy of shifting decision making to lower tiers of government. The CAMPFIRE programme was aimed at decentralizing the management and decision making, of common property resources (CPRs) to those local communities who incur the cost of their management (Martin 1986). Because the policy originated in the Department of National Parks and Wildlife Management, its initial focus was on the management of wildlife resources. However, the concept has recently been applied to other areas of resource management such as grazing lands and forest management (National Parks and Wildlife Policy, 1998).




**CAMPFIRE Districts (as of November 1997)**

| | | | | | |
|---|---|---|---|---|---|
| 1. | Hwange | 10. | Beitbridge | 21. | Chikomba |
| 2. | Binga | 11. | Buthlumaitangwe | 22. | Marondera |
| 3. | Nyaminyami | 12. | Tsholotsho | 23. | Goromonzi |
| 4. | Gokwe | 13. | Lupane | 24. | Chiweshe |
| | (divided in 1993 into Gokwe North & South) | 14. | Nkayi | 25. | Guruve |
| | | 15. | Bubi | 26. | UMP/Zvataida |
| 5. | Hurungwe | 16. | Matobo | 27. | Murewa |
| 6. | Guruve | 17. | Gwanda | 28. | Nyanga |
| 7. | Muzarabani | 18. | Mwenezi | 29. | Mudzi |
| 8. | Chipinge | 19. | Chimanimani | 30. | Rushinga |
| 9. | Chiredzi | 20. | Buhera | 31. | Mt. Darwin |

**Figure 1.1: CAMPFIRE Areas**

The CAMPFIRE Project in Zimbabwe represents the application of a theory of collective action based on establishing self-organising and self-governing groups at the producer community level. Murombedzi (1991a) argued that, apart from increasing income for households and communities, local-level management under common pool resource use, will lead to sustainable economic systems, greater concern for preserving the environment and increased attention to long-term survival of current practices. A major component of this theory, is the substitution of centralised management and control of natural resources, especially wildlife, by decentralised ownership and control (Peterson 1991a).

According to Murombedzi (1991b), The Campfire Project attempts to give villagers a share of the revenues generated from the utilisation of wildlife in their areas. He states further that, "..the key mechanism for the effective management of wildlife resources is to give focused value to those who are its de facto managers". Murombedzi (1991b) also argues that the problem of turning wildlife into a critical[34] resource in the communal areas of Zimbabwe, is one of replacing an ineffective state management system with local management.

CAMPFIRE is the first comprehensive program to test the notion that conferring specific proprietary rights and related economic benefits to local communities who share access to a given set of natural resources, will engender responsible stewardship. With appropriate

[3] Critical refers to the importance wildlife resource now have to communities in bringing economic benefits to them.

support, the program design anticipates sustainable improvements in the management of the resources and sustained participation in a new stream of revenue (Murphree 1995). Apart from the envisaged economic benefits outlined above, CAMPFIRE is based on two sustainability principles namely: biological sustainability achieved through the management of quotas; and socio-economic sustainability achieved by ensuring that producer communities benefit directly from wildlife. Most projects under CAMPFIRE create buffer zones around National Parks and other protected areas and act as reservoirs for wildlife-based and other resources. The CAMPFIRE programme depends on inter-linked ecological, economic, legal, social and institutional factors.

Ecologically, it is based on the understanding that indigenous wildlife is likely to be the most appropriate land-use for agriculturally marginal areas. Economically, it requires the existence of markets for goods and services that wildlife provides. It also requires that these markets provide greater returns than what could be earned from other income sources, mainly agriculture. CAMPFIRE's most fundamental principle is that benefits from wildlife utilisation accrue to those who pay the financial and social costs of tolerating wildlife. Martin (1986) argued that unless this condition is met, CAMPFIRE would suffer the fate of other misguided approaches to rural development.

### 1.4 Study Purpose

In order to bring together conservation and economic development, a number of policy instruments have been used the world over, under different property regimes, and with

varying degrees of success. This study examines the use of incentives to achieve sustainable use of communally-owned wildlife resources. Two such incentives examined in this study are financial benefits and community empowerment. This study examines the CAMPFIRE programme in Zimbabwe to assess its ability to change people's attitude towards wildlife by providing incentives. Furthermore, an analysis of whether devolution of management responsibility to local communities has led to improved conservation of wildlife resources will be carried out.

## 1.5 Study Objectives

The study sought to accomplish the following objectives:

1. To examine the benefits accruing to the communities under the CAMPFIRE programme;

2. To assess the linkage between benefits from CAMPFIRE and attitude to wildlife;

3. To provide policy recommendations on how economic incentives and empowerment can be used effectively in the sustainable management of natural resources by rural communities; and,

4. To identify opportunities for further research.

## 1.6 Hypothesis

Communities will manage their natural resources more sustainably when they receive direct benefits which exceed the perceived costs of management and when they participate in the decision-making regarding management and utilization of same.

In order to test this hypothesis, a number of issues were examined:

- An economic analysis was carried out to determine the economic benefits and costs of CAMPFIRE to the local communities. The study examined linkages between economic benefits and any changes in peoples' attitudes towards wildlife.

- An institutional analysis was carried out to determine the involvement of local communities in the decision-making process, in relation to the management and utilisation of wildlife under the CAMPFIRE programme. The nature of such involvement was also examined to determine if it constituted full devolution or co-management.

Further analysis was conducted to determine whether participation of local communities in the management of wildlife resources has led to more sustainable resource use, a before and after scenario.

## 1.7 Study Area

Fieldwork was carried out in the Dande communal Area of the Guruve District. Guruve District straddles the Zambezi escarpment and lies in the North of Zimbabwe within the Zambezi River Valley (Figure 1.1). Dande Communal Land is bordered by Mozambique in the North, Chewore Safari Area to the west, and Rukowakoona Mountains to the south. Dande falls wholly within Natural Region IV, a region which experiences fairly low rainfall and is subject to periodic seasonal droughts and severe dry spells even during the rainy season. Due to low agriculture potential in Dande the sizes of the wards are larger than the rest of the district to facilitate wildlife management. The average area for each of the 8 wards in Dande is 520 sq. km. compared to the average ward size in the district of 63,5 sq. km. The suitable farming system in this area is extensive livestock farming but this was inhibited by the presence of tsetse-fly. Only 8 of the 28 wards constitute Dande Communal Land (Chapoto, Chisunga, Neshangwe, Chiriwo, Kanyurira, Matsiwo A, Chitsungo and Matsiwo B. Above the escarpment, a further 12 wards make up Bakasa, Kachuta, and Guruve Communal Lands. Only three wards among them fall in Natural Regions IIa and III. Guruve Communal Land, containing nine wards, is entirely within Natural Region IIa, a region which enjoys moderately high rainfall and normally has favourable agricultural conditions. The region is suitable for intensive farming based on crop and livestock production. The whole of Guruve Communal Land has a land area of 572 sq.km. almost the same size as one ward in Dande Communal Land. Population density in Dande is very low due to the marginal agriculture potential a factor that makes

CAMPFIRE more significant in this area.

Guruve is not unique in the sense that it cuts across natural regions. While appropriate authority status was granted to the Guruve District Council, CAMPFIRE was implemented in the most marginal areas within the district. There were two reasons for this. One is that due to the sparse population in Dande wildlife was more prevalent and benefits from its utilisation would be greater. The second reason is that wildlife would have greater economic return per hectare in these marginal area than livestock or crop production.

Guruve is one of the first districts to be granted appropriate authority status in 1989 in terms of the Parks and Wildlife Act (1975, section 95 as amended in 1982). The District is made up of 28 wards and the total population is 135 637 according to the 1992 census. The reason for choosing Guruve District for this study was that it is one of the first districts to implement CAMPFIRE and has a long history of implementation. During preliminary data collection, key informants advised that Guruve provides a more representative model of community involvement in the management of wildlife resources. Furthermore, the large part of the district is situated in natural region IV which is agriculturally marginal, and wildlife management is expected to be more ecologically and economically viable than livestock farming.

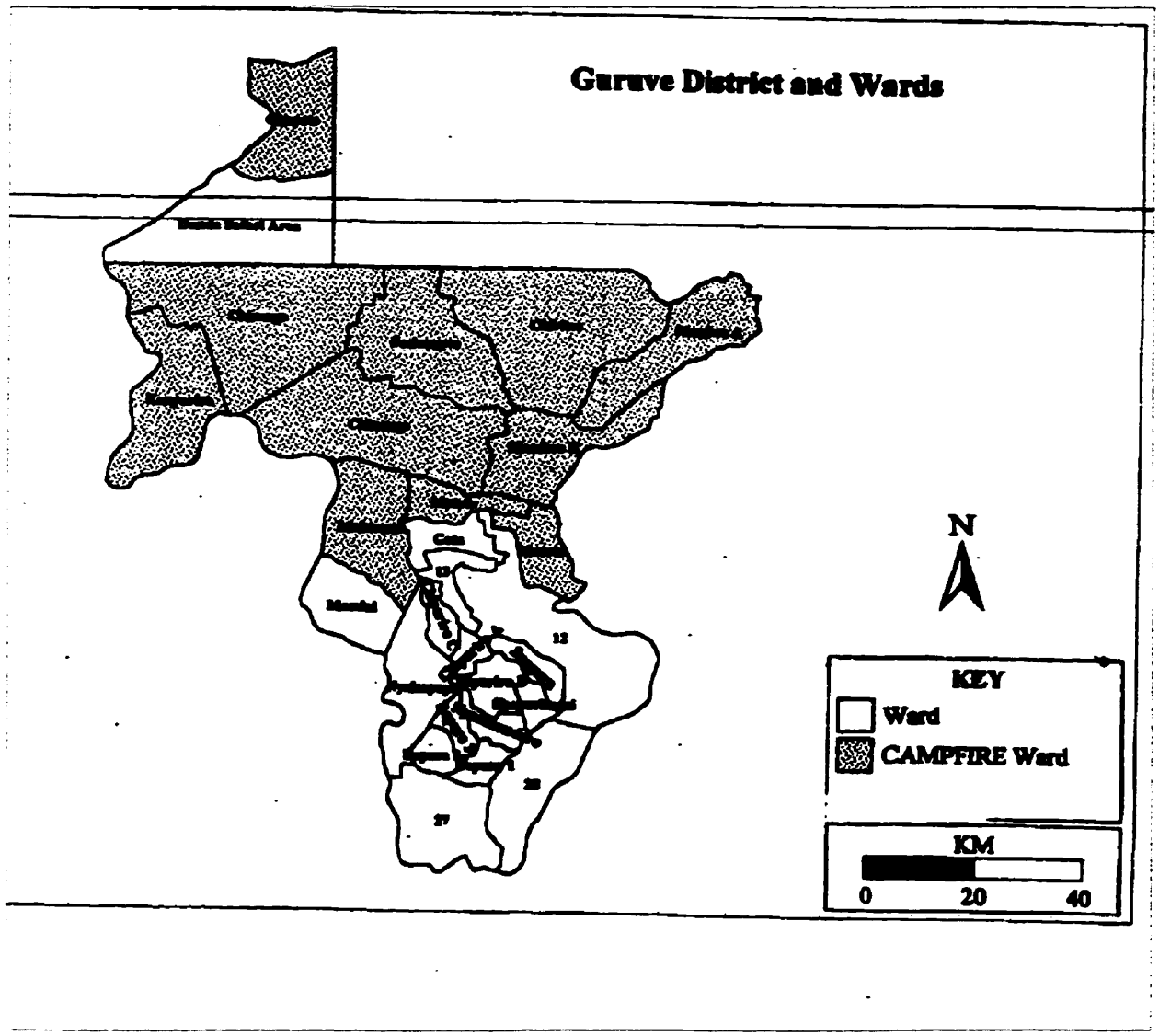



**Figure 1.2: Guruve District CAMPFIRE Wards**

## 1.8 Study Methodology

The study results were obtained through two main methods. An extensive literature analysis was carried out to establish the various theories that are related to the study and to obtain relevant data and information. Most of the data for the study came from literature on CAMPFIRE. This secondary data was used extensively to supplement the gaps in the information obtained from the interviews. The second method used was interviewing of selected informants from the CAMPFIRE Collaborative Group (CCG) and a few community members in Kanyurira Ward in Dande. Data analysis involved the synthesis and reporting of responses for each survey question. This synthesis is contained Chapter 5.

## 1.9 Organisation of the Study

The study is divided into six chapters. Chapter 2 gives some background on Zimbabwe including the evolution of wildlife management leading to CAMPFIRE and some background of the study area. Chapter 3 analyses the key theories related to the research topic namely; the use of economic incentives, property rights and co-management. Chapter 4 examines in some detail the CAMPFIRE project while chapter five discusses the methods and findings of the study. The final chapter gives the summary, conclusions and recommendations emanating from the study.

# CHAPTER 2:

# BACKGROUND:

## 2.1 The Zimbabwe Setting and Its Wildlife Heritage

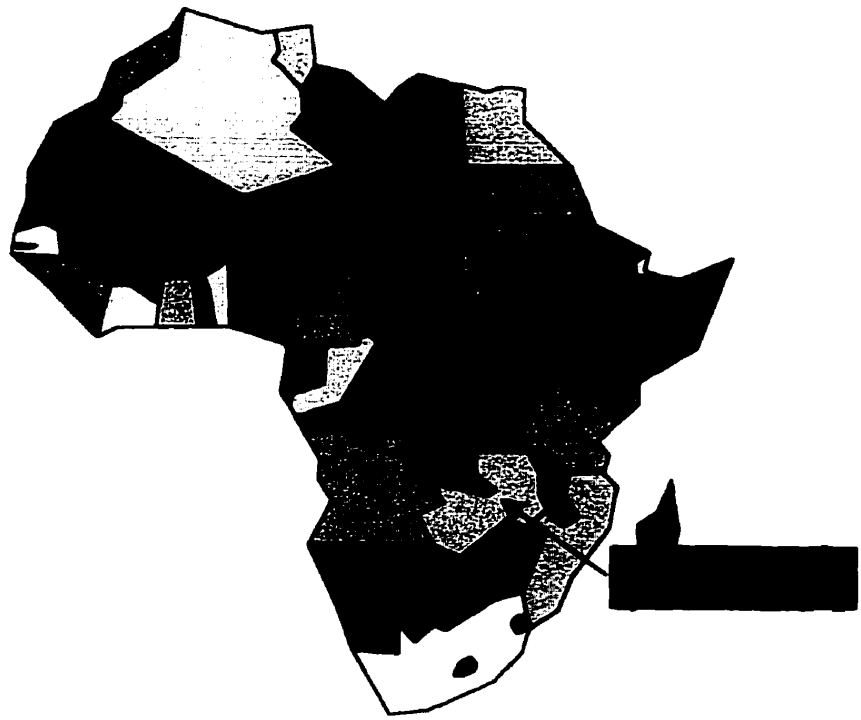
Zimbabwe is a landlocked country in the Southern Central Africa with a land area of 390 759 hectares. The country is located between 15 ° and 22° south latitude and between 24° and 33° east longitude. Zimbabwe is bordered by Zambia in the north, South Africa in the South, Mozambique in the east, and Botswana in the west. Figure 2.1 shows the physical location of Zimbabwe. The population of Zimbabwe according to the 1992 census is 10.4 million and an annual per capita income of $568 (United Nations Statistics Division 1994). About 70% of the population live in rural areas and depend on agriculture for livelihood. Due to the country's diverse wildlife resources, eco-tourism is becoming the fastest growing industry (Zero 1991). There are 4 200 plant species, 250 species of large mammals, 640 species of birds, 122 species of fish and 153 species of reptiles and an unknown number of insect species (Zimbabwe's State of the Environment Report 1992). Zimbabwe has the largest population of black rhinos, and has over 50 000 elephants (IUCN 1988).

Amidst this abundance of wildlife, the country has a growing human population, much of it rural, living in abject poverty and severe land degradation. Traditionally, Zimbabweans have derived livelihood from natural resources including wildlife. The Zimbabwean tradition has been based on sustainable use of natural resources. However, colonialism

left a legacy of hostility towards wildlife resulting from legislation that alienated people from wildlife resources. Most of the colonial legislation although well-meaning, was counter-productive by putting alien aesthetic and moral judgements into a legalistic framework (Zimbabwe Trust 1992). Colonial policies that saw the creation of national parks and protected areas often resulted in loss of habitat and decline of species throughout the African continent. Conflicts and distortions in the use of natural resources in Zimbabwe exist as a result of the historical legacy of inequitable land and natural resources access and current policy and institutional failures. They also arise from contradictions in perceptions of resources' value among different users (CAMPFIRE News Nov. 1994).

Today, Zimbabweans believe that the conservation of the country's biodiversity can best be achieved by integrating natural resources into the mainstream of the country's economic and social development. Emanating from this thinking, Zimbabwe has developed a number of policies to attempt to reconcile the demands of biological conservation and international responsibility with the demands for economic development. Zimbabwe's natural resources policies have been guided by five basic principles: ecological viability, economic practicability, social acceptability, ethical admissibility, and international responsibility (Zimbabwe Trust 1992). CAMPFIRE is best understood in this context.

**Figure 2.1:Zimbabwe in the African Continent**



Wildlife management in Zimbabwe has evolved through major historical stages, pre-colonial (up to 1890), colonial (from 1890 to 1980) and post-colonial (from 1980 to date). It is important to review this evolution in order to be able to more fully understand and appreciate the context of CAMPFIRE.

## 2.2 Evolution of Wildlife Management in Zimbabwe

Wildlife management in Zimbabwe has evolved through different property regimes. In order to understand this evolution, it is essential for one to appreciate it in the context of the different administrative eras.

### 2.2.1 Pre-Colonial Era- up to 1890

For many centuries, indigenous communities and wildlife in Zimbabwe co-existed sustainably. Individual households had access and right of use for all natural resources subject to traditional norms and cultural controls and sanctions. For example, traditional societies in Zimbabwe practised and enforced wildlife conservation through the timely hunting of birds and animals, avoiding indiscriminate killing. These societies believed that wanton killing of animals was punishable by the spirits. For example, the killing of young animals and females in gestation would bring some bad luck. Hence, conservation practices were embedded in taboos, totems and customs. Totems were based on specific animal species. A clan bearing a particular totem could not eat that animal, or else they would lose all their teeth. Conservation of habitat for wildlife was also encouraged in tradition. To ensure selective cutting of trees certain tree species could not be cut for firewood and were preserved for either medicinal or cultural values. Anyone who would cut these prohibited trees would be punished under traditional sanctions.

Traditional chiefs and headmen played a crucial role in safeguarding the people's rights and access to resources. All land was held communally with the chiefs and headmen

reserving the right to allocate arable and grazing lands. Once allocated the individuals had exclusive rights to use these resources in a sustainable manner. The people therefore had a fundamental right to access natural resources subject to cultural norms and sanctions, whose main purpose was to ensure sustainable use. Box 2.1 gives an example of traditional management system that has survived to date.

**Box 2.1**

**Community approaches to Common Property Resources management: The case of the Norumedzo community in Bikita, Zimbabwe by J. Makuku.**

The Norumedzo community manages the *Jiri*, and from this communal forest, they derive an insect called *Harurwa* which since time immemorial have been harvested for food and bartering. The story of *Harurwa* is explained through the famous myth about their forefather Nemeso, who was born with four eyes and had been sent to live away from the rest of his kindred as he was considered a bad omen to his father, Chief Mazungunye, and the entire clan. They sent him away with nothing to eat or start a new life. In exile in the forest, Nemeso had a dream in which he saw a swarm of *Harurwa* which he was told to collect for relish and to exchange for grain and other food. The following morning his dream came true as he saw a swarm of *Harurwa* flying into the *Jiri*.

The *Jiri* is known today as the largest source of *Harurwa* in the country. The Norumedzo

community holds great pride in their history and the insect. Once a forsaken people they feel exalted when surrounding communities come begging for the insect during harvest time. The *Jiri* covers about 50 hectares and has two main tree species: *Uapaca kirkiana,* which grows in valley bottoms and *Brachystegia spiciformis,* which grows on the upper slopes. The trees are kept short due to the continuous severing and breaking during harvest time. The stoking density of the woodland is high (about 1100 trees per hectare) which is a result of the forest being conserved as a protected area due to its importance as a source of food and income for the community. The community

follows a laid down procedure for harvesting *Harurwa,* passed down from one generation to another.

A ceremony is organised each year, just before the insects fly into the *Jiri.* At this ceremony, the chief will select one of the kraal heads to be in charge of the team that ensures that the harvesting operations are done in a orderly manner. Prior to collection, a camp is set up which monitor the harvesting operations. The monitoring team comprises of one representative from each of the 24 surrounding villages. These people are chosen on a rotational basis to afford each member of the community to participate. That forest is also used to collect dead wood for firewood, fruit and caterpillars. Members of the community also obtain permission from the chief to cut poles for constructing houses.

### 2.2.2 From Tribal Order to Colonial Disorder

The colonial era brought about a land tenure policy that systematically removed all title of the local people to natural resources and consequently undermined their resource

management systems and practices (Child 1995). The Game and Fish Conservation Act of 1929 and the Land Apportionment Act of 1930 entrenched the disposition of rights of access to resources by indigenous people. The indigenous peasantry was forced into agriculturally marginal areas, which became over-crowded as the populations grew. It is within the native reserves that most of the degradation occurred. The CAMPFIRE programme was focussed in these native reserves.

Native communities, as they were referred to in those days, were not allowed access to wildlife resources, even for subsistence living. However, the same animals affected their livelihoods by destroying their crops and livestock and, from time to time, killing humans. Despite the establishment of protected areas, much of the country's wildlife is outside national parks, on communal lands and privately owned ranches. In some parks, due to overpopulation of some species and lack of adequate habitat, environmental degradation threatens the long-term survival of wildlife. Poverty, lack of alternative livelihoods in the communal areas and disintegration of the traditional management systems has led to the over-exploitation of natural resources. Such over-exploitation created a situation where the costs caused by wildlife were not matched by corresponding benefits. This created a confrontation between wildlife and people resulting in illegal poaching and inflated compensation claims for crop and livestock damage. Since its alienation, wildlife has little value to communal people. Instead, it imposes external costs to communities in the form of crop damage, livestock loss and other costs.

Government as the custodian of the resource, had to do something to reverse this trend. As it was impossible to put a policeman behind every wild animal, (in the words of the State President, Comrade R.G. Mugabe). The only possible solution was to come up with a programme that involved the communities in the management of wildlife. There was need for introducing an incentive system to encourage communities to conserve the wildlife resource.

The Department of National Parks and Wildlife Management realised that the alienation of wildlife from the people was contributing to the negative attitudes towards wildlife. Furthermore, the artificially high value accorded to cattle due to provision of high subsidies was leading to the rapid disappearance of wildlife. The answer to this problem was seen as the commercialisation of wildlife resources through wildlife farming, so that landowners would get direct benefits from wildlife resources on their land. The Parks and Wildlife Act of 1975 gave private landholders the proprietary right over wildlife. The success of this programme in the greater conservation for wildlife led to its expansion to the communal areas where wildlife continued to be under threat. This resulted in the birth of CAMPFIRE in 1982 (Murphree 1993). The Department negotiated with other levels of the government to return wildlife revenues to communal people through local District Councils. The 1982 amendment to the Parks and Wildlife Act gave communities proprietary rights over their indigenous resources. The Minister of Environment and Tourism can delegate "appropriate authority for wildlife resources." to any Rural District Council that wishes to join CAMPFIRE.

### 2.2.3 Post-colonial Era - 1980 to Date

The post-colonial era in Zimbabwe also contributed to further disintegration of traditional administrative structures through the installation of government designed institutions, the Rural District Development Committees (RDDCs), the Village Development Committees (VIDCOs) and Ward Development Committees (WADCOs). As a result, the traditional systems have been widely disrupted and have lost power to administer land distribution and management of common property resources to the emerging formal government institutions (Makuku 1993). Although these new institutions have succeeded in land distribution, they have failed in natural resource management. The reason according to Makuku (1993), was that the new institutions were dominated by newcomers and who lacked any significant knowledge about the management of communally-owned natural resources. The Government is now trying to restore the role of traditional leadership in natural resources management through new legislation.

## 2.3 Study Area Background

For the purpose of wildlife utilization, Dande is divided into Dande north, Dande South, and Dande east. Dande comprise 8 wards, each constituting a producer community under CAMPFIRE. All wards are different in terms of both wildlife and human endowment and these factors have a bearing on the success of CAMPFIRE as will be discussed in this chapter. Table 2.1 shows the demographic composition of Dande in 1992.

**Table 2.1: Population by sex in Dande CAMPFIRE Wards:**

**Total number of households and Average household size**

| Ward | Population | | | | Household | |
|---|---|---|---|---|---|---|
| No. | Name | Males | Females | Total | Number | *Average Size* |
| 01 | Chapoto | 709 | 753 | 1462 | 309 | *4.7* |
| 02 | Chisunga | 1260 | 1442 | 2702 | 529 | *5.1* |
| 03 | Neshangwe | 3677 | 4182 | 7859 | 1702 | *4.6* |
| 04 | Chiriwo | 899 | 1066 | 1965 | 441 | *4.5* |
| 05 | Matsiwo A | 2094 | 2500 | 4594 | 983 | *4.7* |
| 06 | Matsiwo B | 2915 | 3265 | 6180 | 1257 | *4.9* |
| 07 | Chitsungo | 4946 | 5334 | 10280 | 1972 | *5.2* |
| O8 | Kanyurira | 359 | 378 | 737 | 120 | *6.1* |

(Data Source: National Census 1992)

### 2.3.1 Wildlife

Dande Communal Land supports a diverse and extensive population of large mammals. Reliable data on wildlife in this area exist on two main species, elephant and buffalo. Table 2.2 shows the average number of elephant and buffalo in Guruve North and South Concessions and area of approximately 3008km$^2$

**Table 2.2: The average number of elephant and buffalo in the Guruve North and South**

| Species | Guruve North | Guruve East and West | Estimated Total |
|---|---|---|---|
| **Elephant** | 1 377 | 546 | 1 923 |
| **Buffalo** | 4 568 | 1 907 | 6 475 |

(Source: Bond 1997)

### 2.3.2 Wildlife Distribution

Distribution of wildlife in Dande is heavily influenced by human settlement patterns. The more densely populated East area supports very little wildlife. There is no wildlife in the South of Guruve. CAMPFIRE therefore only exist in the North of the District in 11 of the 28 wards namely: Chapoto, Chisunga, Neshangwe, Chiriwo, Matsiwo A, Matsiwo B, Mahuwe, Chitsunga, Mushumbi, Masoka and Kanyurira Figure 1.2 shows all the CAMPFIRE Wards in Guruve. The highest concentration of elephant and buffalo is found in Dande Safari Area, a protected area under Parks and Wildlife Estate. The fact that the safari area in the middle of communal lands, has led government to allow it to be part of CAMPFIRE area.

### 2.3.3 Land use in Dande Communal Land

Land use in Dande is restricted to agriculture, livestock production and wildlife utilization in the form of safari hunting and limited photographic tourism (Bond 1997).

#### 2.3.3.1 Agriculture

The extent of cultivated land follows the alluvial soils and is more concentrated between Dande and Manyami river covering an area of 14 000 hectares. The major crop produced is cotton with yields as high as 1,700 kg/ha. Cotton selling prices ranged from US$5 to US$6 per kg in 1996 (Bond 1997). Other crops grown include maize, wheat and groundnuts, but these are cultivated for subsistence purposes.

Livestock farming, the most viable type of agricultural land use in Dande Communal Land has been inhibited by the presence of tsetsefly in the area. When tsetse fly was eliminated in Dande in late 70s, cattle were introduced for the first time. In 1988, 2 234 cattle were recorded in Dande Communal Land. The cattle population has been increasing over the years. It is very difficult to estimate the commercial value of cattle in the area compared to wildlife, as cattle are not normally sold but are used for draught power and as a sign of wealth.

#### 2.3.3.2 Wildlife Utilization

Dande Communal Area enjoys abundant wildlife resources. Most of the wildlife is concentrated in the Dande Safari Area. However, the elimination of tsetsefly in this area in recent years, has resulted in an influx of people and livestock without prior land use planning. As more land gets converted for agriculture, wildlife habitat is lost resulting in the decline in wildlife populations. Utilization of wildlife in Dande Communal Land

involves game viewing, bird watching, commercial and sport fishing, photographic and hunting safaris. Safari hunting is the primary form of wildlife utilization in DCL as evidenced by the hunting quotas for 1996 shown in Table 2.3.

**Table 2.3: A summary of important species offered on quota in the Dande, Chewore and Doma concessions.**

| Species | Dande | Chewore | Doma | Total |
|---|---|---|---|---|
| **Elephant Bulls** | 18 | 12 | 2 | 32 |
| **Elephant Cows** | 25 | 22 | 11 | 58 |
| **Buffalo Bulls** | 105 | 90 | 16 | 211 |
| **Lion** | 1 | 6 | 0 | 7 |
| **Leopard** | 22 | 30 | 2 | 54 |

(Source: WWF Office in Harare)

The above figures show that approximately 50% of the overall quota are allocated in Dande. This clearly demonstrates the significance of CAMPFIRE in Dande Communal Land (Bond 1997). In order to manage these hunting concessions, the Dande Communal Land has been divided into three hunting areas, Dande North, Dande South, and Dande East.

# CHAPTER 3:

# THEORY

## 3.0 Introduction

A review and analysis of literature was conducted prior to primary data collection, and continued throughout the report writing. The purpose of the literature review and analysis was to determine what is already known on the research topic, review existing theories and hypotheses and identify any gaps that required further study and analysis. The literature review and analysis focused on three main concepts namely; the use of economic incentives, property rights, and collaborative management. All these topics are related to the CAMPFIRE concept of using incentives for the sustainable use of common property resources.

CAMPFIRE is based on the application of economic incentives for local communities in the project areas as a way to change their perceptions towards wildlife. Once people start to view wildlife as a source of livelihood and a sustainable land use option, they are expected to conserve and sustainably utilise it. The use of resources for the direct benefit of communities that live with them, will both act as an incentive to encourage the people to conserve those resources, as well as promote their sustainable use. In economic theory, prices have proved to be powerful incentives. If resource prices are set too low, excessive use will be made of the resources. To secure an efficient use of resources, outputs should

be priced at marginal production costs plus marginal user costs. This concept is difficult to apply to some environmental goods which have no market value for example forests used for fuel wood in developing countries, yet users do not pay for these resources. This becomes one important cause of depletion of these resources, since their social, ecological and cultural value cannot easily be reduced into economic value. Assigning property rights to open-access resources is still important in order to promote the sustainable use of the resources (Pearce 1993).

Since prices are instrumental in changing behaviour, it follows that financial benefits derived from a resource will have an important influence on behaviour towards that resource (Pearce 1993). From conventional economic perspective, the sustainability issue is directly related to the issue of market failure and its correction through assigning the true social values of the resources. This requires an inter-generational efficient allocation of environmental resources, through price corrections based upon individual preferences. This will involve sustainable use of resources by present generations that allows future generations to be able to use the same or equivalent quality and quantity of those resources. A vast literature has grown on the various monetary methods and techniques to value environmental goods and services (Turner 1993).

### 3.1 The Use of Economic Incentives

In practical terms, the use of economic incentives in natural resources management has been mostly confined to pollution controls. These controls have taken the form of

economic disincentives such as emission taxes, tradable emission permits, and economic incentives such as subsidies, and tax rebates. However, in developing countries where pollution is not a major environmental problem due to less industrialisation, the use of economic incentives has been predominant in promoting sustainable natural resource management systems. Some examples of the use of economic incentives in natural resources management are contained in Box 3.1 below. The use of economic incentives in natural resource management, represents a recent policy shift from using legislation exclusively or "command and control" approach, to application of voluntary instruments to encourage conservation of natural resources. The shift has come about as more governments realised that centralised control of natural resources was not producing the desired effect. This is due to the lack of co-operation from the people who live with the resources.

Experience has proved that in many cases the empowerment of local communities and their involvement in the management of natural resources is more effective than centralised control (Barbier et al 1994). The CAMPFIRE project in Zimbabwe is a clear demonstration of increased conservation effort that has resulted from enabling local communities to directly benefit from wildlife resources. There are other examples on the use of economic incentives in resource conservation in communal areas in Africa and North America that will be discussed later in this chapter. Voluntary measures of enforcing conservation or self-enforcement using economic or market-based incentives, have therefore gained popularity with policy makers in recent years.

Economic incentives can also be used to encourage local communities to conserve natural resources by allowing them to benefit from the resource. The question is how an economic incentive can be used to provide the kinds of signals that will result in sustainable development. There are many examples of economic incentive approaches being used in different countries.

**Box 3.1**

**Examples of use of Economic Incentives in Natural Resources Management**

One example is the over-exploited New Zealand Fishery case, where too many fishermen were chasing too few fish. Revenues derived from the annual fee charged for a fishing licence were used to buy out fisherman who were willing to forgo any future fishing rights for certain species. It was not long before a sufficient number of licences had been retired, to ensure sustainable harvesting. Because the program was voluntary, those who left the industry did so when they felt they had been adequately compensated. On the other hand, a valuable natural resource had been saved from depletion by the creative use of economic incentives (Tietenberg, 1992).

In Kasunga Park in Malawi, local people have been given the right to harvest tree caterpillars, and to establish bee-hives in exchange for curbing other consumptive uses which were incompatible with the objectives of the Park. The gross income of these micro-enterprises is US $198 per hectare from tree caterpillars and $230 from bee-keeping. These earnings are higher than the income realised from subsistence agricultural

productivity from the same size area and therefore serve as an incentive for conservation of natural resources.

Game populations in Namibia have been conserved by giving the local people financial incentives. Prospective hunters negotiate fees directly with the landowner, with typical fees ranging from US $600 for *kudu* and US $100 for springbok. As a result, some protected species have now increased in number, and breeding nuclei are sold to landowners at subsidised prices.

On the other hand, in KaNgwane, South Africa the site for a tourist lodge in the Mthethomisha Game Reserve is leased to the private sector. The lease payment is put into a trust fund which is used for community projects selected by the tribal authority. In Richtersveld National Park in South Africa, the land on which the park lies is owned and occupied by Namo community. The community has leased it to the Government but retained rights to graze an agreed number of livestock and to undertake the controlled harvest of natural products. Lease payments are deposited into a trust fund with trustees being appointed by the community (McNeely 1993).

A study was also undertaken in Manitoba, Canada by Belcher (1992) to evaluate the performance of economic incentives targeted at enhancing wildlife habitat in the Prairies.

In order to address the problem of degradation of the Prairie ecosystem caused by the draining of wetlands for agriculture, and to restore the disappearing wildlife habitat, Ducks Unlimited agreed to pay farmers a certain sum of money. The money was paid as compensation for not cultivating on wetlands. This would enhance wildlife habitat. The Habitat Enhancement and Land-use Program (HELP) was introduced to serve as an incentive for landowners in the Rural Municipality of Shoal Lake in Western Manitoba. The incentives were designed with the goal of preserving and developing wildlife habitat in harmony with agricultural production. Using the hypothetical valuation technique for land-use restrictions developed by Bishop and Harbelein (1992), the perceived level of compensation necessary to preserve a hypothetical 4 hectare slough[5] was insufficient to prevent farmers from draining and clearing these idle areas. The incentive was attractive only to those landowners with permanent potholes or areas of marginal land that did not have the potential for being converted to economically viable agricultural land.

The above examples demonstrate that economic incentives can be effectively used in promoting the sustainable utilisation of communally owned resources, provided that they are at a certain level that exceeds the cost of conserving those resources. Tietenberg (1992) concludes, that economic incentives can be used not only to reduce conflict between economic development and environmental protection, as in pollution, but can serve to make economic development the vehicle by which environmental protection is

[5] A slough is a kind of pothole in the Prairie Provinces of Canada created buy melting glaciers. These potholes are a special type of wetland that has become important wildlife habitat, particularly birds

achieved. He perceives economic incentive policies as being woven together to facilitate the resolution of environmental problems based on 4 basic principles.

These are:

1. **full cost principle** which says that all users of environmental resources should pay the full cost, including externalities of such use;
2. **cost-effectiveness principle** which advocates that a policy must achieve its objective at the lowest possible cost in order to be considered cost effective;
3. **property rights principle** that requires local communities to have property rights over flora and fauna within their area; and
4. **sustainability principle** that denotes that development should not deplete the resource base that sustains it over time, and future generations should be allowed to inherit an equal or equivalent[6] body of resources with which to develop.

While the first and second and third principles are quite straightforward, the fourth principle raises some conceptual problems of what can be considered to be " equal or equivalent " body of resources for future generations. The problem is to establish the value for future generations whose needs and desires may be completely different from present generations particularly with regard to the technological developments taking place. However, it is not the intention of this study to debate sustainability principles.

[6] "equal and equivalent" refers to the amount of resources that the future generations should have compared to resources available to present generations. The resources may not be the same type or form but must be equal and equivalent. No specific measure of on these resources to ensure the equity and equivalence has been defined.

### 3.1.1 Regulatory versus market-based instruments

While an economic approach suggests that government action could be used to restore efficiency, it also suggests that inefficiency is not a sufficient condition to justify government intervention. Any corrective mechanism involves transaction costs, and if these transaction costs are too high and the benefits to be derived from correcting the inefficiency too small, then it is simply best to live with the inefficiency (Tietenberg 1992).

Legislative enforcement often requires large bureaucracies, which most government departments cannot afford given the cuts on government spending. The use of voluntary mechanisms in natural resources management requires the participation by community members in the management of the resources and in decision-making which gives them a sense of ownership of the resources. In some cases formal partnership agreements between government and local communities have contributed to the sustainable use of communally-owned natural resources. Policy makers are more inclined to use incentives, particularly market-based or economic incentives, as a way of encouraging the conservation of natural resources or discouraging environmental degradation. In the past, legal enforcement was the most widely used mechanism for ensuring the conservation of natural resources. The reasons for this shift in policy have been discussed in detail at the beginning of this chapter and it is not the intention to repeat this debate.

While regulatory or direct control instruments involve the direct limitation or reduction of

activities, economic incentives enable individuals to choose freely to modify or reduce those of their activities that degrade the environment (Barbier et al 1994). The cost-effectiveness of economic instruments depends in large part on the extent to which they relate incentives to depletion of resources and conversely, to the economic benefits that will accrue from environmental improvements. Furthermore, the cost-effectiveness of economic instruments and incentives makes them an attractive alternative to regulatory controls. Economic instruments also decentralise much of the decision-making to the single firm or household, which typically has better information for determining the appropriate individual response to given economic conditions.

However regulatory controls have been preferred in the past and are still used for the following reasons:

a) Authorities are more familiar with direct controls, and to switching to one based on economic instruments implies additional requirements for information, higher initial administrative costs, more complex and unfamiliar processes and bureaucratic opposition;

b) The effects of regulation are certain, while those of economic incentives are more uncertain;

c) Charges (emission charges and pollution taxes etc.) and economic instruments are perceived to have undesirable impacts on inflation, income distribution and international

competitiveness;

d) Firms and individuals fear that charges and other economic instruments might be misused for financial rather than incentive purposes - they are more familiar with legislation and can influence it through negotiation; and

e) Economic instruments are unpredictable (Barbier, 1993).

On the other hand, arguments for preference of using economic incentives instead of legalistic approach are as follows:

1. There has been a general move towards reduced direct government intervention in society both financially (privatisation and enterprise culture) and in regulatory terms (deregulation).

2. A move towards policy integration combined with increased recognition for the need for cost-effectiveness of control.

3. A gradual transition away from end-of -pipe pollution abatement to preventive measures such as 'precautionary' or anticipatory approach (Pearce and Turner 1991).

4. In cases of common property resources enforcement of regulations is difficult and economic incentives have more chances of success in such situations.

It should however be noted that, the distinction between economic and regulatory instruments is not particularly sharp in reality, as combinations of instruments are frequent.

The economic incentive approach to environmental and natural resources regulation has, in the last decade or so, become a significant component of environmental and natural resources policy. Instead of mandating prescribed actions, this approach achieves environmental objectives by applying economic disincentives for those causing the pollution or degradation of the environment. Some examples of economic or market-based incentives and disincentives used extensively in industrialised countries include green taxes, tradable emission permits, emission taxes and debt-for-nature swaps. Tax on catch has been used to a limited extend in fisheries in order to impact on the level of effort and to prevent depletion. Such taxes have in many instances, resulted in many small fishermen being driven out of business, depriving them of their livelihood. Government plays the important role of ensuring that markets are sending the right signals to all participants, in order to achieve sustainable outcomes.

The judicious application of economic incentives is a means of establishing that kind of compatibility. By being creative in the design of policy instruments, the incentives of

local and global communities can be harmonised. Emission control standards facilitate cost sharing among participants while ensuring cost-effective responses to the need for additional control. Similarly, conferring property rights for biological populations to local communities provides an incentive for those communities to protect the populations.

## 3.2 Property Rights Theories

Since the CAMPFIRE programme involves the management of wildlife resources in a communal setting, it is necessary to review some literature on Common Property Rights theory. Property rights are a bundle of entitlements defining the owners rights and privileges to the use of a resource. Rights also imply limitations in the way the resource can be used (Tietenberg 1992). Property rights are usually distinguished in terms of *res nullis* (private property), *res publica* (state property), *res commune* (common property) and open access (Berkes 1989, Ostrom 1990). Bromley (1989) defines property rights as essentially human constructs or conventions that describe a relationship between an individual or group or an object of value and all others with respect to that object.

It is therefore necessary to do a brief analysis of the different property regimes in order to understand the property regime that pertains in the CAMPFIRE programme. It is also necessary to understand that the nature of the property regime that pertains in any situation will determine the flow and distribution of benefits to the property rights owners. Property rights in natural resources management, determines who gets the benefit from the resource. Bromley (1989) summarises the four types of property regimes as follows:

**State Property:** Under a state property regime individuals have the duty to observe use/access rules of the controlling agency (government)

**Private Property:** Owners have the right to undertake socially acceptable uses and non-owners have a duty to refrain from socially unacceptable uses as well as the right to expect socially acceptable uses

**Common Property:** The management group (owners) has a right to exclude non-members and non-members have the duty to abide by the exclusion. Individual members of the group have both rights and duties with respect to use rates and maintenance of the thing owned.

**Non-Property:** An open access resource with no defined users and owners and the benefit stream is available to anyone. Individuals have privileges and no rights to respect user rates and maintenance of the asset. Property rights are therefore seen as existing in a continum, between private property on one extreme, and open access on the other, balanced by a multiple shades of overlap. Irrespective of where they exist, property regimes are aimed at controlling open access situations and manage resources for the benefit of the right holders at the exclusion of non-right holders. Open access is therefore a result of failure of one or more of the other property regimes and cannot be treated as a property management regime in its own right.

However, property rights discussion has been controversial as different proponents of specific regimes claim its superiority over others. Proponents have also been bogged down by both definitional and paradigm problems. The cause of the confusion has been

discerning the difference between common property and open access. The two have been treated as property rights regimes. Instead, open access should be regarded as failure of any of the other property regimes. Hardin (1968) may also have suffered from this confusion when he wrote his "Tragedy of the Commons " theory. In fact, Hardin's confusion of the two regimes may have been responsible for confusing the whole property rights debate.

It is therefore necessary to discuss the meaning of common property in the context of this study. The definition of common property as used in this report is different from Hardin's (1968) "Tragedy of the Commons" and also what Tietenberg (1992) terms common property resources. The definition of common property resources, that Hardin (1968) based his thesis on, emanates from an apparent misconception. The misconception is that, unless the number of individuals is small, or there is coercion or some other special device to make individuals to act in their common interest, rational self-interest will override group interests (Olson 1965). Common Property resources have been defined as those resources for which ownership is communal, with limited transferability yet allowing exclusivity (Tietenberg 1992). These resources are different from open-access resources and that they belong to no single individual, but are available to everyone. Hardin's "Tragedy of the Commons" was therefore relevant to open access resources not common property resources.

Many authors in property rights have concluded that any natural resource may be managed

successfully given a recognizable and enforceable property rights regime that is appropriate to the existing social, environmental and economic situation (McKean 1996; Becker and Gibson 1996). In fact some anti-tragedy proponents have documented instances of effective common property management regimes located round the world ( Berkes 1989; Bromley 1989; Martin 1988, 1994a; Hess 1996). Open access, is recognized as a problem by all property regime theorists, irrespective of their ideological subscription. Non-existence of effective management institutions, leads to tragedy by decreasing accountability, externalizing costs, eliminating incentives to manage for long-term (Bromley 1985,1989; Larson et al 1990). The management question is not which management regime can best manage a given resource, but whether any of the regimes can adapt to changes, pressures, and demands associated with a give situation. In Zimbabwe state ownership of wildlife during colonial and post-colonial times has not solved the dissipation of wildlife, hence the introduction of CAMPFIRE was a way to move away from state ownership to common property resources management.

Common Property Resource management under CAMPFIRE is similar to what Ostrom (1990) calls "evolving institutions for collective action." The bison case cited by Tietenberg (1992), is more of an example of open-access resource as opposed to common property resource. Before the coming of the European settlers to North America, the bison was a common property resource managed sustainably through traditional norms and institutions of the Plains Indians. When the European traders came and commercialised bison hunting, there was a disintegration of the traditional management systems resulting

in development of an open access system.

A major conclusion drawn by researchers studying common property institutions is that incentives can make a difference (Berkes 1989). When the rules in use are well matched to the specific conditions of the resource and its users, incentives can lead to sustained use for centuries. In this context, the types of rules that users devise and monitor, are heavily influenced by whether the communal or community property rights of the users are acknowledged, accepted and/or protected (Tietenberg 1992).

The protection of community property rights, should be a major objective of those interested in maintaining natural resource systems as well as the source of livelihood for those people who have carefully nurtured the resources. The intervention of government officials in common property regimes, has often resulted in the loss of a sense of ownership and responsibility for the future by local communities and the ultimate depletion of the resource (Ostrom, 1990).

Common Property Resource (CPR) management theory suggests however that, degradation of CPRs, and resources held under other property regimes, usually results from the absence of sufficient incentives for sustainable resource utilisation. Runge (in Murombedzi, 1991a), argues that strong incentives are required for collective action in the village economy; an economy which is characterised by independent decision making regarding resource use.

Larson and Bromley (1990) have also demonstrated that due to poverty, poor resource endowments and a fragile ecosystem, insufficient household incentives do not lead to sustainable resource use, but may lead to resource degradation. Lawry (1989) also notes the changing nature of the "village economy" from communal resource use to more individualised alternative income sources such as commercial agricultural production. When this situation is accompanied by the declining income or benefits from CPRs due to degradation, emphasis tends to shift from natural resources conservation to increased agricultural production. One may conclude from Lawry's argument, that when a common good has been decimated and no longer has significant value to the community, there is a tendency by individual households to resort to other forms of livelihood. The result is further degradation of whatever remains in the commons.

Ostrom (1990) points out that users of common property resources with inclusion rights, are willing to invest substantial time and effort in developing and monitoring effective local rules to regulate the use of the resource. However, if these rights are interfered with by government, those who have invested time and energy in trying to develop a sustainable local regime lose their sense of ownership and responsibility for the future. There are examples of irrigation systems that have collapsed after government officials took them over to improve them without careful consultation with the local farmers (Ostrom 1990). Rees (1990) argues that uncontrolled free access need not be a problem assuming usage does not exceed the system's natural regeneration or adjustment capacity. Once the natural capacity has been exceeded, continued use will have cost implications for

everyone, irrespective of whether or not one has contributed to such costs (Rees 1990). Furthermore, the incentive for individual community members to invest in a common property resource is low, unless there is a possibility of preventing others from reaping the benefits of the investment (Rees 1990).

In common property resource management regimes, there are four types of externalities that affect the sustainable management of those resources. These are; external benefits; reciprocal externalities, transfer externalities, and pecuniary externalities (Tietenberg 1992). These have been described below. Externalities exist whenever the welfare of some agency is affected by the activities of another agent (Tietenberg 1992). There are both positive (external economy) and negative (external diseconomy) externalities.

1. **External benefits:** flow to society through private efforts, for example when government or the private sector, fund community projects or programmes.

2. **Reciprocal externalities:** occur where all users impose costs on each other. For example, consider the case of a group of fishermen fishing from a lake. Every fish caught will increase each fisherman's costs, as the less the fish stock, the more time and effort is required to catch the same quantity of fish as when stock was large. However, individual fishermen will only control harvest when it costs them more personally to catch fish than the extra cash they can get from that extra fish. All users may be perfectly aware that they are depleting the asset, but unless

everyone agrees to adopt the same conservation measures, only the individuals who act in accordance with the conservation measures bear all the costs of harvesting restrictions. However, benefits accruing from these conservation practices are shared by all users. Until some harvest controls are imposed, resources tend to be overused in the short-term with the result that in the longer run the total stock will be exhausted.

3. **Transfer externalities** occur when one user of a resource impose a cost on other users of the same resource. An example is when a few individuals poach wild animals that are a communal resource, they benefit at the expense of the community that pays for the existence of the resource. When transfer externalities are created and incurred within a small homogeneous community, it is conceivable that the affected individuals, if left to themselves, will negotiate a voluntary agreement or institute some rules to achieve
4. Optimal resource allocation (Coarse 1960 and Turvey 1963). When the community is too large, then government intervention may provide the most efficient solution. This is because transaction costs for resolving a dispute between a large group of firms or people are usually too high to justify the cost to individuals of the resolution, compared to the cost each individual has to pay. In cases like these disputes are left unresolved and total depletion occurs in the case of a natural resource. This is why government intervention in such cases is likely to provide optimum solutions.

5. **Pecuniary externalities:** arise when an external effect is transmitted through higher prices. An example is the decimation of the beaver in Canada as the relative price of fur increased due to increase in the fur trade.

### 3.2.1 Property Rights in Communal Areas in Zimbabwe

Agriculture, which traditionally constitutes the principal source of income, for communal people, is based on crop production on individual holdings. Although legally state-owned, these holdings are under individual tenure. Tenure is therefore usufruct in nature, i.e. the right of use without legal title. In practice, households receive traditional heritable rights to residential and arable land. Rights to off-farm resources such as grazing, woodland and water resources were originally communally-owned, belonging to a defined group of people by tradition. However, in most areas these have become open access, resulting in serious degradation. The reason for this development, is the confusion in the authority over land and the disintegration of traditional control systems. This situation was created by the colonial governments and re-enforced by the post-colonial government. The pressure over these resources has also contributed to this situation as land hungry peasants occupy any open land for survival. Immigration from established communal areas to uninhabited forest areas, has resulted in many illegal settlements without proper land use planning, particularly in the Zambezi Valley area.

Resources such as minerals, wildlife and commercial timber were reserved to the state through legislation. Under CAMPFIRE, wildlife resources have been placed under council

proprietorship. CAMPFIRE currently operates in 36 out of the 58 Districts. Any district is free to join CAMPFIRE on condition that it has viable resources from which the communities can derive sustainable benefits. Although CAMPFIRE initially focused on wildlife utilisation, communities are now calling for the extension of the CAMPFIRE concept to other natural resources including forests, honey, minerals, grass etc. In a number of districts, forestry resources are already being exploited under the CAMPFIRE concept.

### 3.2.2 Implications of current Property Rights regime in Zimbabwe

The fact that agricultural land and wildlife resources are held under different property rights regimes in the communal areas of Zimbabwe, will have an effect on how the people value these resources. Due to the better defined property rights for agricultural land (private-cum-communal), benefits from agriculture are predictable and exclusive as compared to those from wildlife (communal-cum-common property) which are unpredictable and communal. Lawry (1989) argues that, because communal people in Zimbabwe derive income from individual holdings there is likely to be competition rather than co-operation among community members, in the use of communal resources. Each household seeks to maximise its income. Given this situation, common property regimes like those that apply to wildlife in Zimbabwe, can easily turn into Tragedy of the Commons if workable incentives and defined property rights are absent. CAMPFIRE attempts to re-defined or re-allocate property rights in situations that could result in the Commons Tragedy. Property rights situation that prevails in Zimbabwe's communal areas

clearly demonstrates that although theoratically different property regimes exist in practice, the dividing line is not fine. The argument has been made earlier on that, what determines the success of any property regime is its ability to adjust to different circumstances. CAMPFIRE in Zimbabwe has avoided the blueprint approach and preferred a flexible approach in recognition of the different institutional set-up in different RDCs and the different resource endowments. CAMPFIRE therefore becomes a concept that can be adapted to a variety of resource management situations.

Lawry (1989) concludes that when groups of households vary in their level of economic interest in the communal resource, this affects their willingness and ability to adapt to sustainable communal resource management. A dilemma occurs in achieving co-ordinated common behaviour in an environment where households in any one community derive income from different sources. For example, if some households' within a community derive income mainly from agriculture and other households derive their main income from CAMPFIRE, then it becomes difficult to encourage conservation effort at community level using wildlife revenue as an incentive. This would suggest that CAMPFIRE as an incentive system will be more effective in a community where revenue from wildlife constitutes the major or substantive source of income for the majority of households. This is one way of looking at this issue but the study will examine other views.

### 3.2.3 Collective Action Theory

Current efforts by government and other agencies are directed primarily at simplifying and reducing resource management to private property and public management of state property (Ostrom 1990). This simplification is not in the best interest of resource management and development as demonstrated by degradation of the resource base that occurred over the years, despite widespread private ownership and extensive government regulation over resource use. Experience has shown that there is value in preserving and enhancing the diversity of management regimes, and in establishing partnerships in management responsibilities (Becker and Gibson 1996). This is because different property right structures may require different management regimes or a combination of two or more regimes in form of partnerships. CAMPFIRE in Zimbabwe demonstrates this dichotomy of wildlife management regimes that exists side by side.

Community-based management is effective because;

- it promotes democracy and equity by giving members of the community a share in deciding how resources are used and a greater share in the benefits derived therefrom,
- it is economically and technically efficient in that users have clearly defined responsibilities for their decisions and actions and can provide local resources,
- local community control brings a measure of stability and commitment to management that a centralised government approach lacks, and
- it is adaptive and responsive to variation in local social and environmental conditions and changes in those communities (Becker and Gibson 1996).

The success of community-based management of common property resources often depends on having incentives in place to increase the benefits (financial or other) to participants. These incentives can take various forms such as, financial incentives for products and services, or social incentives in the form of social recognition. According to Uphoff (1986) certain societal characteristics enhance management of common property resources. These include interdependency and homogeneity among users, especially kinship relationships, traditional societal settings with traditional roles and norms intact. The CAMPFIRE project in Zimbabwe has demonstrated the importance of this argument. Most of the CAMPFIRE areas are in the Zambezi Valley, an area only recently settled due a history of tsetse-fly infestation. Most of the settlers in Dande are therefore from different parts of the country. Traditional norms and practices therefore play a limited role in contributing to wildlife management, due to the heterogeneity of most of the communities. Co-operation may therefore become difficult in situations like these and only meaningful incentives can be the answer. Ostrom (1990) found that in communities where traditional roles and norms were relatively intact, the capacity for local institutions of all kinds to manage natural resource appears to be greater. Diminished capacity at local level to sustain productivity often resulted in the decline of traditional institutions such as those operated by chiefs and councils of elders (Ostrom 1990).

In some cases however, researchers found that common property resource management may result in "free ridership", which makes voluntary co-operation unlikely (Olson 1965). Individuals who were able to benefit from group action without bearing any of the costs of

creating this "good" were likely to do so to the extent that it coincided with their rational self-interest. According to Olson (1965), "free ridership" could be eliminated in smaller groups where individuals who cheat could easily be identified and put under social sanctions.

Solutions to Hardin's Tragedy of the Commons situation centre on the need for government intervention or privatisation to regulate use of the resources and avert the tragedy. Such intervention however, requires the tacit consent of the society to be effective. Privatisation can also lead to degradation. For example, in the case of Botswana's rangelands, government's intervention in the regulation of communal pasture proved to have undesirable socio-economic effects on the local communities without producing demonstrable ecological benefits compared to those under communal management practices.

Considerable rethinking of the conclusions drawn on "The Tragedy of the Commons" has been done by many authors. Empirically there is more "collective action" than one would predict in the "rational actor" tradition of deductive analysis. If one assumes that others are as rational as oneself, one's satisfaction is maximised by making contributions in good faith to creating the collective good, so long as one values the good itself more than the cost of one's contribution. As long as others do the same, it pays to be co-operative (Olson 1965). Such behaviour is consistent with Axelrod's(1984) "general maximising strategy co-operation". Murombedzi (1991a) also found evidence that the benefits of

voluntary contributions are far from zero even in large groups.

In his more recent work, Hardin (1994) emphasised the role of sanctions in controlling individual behaviour. Blomquist and Ostrom (1993) identified critical components of collective action strategy as: (a) the ability to identify all users, (b) the establishment of clear boundaries within which management will occur, and (c) ongoing communication between users. Hardin (1994) also believes that the way consumers use natural resources depends on the nature of the property rights governing resource use. When property rights are universal, transferable, and enforceable, the owners of the resource have a powerful incentive to use that resource efficiently, since the failure to do so results in a personal loss (Tietenberg 1992).

Tietenberg (1992) therefore concludes that the evident loss of efficiency in environmental management results from mis-specified property rights that create perverse incentives. He further argues that local communities should have property rights over the flora and fauna within their area. These property rights should entitle the local community members to share in any benefits accruing from the preservation of the species. Ensuring that local property rights over genetic resources are defined and respected would give the local communities a much larger stake in some of the global benefits to be derived from the use of those resources. This would also enhance the prospects for effective enforcement.

### 3.3 Collaborative Management

Co-management has been used loosely to refer to management regimes that involve owners of a resource and the users. Various terms such as, collaborative management, co-operative management, joint management have been used to refer to co-management. Most literature on co-management has been limited to North America where different types of agreements have been developed between the governments and resource owners and the indigenous people who have traditional rights over the same resources.

It has been argued that the devolution of wildlife management responsibility to local communities within CAMPFIRE has been very limited and instead what has occurred is co-management between government and the producer communities (Murphree 1993). The management of wildlife within CAMPFIRE involves some form of partnership between national government and the local communities. To guide discussion on the existence and operation of such partnerships the writer examined some literature on co-operative management. Two types of management approaches have evolved in the 1960s and 1970s: exclusive management and inclusive management (Borrini-Feyerabend 1996). In the former approach the intention was to alienate local people from the resources in protected areas, with options ranging from anti-participatory attitude to outright resettlement of the resident communities. In the latter approach the interest of local communities were paramount with some level of participation in the management of the resources. Unfortunately, the former approach spread extensively in the South including Zimbabwe. The latter approach is the basis for participatory approaches like co-management and it the approach that CAMPFIRE was built on.

The thinking underlying co-management is that despite the fact that responsibility for managing a resource is placed under a specific agency, its decimation or mis-management affects various groups in society. In particular people who use or derive income from these natural resources, the people who posses knowledge, capacities and aspirations relevant for their management, and people who attach unique cultural, religious or recreational value. Many such communities possess customary rights over the protected resources, despite the fact that this right may not be officially recognised or legally specified. There are various stakeholders to the natural resources, based on institutional mandate, geographic proximity, historical association, dependence for livelihood, economic interests and a variety of other capacities. In co-management agreements it may be necessary to distinguish between primary and secondary stakeholders based on the strength of the interest which can be established through a set of criteria.

Most successful partnerships are characterised by an established institutional arrangement for effective representation. It is unfortunate that most traditional institutions for resource management have been destroyed or weakened by modern state policies that do not recognise them and hence do not assign them any meaningful role. Where such institutions exists they are not recognised as important stakeholders. In Zimbabwe, the colonial administration weakened the traditional institutions by undermining traditional knowledge and superimposing western systems of resource management. The post-colonial era saw the further weakening to the traditional institutions through the creation of local administrative institutions that undermined the traditional ones.

The introduction of CAMPFIRE was an attempt to create partnership between the government, and local communities in the management of wildlife resources. The lack of recognition of the roles of traditional management systems in the management of natural resources has often created conflict between government agencies and the local residents and has often resulted in the failure of protected area management projects. Berrini-Feyerabend (1996) identified three forms of representation under co-management agreements. These are: self-representation; direct representation; and indirect representation. CAMPFIRE initially operated on indirect representation of communities through the CAMPFIRE Co-ordinating Group and the RDCs. In Guruve for example there has been more self-representation.

Literature on co-management has identified two versions. The weak version seeks consensus among stakeholders while the strong version involves institutional arrangements such as inclusion of the stakeholders in a management board or complete devolution of specific authority and responsibility (Renard 1996). Murphree (1995) argues that programmes that have a development focus and confers strong authority and responsibility status on legally sanctioned communal

**Box 3.2: Forms of representation**

- **self-representation** (face-to-face; people personally express their opinions, discuss, vote, work, offer a material contribution, receive a benefit, etc.; people represent themselves);

- **direct representation** (people delegate others - relatives, friends, respected members of their community, leaders of a community-based group - to represent them in all sorts of activities, but maintain a direct , face-to-face relationship with their representatives);
- **indirect representation** ( people delegate others - experts, appointees of large associations, non-governmental organisations, parties or government officials - to represent them in all sorts of activities, but they rarely - if ever - interact with their representatives on a person to person basis).

natural resources are most likely to be cost effective and sustainable. The CAMPFIRE programme presents a wide array of experience in this respect. In some RDCs the weak version prevails and in other RDCs the strong version exists. While devolution of authority at district level is legally-binding, extension of the same authority to the WADCO and VIDCO levels is not legislated but is based on policy guidelines developed by the DNPWLM. Whether the involvement of local communities in wildlife management within CAMPFIRE, through various forms of co-management arrangements, has led to better management of the resources will be discussed in later chapters.

One conclusion that has been reached regarding co-management is, that any such arrangement should fit unique needs and historical and socio-political context of each case and cannot be appreciated outside of such context. Co-management should therefore be considered a process rather than a fixed state. It has also been noted that governments

have the responsibility for providing legal and policy frameworks and systems of enforcement that protects against negative interference as well as to provide economic incentives and financial support. Incentives are an important linkage between stakeholders interests and conservation interests.

### 3.4 Role of Governments

Although it has been said that governments should for the most part keep away from well functioning common property regimes, nonetheless government has an important role to play in all the property management regimes. These include:

1. Harmonising the actions of various partners, and co-ordinating programme implementation;
2. Providing incentives to encourage collective action;
3. Enforcing regulations and policing;
4. Resolving conflicts and provision of arbitration; and
5. Provision of technical and financial assistance to communities in their efforts to manage natural resources.

There is now widespread consensus that human-induced changes on natural life-support systems are proceeding at a non-sustainable pace. Responses are still largely reactive, problem specific and regulatory in nature. This approach is doomed to failure since regulators are always running behind the problems. Governments have the responsibility to create policy environments that facilitate the empowerment of local communities so

that they can gain a basic livelihood in a manner that can be sustained. Most of these communities have no choice but to live in fragile, marginal and vulnerable environments (Chambers and Conway, 1992 in Turner, 1993). The world governments ought to realise that the broader issues of third world debt and poverty lie in the centre of sustainable resource management and sustainable development.

Within CAMPFIRE, communities are empowered to manage wildlife resources in a sustainable manner. However, due to the fugitive nature of the resource government should still have the responsibility to ensure its sustainable use. There is clear need to balance social needs and ecological sustainability and government has an important role to play in this regard.

# CHAPTER 4 :

# CAMPFIRE

## 4.1 Objectives of CAMPFIRE

The Parks and Wildlife Act of 1975 was amended in 1982 to allow Rural District Councils (RDCs) to obtain appropriate authority for wildlife in their area of jurisdiction. Resulting from this amendment, CAMPFIRE was initiated in Zimbabwe, in 1986 as a way of extending the success story in the commercial farming sector of devolving proprietorship of wildlife to communal landholders. The philosophy behind CAMPFIRE was to enable the communities to enjoy the benefits from utilisation of wildlife. CAMPFIRE also sought to involve communities in the management of the resource as a way to encourage sustainable use. Specifically CAMPFIRE had two main objectives, namely:

1. To develop community-based programs to increase income and sustain natural resources; and
2. To improve local capabilities to sustainably manage the resource base.

The project sought to address these problems through the introduction of a system of economic incentives offering communities the potential to derive income from conservation and sustainable management of their wildlife resources. Another form of incentive under CAMPFIRE was giving communities property rights to wildlife, as a way of promoting stewardship over the resource. Income was initially expected to come mainly from tourist activities, particularly safari hunting. According to Child (1995), there

are several challenges facing commercial use of wildlife in communal areas. These are: (a) unclear boundaries within communal areas, (b) unclear proprietary units, (c) unattenuated property rights, and (d) lack of legal mandate by communities over natural resources (Murphree 1993).

## 4.2 CAMPFIRE Principles

Martin (1986), one of the key authors of CAMPFIRE, outlines five major pre-requisites for the programme to succeed:

1. As long as wildlife remains the exclusive property of the State, no one will invest in it as a resource, and therefore its long-term sustainability is in doubt. This is particularly true of wildlife found within common or open access areas like communal areas.

2. The concept of 'open commons' must be replaced by effective control/custody of a geographically defined resource territory by the resident communities, whose wellbeing is mostly dependent on the long-term sustainability of the resource. The unit of proprietorship should be as close as possible to the unit of production, management, and benefit.

2. Secure tenure and decentralised management over natural resources through economic empowerment of local communities or producer communities is essential. The unit of proprietorship should be as small as

practicable, within ecological and socio-political constraints.

4. Introduction of economic incentives is essential to make wildlife a competitive form of land use where this makes ecological and economic sense. Economic benefits derived directly from the management control over (renewable) natural resources and commercialisation by those most closely associated with this resource will lead to sustainable use and conservation. **Benefits must be sufficiently large to elicit the requisite sustainable management response.**

5. It is when local communities themselves experience the tangible economic benefits of local natural resources that they appreciate their value to their own livelihoods more. They will accordingly make the efforts, sacrifices, and initiatives needed to protect (manage) these resources for their own long-term benefits.

Since its inception, CAMPFIRE was under the danger of being turned into a preservation program due to Northern perceptions that place value only on the aesthetics of wildlife and deplore any consumptive use. In order to succeed, CAMPFIRE had to provide a flexible approach which incorporates the values, aspirations and needs of communities. The programme aimed at discarding the widely held academic belief that all rural communities have similar, stereotyped needs and aspirations.

## 5.4 Legal Basis for CAMPFIRE

The Land Apportionment Act of 1931 legalised the expropriation of 198,539 km2 (51%) of the land by the settler community. Native Reserves7 amounting to 17,602 km2 (30%) of the poorer grade marginal land were allocated to the Africans who, at the time represented 96% of the population. The remaining land, 72.859 $km^2$, 19% was reserved for national parks, forestry (Kay 1970). The Native Land Husbandry Act of 1951 provided for the control of the utilisation and allocation of land occupied by natives. This was meant to ensure its efficient use for agricultural purposes and to ensure proper conservation of natural resources.

This Act transformed the traditional communal land tenure system by attempting to confer individual tenure to grazing and arable land. The natives were hostile to this Act and it was suspended in 1962. Following the unilateral declaration of independence in 1965, a "community development" approach to communal area management was adopted which sought to strengthen the role of traditional leaders in land management. The Tribal Trust Land Authorities Act of 1967 and the Land Tenure Act of 1969 restored the powers of traditional leaders to allocate land. The interpretation of these legislative measures by the natives was that it was a way of undermining African nationalism through "tribal government".

The Parks and Wildlife Act of 1975 gave proprietorship of wildlife to the large commercial farmers. Small-scale communal farmers living in wildlife-rich areas did not receive the same privileges and benefits from the Act. In this sense, the Act was considered discriminatory. In 1982 the post-colonial government corrected this anomaly by amending the Act to allow the Minister to appoint Rural District Councils (RDCs) to be "appropriate authority"[8] for such area of communal land as may be specified. This amendment forms the legislative base for the CAMPFIRE project. Although the legislative framework for devolution of wildlife management to RDCs was put in place in 1982, the development and implementation of CAMPFIRE only took place in 1989 when two district councils Nyaminyami and Guruve were granted "appropriate authority status". By 1994, 36 RDCs had joined CAMPFIRE and were managing wildlife on behalf of local communities.

Legally the attempt by CAMPFIRE to combine ownership, management, cost and benefit, has had the following problems according to Murphree (1995):

1. The tenure situation of communal areas is less secure and these areas are affected by natural resources management regulations imposed from outside their communities;

2. The appropriate proprietary units in these areas are communities of collective interest and are therefore more complex;

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8 "appropriate authority" is the legal term used in the Parks and Wildlife Act to denote the delegation by the Minister, of authority to manage wildlife usually landowners. For communal areas appropriate authority is given to district councils.

3. Legally these communities do not have "appropriate authority". That authority has been granted to Rural District Councils, which are large heterogeneous administrative units and arms of governments, more than representatives of communities. The Parks and Wildlife Act has therefore created a legal anomaly where private landowners are given appropriate authority over wildlife on their farms, while communal farmers still did not enjoy this authority.

Given this legal context, councils have been tempted to appropriate wildlife revenues for purposes of no direct benefit to producer communities. The government in order to bridge this gap, has enunciated policy requiring councils to further devolve their appropriate authority status to communities. There are however a few RDCs that have taken the ministerial policy seriously and promoted proprietary devolution to producer communities. In most of the RDCs, devolution has not taken place as envisaged and the recent Land Tenure Commission report (1994) has recommended the legal empowerment of Wards and Villages in the management and utilisation of natural resources.

## 4.4 Institutional set up for CAMPFIRE

*"Residents of communal lands will be encouraged to manage wildlife for their own direct benefit and government will actively promote the appropriate institutions to achieve this."* (GOZ, 1989)

*"Wherever possible, alternative strategies to reduce conflict between people and wildlife will be explored. This may include.....the development of appropriate*

*institutions in communal lands so that individual farmers affected by problem animals become the main beneficiaries of revenue earned from the wildlife."*

(GOZ, 1989)

Whilst " a new era began in Zimbabwe with independence in 1980, ..... the political and economic inheritance of the past determines many of the constraints and opportunities facing the new leaders". (Herbst, 1939). These constraints have also manifested themselves in various programmes initiated by the government and CAMPFIRE has not been an exception.

Institutional development under CAMPFIRE can be understood by examining the distinction between Local Administration (LA) and Local Government (LG), identified by Uphoff (1986). He defines LA as an extension of central government bureaucracy, usually represented by staff of central government ministries. Conversely, LG is accountable to its constituency and its members are elected or appointed and have authority to deal with development and regulatory tasks. Accordingly, Thomas (1991) views traditional chiefs as representing LG since they were appointed by virtue of their lineage. He further argues that DCs, WADCOs and VIDCOs have also assumed the same role although their effectiveness has been questioned. Uphoff (1986) points out that when LGs have little financial autonomy, they function as LAs for all practical purposes.

The innovative nature of CAMPFIRE is evidenced by its flexibility and hence its ability to incorporate different management systems. Uphoff (1986) argued that different kinds of resources demand different institutional requirements. This is because of the way in which

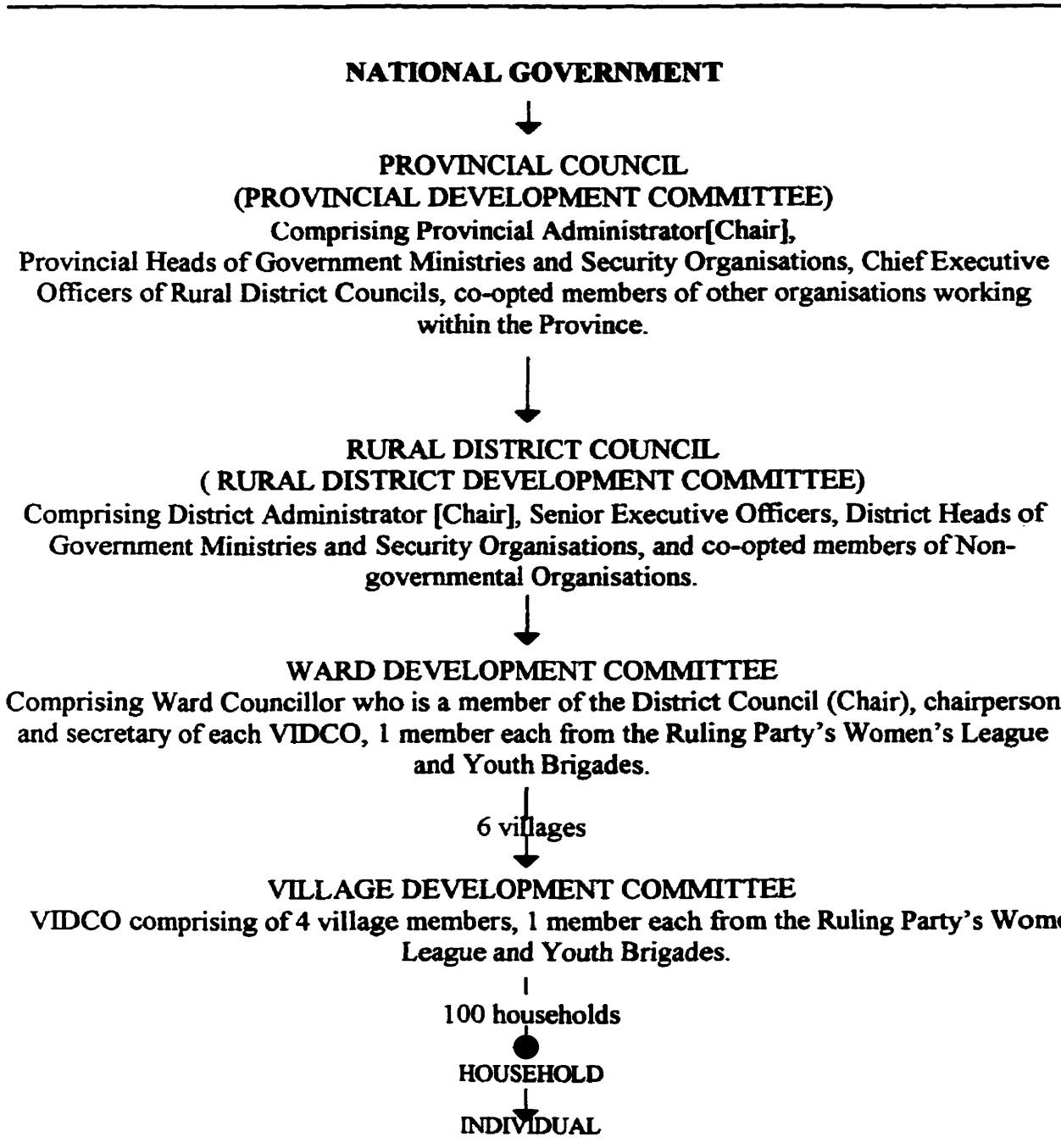
the resource interacts with the users. There is very limited literature on community wildlife management yet the nature of the resource is comparable to fish, about which much has been written (Berkes 1989; Ostrom, 1990). These resources are regarded as "fugitive renewable" and the fugitive nature has unique implications for developing management institutions. In most of the existing literature, these resources are "open access" and usually results in the "Tragedy of the Commons". Bromley and Cernea (1989), suggested that if open access is to be converted into an effective common property regime, the existence of clear resource boundaries, small (manageable) resource size and scope, and accessible information about the condition of the resource are critical. In the CAMPFIRE context, wildlife species include those that reside in one jurisdiction (the term "producer communities" has been coined based on such species although its application remains ambiguous). Other species like the elephant (*Loxodontus africana)* is highly fugitive and makes management a problem.

Furthermore, the characteristics of users, affect the outcome of common property resource management. As alluded to earlier, successful management of CPRs is common in situations where the size of the user group is small, the users are reasonably homogeneous and they reside in close proximity to the resource (Bromley 1989 and Cernea 1991) has recognised the potential for local membership organisations in Zimbabwe to take organised collective action to meet common goals. The problems identified in this respect include; lack of legitimacy and authority to resolve disputes, and lack of legal status. The fugitive nature of wildlife makes it multi-jurisdictional and the overlapping jurisdictions

generate complex management problems that require innovative institutional arrangements. The potential for institutional development under CAMPFIRE is further constrained by external influence that threatens the homogeneity of local institutions. Where such influence is strong it undermines local government and replaces it with local administration.

In Zimbabwe, the state retains ownership of wildlife. However, producer communities are being encouraged to determine their own annual off-takes with technical assistance from the DNPWLM. Communal areas in Zimbabwe fall under the administration of Rural District Councils (RDCs). These RDCs (65 in all) have legal jurisdiction over all resources in communal areas. They also have powers to allocate land, carry out development projects, generate revenue through various activities and create by-laws for resource management in their area. Councils comprise of elected councillors and have committees responsible for different activities that are chaired by councillors. One of the committees under each council, is the Natural Resources Committee (NRC), whose responsibility is overseeing the conservation and utilisation of natural resources. Under the Rural District Council is the Ward Development Committee (WADCO), comprising six Village Development Committees (VIDCOs) which has on average 600 households. The WADCOs are responsible for development planning in their area and submit plans to the

RDC. The lowest administrative unit is the Village Development Committee (VIDCO). The VIDCO comprises of 100 households and is responsible for development planning at village level and reports to the WADCO. Figure 4.1 shows the local government structure




Note: The 1984 policy document on decentralisation of governance reflected above, occurred before the amalgamation of Rural And District Councils.

**Figure 4.1: Local Government Structure Established in 1984**

designed after independence in 1984). The sizes of WADCOs and VIDCOs vary considerably depending on population density. This factor has some bearing on the amount of benefits accruing to households and the impact of CAMPFIRE in changing attitudes of communities towards wildlife.

It is important to mention that this local government structure was created in 1984, and was superimposed on traditional administrative structures comprising of chiefs, headmen and kraal heads, which the colonial government had strengthened to its advantage. This created overlap of responsibility and conflict in many areas. This situation has also accounted for the further weakening of traditional administrative structures. According to Murphree (1993), there are two necessary components to communal property regimes:

- Scale (both demographic and spatial) must be small enough to encourage conformity to rules largely by informal peer pressure;
- Costs and benefits must be relatively evenly distributed among members; and c) There must be linkage between responsibility and control. Given the above criteria, the appropriate authorities within CAMPFIRE, the Rural District Councils have been criticised for being too large to exert informal control and for being bureaucratic.

Rather than creating new institutions, it was proposed to strengthen the managerial and planning capabilities of the existing VIDCOs and WADCOs. It was however necessary to create additional local institutions to manage CAMPFIRE on behalf of the communities. The creation of institutions to manage CAMPFIRE, has been criticised as "centralised

decentralisation", by Murombedzi (1991b). This situation, it is alleged, has largely accounted for the failure in the total devolution of wildlife management to the local communities. The District Wildlife Committee (DWC) is the medium for local participation as well as a medium for joint ventures between individual wards that had insufficient resources to carry out separate viable wildlife ventures. The DWC also facilitates the participation of the RDC that is the legal appropriate authority for wildlife in communal land.

In order to strengthen grassroots participation, the chairman of the DWC is elected from among chairmen of ward wildlife committees. Other members are ward councillors, the chairman, chief executive officer and executive officers for finance and administration of the RDC members are responsible for co-ordination of hunting safaris and disbursements of revenue from wildlife to ward wildlife committees. Ward wildlife committees comprise of elected members from the VIDCOs of the six villages that make a ward.

To provide initial support to the CAMPFIRE, a group of key organisations influential in the development of the concept formed the CAMPFIRE Collaborative Group (CCG). Initially six organisations comprised the CCG, namely: The CAMPFIRE Association (CA), The Zimbabwe Trust (Zimtrust), The Centre for Applied Social Sciences at the University of Zimbabwe ( CASS), World Wide Fund for Nature (WWF), the Department of National Parks and Wildlife Management (DNPWLM) and the Ministry of Local Government, Urban and Rural Development (MLGRUD).

Membership of this group has been growing and plans are to open it to other relevant organisations such as the Forestry Commission and the Department of Natural Resources. The CAMPFIRE Association is the lead agency and a producer association with representatives from RDCs. The Centre for Applied Social Sciences at the University of Zimbabwe, conducts socio-economic research and monitoring for the programme, while World Wide Fund for Nature (WWF) provides technical advice and financial resources. The Zimbabwe Trust undertakes institutional development and training; and the Ministry of Local Government and Rural Development provides general support through its local administrative structures.

The DNPWLM as the national authority over wildlife provides the technical support for the CAMPFIRE programme and is responsible for approving quotas. The Department has established a Unit to co-ordinate the CAMPFIRE activities. The main functions of CAMPFIRE Co-ordinating Unit (CCU) are to provide technical advice on the marketing and setting of quotas for example, monitoring, training and interpretation. As part of its mandate, the CCU has initiated community-based management of fishery on Kariba[9] lakeshore. A matter of concern to the CCU is the inability of Rural District Councils to effectively use revenues from CAMPFIRE or putting it into unproductive use. These factors undermine the incentive structure for the programme, distort economic mechanisms, and lead to economic inefficiencies. Another common problem is that Rural District Councils often do not have adequate resources needed to carry out their mandate of district development. These councils therefore rely on CAMPFIRE funds to fund

[9] Kariba in the largest inland water reservoir in Zimbabwe situated in the North of the country.

development projects thereby reducing the funds going directly to households and negatively impacting the incentive to participate in the project.

Thomas (1991) argued that the creation of wildlife committees in the CAMPFIRE districts appears to be counter-productive. He argues that resources could have been used more efficiently if the participating agencies concentrated their efforts in supporting already existing local government institutions instead of creating new ones. He however, acknowledged that the political foundation for the VIDCOs and the WADCOs may render them obsolete under the Economic Structural Adjustment Programme (ESAP) and its successor the Zimbabwe Programme for Economic and Social Transformation (ZIMPREST). This is because they lack a sound economic base, which is the precondition for institutional viability under the current economic realities.

According to Kiss (1990) one of the major benefits of CAMPFIRE has been the strengthening of the capacity and resource base of the RDCs, WADCOs and VIDCOs. As District wildlife committees (DWCs) were incorporated into the RDCs as sub-committees, the revenue from wildlife strengthened the financial base for the RDC and gave them additional resources for local planning and development. The evolution of new institutions in the CAMPFIRE districts has tended to parallel the existing local government framework introduced in 1984. The only notable variation has been that the composition of village and ward wildlife committees has generally included traditional leaders alongside the new leaders.

In some areas, the wildlife committees are sub-committees of existing VIDCOs and WADCOs and in others, they are independent. The situation varies in different districts based on the acceptability or non-acceptability of the post-independence local government institutions. In certain cases, VIDCOs and WADCOs do not exist on the ground. Figure 4.2 shows the current institutional set for CAMPFIRE. Invariably though the Ward Wildlife Committees are sub-committees of District Wildlife Committees. This may be true if Thomas' argument is based on the assumption that these institutions are static and will not change with the changes in economic realities.

Ostrom (1990) argues that an essential element for local institutions to effectively manage common property resources is their recognition by the national government. Thomas (1991) recommends that RDCs should be allowed to adopt or at least give minimal recognition to by-laws that originate from "producer communities[10] under CAMPFIRE. The WWF would then act as a planning and management board of the DWC in a purely advisory capacity. The Board ensures that ward committees make informed decisions about wildlife management.

The use of wildlife income should be decided at the village level-- an important feature for local empowerment and an incentive to encourage conservation among villagers (Kiss 1990). This factor has caused conflict between the VIDCOs and the RDCs. The councils argue that wildlife resources belong to the whole district, irrespective of their uneven distribution within each district. As the *de facto* appropriate authority over natural

[10] Producer communities represent a ward which forms the basis CAMPFIRE revenue distribution.

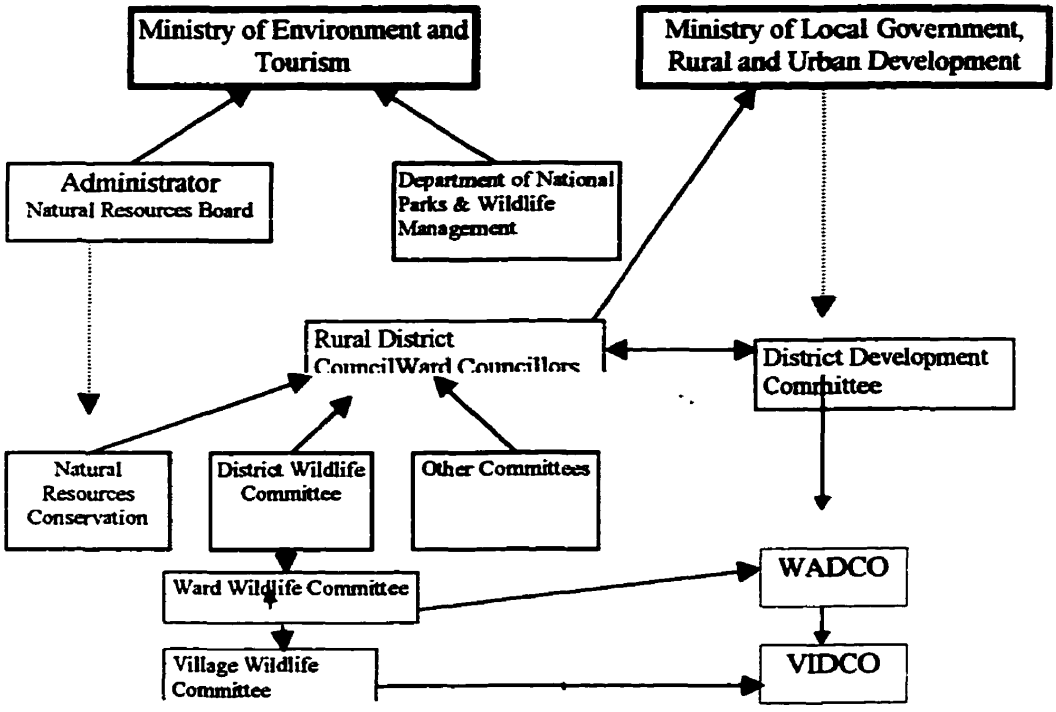



**Figure 4.2: Current Institutional Structures Developing in CAMPFIRE**

resources in their area, it is the council's prerogative to decide on the conservation and use of the resource and equitable distribution of the benefits. Local communities on the contrary argue that since they could not keep cattle due to tsetse-fly infestations, wildlife constituted their major asset. Furthermore, their land is marginal for any meaningful agricultural production and therefore they suffer most from wildlife depredation.

It is therefore logical that the benefits from wildlife should rightfully accrue to the people who pay to live with the wildlife. The mission of CAMPFIRE coincides with the latter view as it recognises that the programme would only succeed if resident communities became involved in the sustainable management and utilisation of the resources. Most RDCs however, continue to use wildlife revenue as an income base for supporting development projects in the entire district without taking into consideration the fact that some communities pay higher costs than others.

The problem was partly resolved by the putting a condition in granting appropriate authority status to the RDC. Each RDC was required to manage wildlife through the DWC and ensure that the community received maximum benefits from the exploitation of wildlife. In 1989, the Dande community in Guruve received 62% of the revenue from wildlife, with the remaining 38% accruing to the district council. Contrasting this situation with Nyaminyami, presents an interesting contrast in the management of CAMPFIRE in different districts. The Nyaminyami district formed its own wildlife Trust Fund in 1987 with the intention of taking over all wildlife management functions. The council developed institutional capacity and management plans to ensure wildlife benefits would accrue to the participating wards. Based on these proposals, the district council was granted appropriate authority status in 1989. Conflicts on benefit distribution were limited in Nyaminyami due to the more even distribution of wildlife in the district.

## 4.5 Project Design and Development

The CAMPFIRE project was designed by the DNPWLM based on principles identified by an FAO land use study. The target communities were not involved in the project planning which caused some problems in getting them to participate in the project at the initial stages. However, the programme was flexible enough to allow for modification by communities without compromising its viability. External funding from the African Development Bank was directed towards infrastructure development as well as purchase of equipment for project development including electric fencing, watering points for game, staff housing, and offices, vehicles and weapons. The government contributed salaries and wages, while the local communities were to contribute labour, and local building materials and project management. Additional funding has been provided by the United States of America International Development Assistance (USAID) and the Netherlands government. Funding has been channelled through the CAMPFIRE Association, Zimbabwe Trust, Africa Resources Trust, CASS and the Department of National Parks and Wildlife Management.

An administrative structure was developed for project implementation. Different government departments were given specific responsibilities under CAMPFIRE. Agritex was responsible for allocating and demarcating land for settlement, grazing and wildlife, in collaboration with DNPWLM and Rural District Councils. The Tsetse Control Department was responsible for tsetse control in the project area. A natural resources management unit project team was created within the DNPWLM to provide technical

expertise in wildlife management, improvement and marketing systems. The project team was to later develop into a management team to be trained to take over both the administrative and technical aspects of the project after five years.

### 4.5.1 Sources of Revenue for CAMPFIRE

Safari hunting and tourism constitute the revenue base for the project as it provided the greatest earning capacity with the least impact on the environment. The potential for viewing tourism is low, due to the remoteness of the area from major tourist centres accompanied in most instances by poor infrastructure. Table 4.1 shows the sources of income for the CAMPFIRE districts. The DWC is designated to run safari operations on behalf of member wards, employing professional hunters and a project manager. Revenue accrued is disbursed to the communities, less administrative costs. This arrangement also

**Table 4.1: Sources of Income for CAMPFIRE Districts 1989-1996 (in Zimbabwean $)**

| Year | Sport Hunting | Tourism | Hides and Ivory | *Other | Total | % annual change |
|---|---|---|---|---|---|---|
| **1989** | 694 773 | 60 | 11 256 | 37 610 | 743 699 | |
| **1990** | 1 310 187 | 7 082 | 105 917 | 141639 | 1 564 825 | 110 |
| **1991** | 2 393 713 | 59 657 | 78 242 | 379 243 | 2 910 855 | 86 |
| **1992** | 5 743 999 | 96 878 | 48 199 | 174 913 | 6 063 989 | 108 |
| **1993** | 9 101 816 | 137 730 | 97 858 | 350 804 | 9 688 208 | 60 |
| **1994** | 12 757 694 | 328 360 | 22747 | 380 811 | 13489 612 | 39 |
| **1995** | 13 080 912 | 478 653 | 101 939 | 420 528 | 14082 032 | 4 |
| **1996** | 16 700 133 | 234 381 | 401 479 | 366 842 | 17702 835 | 26 |
| **Total 1989-1995** | **61 783 227** | **1 342 801** | **867 637** | **2 252 390** | **66246 055** | |

(Source: Bond 1993)

* Other: refers to other income from sale of live animals, collection of ostrich and crocodile eggs, etc. Exchange rate: 1989-1995 = Z$2.16-8.72 = US$1

helps in the provision of training to community members in managerial and entrepreneurial skills. Distribution of revenue to wards is a very important function of the DWC. In principle, each participating ward receives payment for animals shot in its area. The amount paid to each ward is determined by hunting return forms filled by the professional hunters. In addition, a representative of the ward accompanies the professional hunters in the ward area.

It has already been mentioned that CAMPFIRE revenue comes mainly from safari hunting and eco-tourism and other activities constitute a small percentage of the total revenue. Across the CAMPFIRE districts, revenue has been increasing over the years, as RDCs became more experienced in marketing and hunts and resource management. This does not suggest that the same situation exist in every district. It should be noted here that while CAMPFIRE was originally based on wildlife, as more RDCs with limited wildlife resources join CAMPFIRE there has been diversification into other natural resources like black granite mining, forestry etc.

### 4.5.2 Organization of Safari Hunting Operations in Dande

Since safari hunting involves marketing of hunts mainly overseas, it is not easy for each RDC to carry out marketing for every hunt in its areas. The system devised was to grant hunting concessions to safari operators for an agreed fee. The Safari operator, is given the responsibility for selling the hunts as set out in the quotas. For the purposes of organising hunting concessions, Dande is divided into three concession areas, namely: Guruve North,

Guruve South, and Guruve East. Guruve South and East is combined into one concession area due to limited wildlife populations. Each concession varies in size and quota, depending on the wildlife endowment. There is more wildlife in Guruve North since it includes Dande Safari Area. Guruve South has less wildlife and Guruve East has very little wildlife (only elephants). Guruve Rural District Council puts a tender to lease a concession area up to five years. Any lease period of above five years requires approval by the Minister but this is unusual. The lease is subject to extension by the RDC. Prospective clients put bids for the tenders and the RDC makes the selection based on agreed criteria. Selection criteria include: financial viability, capital investment, guaranteed payment, % of turnover to be paid to RDC, method of payment, experience, participation of indigenous people, track record and other incentives to council such as employment opportunities, and tourism development. Once the selection is completed, a written agreement is drawn up containing the usual contractual provisions. The RDC provides a scout to monitor the operations of the safari operator. In Guruve the current safari operators are Ingwa Safaris in Guruve South and East and Swainsons Safaris in Guruve North.

The safari operators submit specified return forms, showing the ward where the animal is shot, the village, grid reference, date shot, species and sex of animal shot, size of trophy. This information will assist the RDC in monitoring offtake, setting future quotas and to determine which ward will receive the benefit. Quotas still requires the approval of the DNPWLM, a requirement which many RDCs and communities complained about. The

reason for this is that government still remains the owner of wildlife and has the responsibility to ensure that this resource is available to all present and future generations. It may therefore be necessary for the DNPWLM to continue playing such a monitoring role.

### 4.5.3 CAMPFIRE Revenue Allocation and Distribution

Because of the uneven distribution of wildlife nationally as well as at local level, the DNPWLM require that benefits from wildlife utilization be returned to "producer communities". The producer community has been on a ward basis to ensure that levels of benefits reflect production levels. The DNPWLM also issued some guidelines on the distribution of revenue between RDCs and communities. According to these guidelines, district council levy was not to exceed 10-15%. A maximum of 35% was to be retained for resource management and a minimum of 50% was to be distributed to the ward according to each ward's contribution towards the wildlife revenue. Pangeti (1990:5) however argues that the use and management of wildlife and proceeds therefrom, legally belongs to the RDC although the expectation is that the appropriate authority will ultimately be devolved to the wards and villages. Table 4.2 shows distribution of CAMPFIRE revenue in Guruve District.

**Table 4.2: Financial Statement of Wildlife Utilisation in Guruve 1989**

| | |
|---|---|
| Purchase of safari equipment and vehicles | $ 214 732. 00 |
| Reserve Capital Fund | 33 209. 00 |
| District Management Fund | 11 291. 00 |
| District Council Levy | 19 925. 00 |
| Dividends to Wards | 61 340. 00 |
| **Total** | **$440 497. 00** |

(Source: Zisani 1994) Exchange rate: Z$ 2.126=US$1

Total CAMPFIRE revenue for distribution for Guruve for 1989 was Z $440 497. Three of the 7 wards received substantial income from sport hunting. In Kanyurira ward the

**Picture 4.1: Revenue Distribution Ceremony in Kanyurira Ward in Guruve District**

majority of the Z$47 000 was earmarked for community projects, such as a clinic, but each household was also expected to receive Z$200 in cash. This income level can be compared to the total projected revenue from cotton of Z$500 in the same year. In the other wards, all revenue received was used for community projects.

## 4.6 Benefits from CAMPFIRE

Benefits from CAMPFIRE include; community projects, household dividends meat, capacity building, empowerment, and employment. WWF has done some work on compiling incomes from CAMPFIRE for most of the CAMPFIRE districts. 92% of CAMPFIRE revenue is from sport hunting and 60% of that revenue is from Elephant hunting.

### 4.6.1 Household Dividends

Household benefits are a recent feature of CAMPFIRE. These were introduced by communities as they got more involved in decision making regarding the distribution of wildlife benefits. The number of wards receiving wildlife dividends in all CAMPFIRE Wards increased from 15 in 1989 to 92 in 1993. The total number of households benefiting from CAMPFIRE revenues have increased from 7,800 to 57 800 over the same period. When CAMPFIRE started in 1989 the average dividend per household was approximately $48 over 15 wards in two districts. As the number of participating districts increased, the national average fell to $24 in 1991 (Bond 1993). With improvement of marketing strategies the average household income increased to $58 in 1993. In real terms, the average household benefit has fallen from US $ 23 to US$ 9 in 1996. However, the argument is that, the level of household dividend vary from district to district and from ward to ward. In Kanyurira Ward, household dividend for 1996 was $ 1000 per household per annum yet in other Wards in the same district the household dividend can be as low as $30. In Guruve District, the income from wildlife constitutes an average of approximately

2% of the total household income (Bond 1993). Table 4.3 below shows household dividends from CAMPFIRE for 1989-1996.

**Table 4.3: Household Dividends in Campfire Wards: 1989 -1996**

| Year | Number of Wards | Average Ward Dividend Z$ | Households in Ward | Average Household Dividend Z$11 | Average Household Dividend US$ |
|---|---|---|---|---|---|
| **1989** | 15 | 25,30 | 7 861 | 48,00 | 23,00 |
| **1990** | 30 | 20,21 | 22 084 | 27,00 | 11,00 |
| **1991** | 56 | 22,69 | 52,465 | 24,00 | 6,00 |
| **1992** | 72 | 46,14 | 70 311 | 47,00 | 9,00 |
| **1993** | 92 | 57,81 | 90 475 | 58,00 | 9,00 |
| **1994** | 102 | 68,86 | 92 912 | 76 | 9,00 |
| **1995** | 115 | 71,85 | 101 995 | 81 | 9,00 |
| **1996** | 103 | 79,78 | 89 475 | 92 | 9,00 |

(Source: WWF Programme Office in Harare)

### 4.6.2 Community Projects

From the onset of CAMPFIRE, revenue was used to fund community projects developed by the RDC. Initially the communities were not consulted on the choice or location of such project. This led to lack of support for community projects. An example is when a clinic is constructed using CAMPFIRE revenue but is located far away from the communities that have to bear the cost of living with wildlife. This created an outcry and led to the revision of revenue distribution strategy. The money received from wildlife utilisation is now allocated directly to Rural District Councils for distribution according to guidelines developed by the Department of National Parks and Wildlife Management. As community members become involved in decisions on the type and location of community projects through the wildlife committees, there has been increased acceptance of these projects by communities. In Guruve and increasingly in other CAMPFIRE districts the use of revenue is decided by the producer communities. This is the reason that in some wards more money is allocated as household dividends. However, some communities still decide to use their revenue for community projects. Table 4.4 shows some community projects in Guruve funded from CAMPFIRE revenue.

[11] The exchange rate for the Zimbabwe dollar against the US dollar has been fluctuating greatly. In 1989 the rate was Z$4 to US $1. In 1996 the rate was Z$10 to US$1and the current rate is Z$38 to US$1.

**Table 4.4: Community Projects from CAMPFIRE Revenue (1989-1993)**

| Ward | Type Of Project | Value Z$ | Located in Producer Ward |
|---|---|---|---|
| **Matsivo B** | Classroom Block | 29 938 | No |
| **Chitsungo** | Classroom Block | | |
| | Bicycles | 1 500 | Yes |
| **Kanyurira** | Classroom Block Dividends | 33 403 | Yes |
| | | 17 200 | Yes |
| **Neshangwe** | Classroom Block | 29 234 | Yes |
| | Teachers' House | 8 731 | Yes |
| | Clinic Repairs | 6 918 | Yes |
| | Skinning Sheds | 3 000 | Yes |
| **Chisunga** | 2 Teachers' Houses | 22 300 | Yes |
| | 2 Teachers' Houses | 16 870 | Yes |
| | Fence | 4 500 | Yes |
| | Vehicles | 364 732 | No |
| | Beer hall | 110 000 | No |
| **Chapoto** | Teachers' House | 11 168 | Yes |
| **Chiriwo** | Bicycles | 700 | Yes |
| | Salaries (Game scouts) | 15 000 | Yes |

Source: Zisani 1994 Exchange rate 1989-1993: Z$ 2.126-6.529 = US$1

**Box 4.2: MASOKA Villagers Benefit From Programme**
Villagers in Masoka, Guruve, have this year benefited financially from income generating projects in their area through CAMPFIRE.

This year the Masoka community generated $644 981 from CAMPFIRE projects and of this amount, $140 000 was allocated to 140 households, with each household getting $1 000. Besides this some money was allocated for rural development in the area: A school $80 000; Football Club $11 000; Clinic $200 000, Women's Club $5 000; Anti-poaching Unit $30 000; Fence maintenance $35 000; Propose Drought Relief Fund $25 000 and some amount for expenses. The decision by the Masoka community to work out such a development initiative is a reflection of development democracy within CAMPFIRE. This demonstrates the right of the people to allocate scarce resources to their felt and pressing needs

Speaking at a cash dividend distribution exercise in Masoka, CAMPFIRE Director, Taperandava Maveneke said the cash dividend was an example of peoples' sensitivity to the need to provide cash for household needs at the local level. He congratulated the Masoka community for not forgetting conservation needs in distributing income. The allocation for fence maintenance shows that conservation is still being considered important.....

Council has attempted to plough back the revenue into the producer communities. Most projects are located in the game prime areas with a few exceptions. Wards are also involved in deciding how to utilise funds obtained in their area as evidenced by dividends in Kanyurira Ward and the Sheds for Neshangwe Ward. One problem identified during interviews of community members in Dande is that, there is seasonal movement of game throughout the district. During the hunting season (November to March) wild animals move north where there is thicker forest cover. Here animals are shot by safari hunters and according to CAMPFIRE guidelines the proceeds of that hunt is given to the Ward within which an animal is shot. During the non-hunting season when the northern parts are dry, animals move south in search of food and water. In the process, they destroy livestock and crops. Since this movement takes place during the non-hunting season the people in these wards do not receive any money from CAMPFIRE. This is one problem with the allocation of common property resources which are of a fugitive nature. A solution to this problem may be to assess any crop damage in the south of the district and ensure that these people receive adequate compensation from CAMPFIRE revenues.

It is quite clear that living with wildlife has costs to the local communities. Some of the costs have already been mentioned before. Zisani (1994) carried out a study on the damages incurred through wildlife activities compared to the compensation received. Table 4.6 shows some of these figures.

### 4.6.3 Meat

Meat from the animals shot is distributed among the villagers nearest to where the animal is shot. The management framework set by each ward can also provide for cropping or individual hunts through permits. These permits would be issued by the committee based on quotas set by the DNPWLM in consultation with the DWC. The WWCs are also responsible for deciding who should carry out hunts for problem animal control (PAC) and how individuals should be compensated for crop damage or livestock losses caused by wildlife. They also organise anti-poaching activities with the assistance of locally-trained rangers.

The only CAMPFIRE district where meat cropping has been meaningful is Nyaminyami. In 1989, based on population estimates, and in consultation with the DNPWLM, cropping quotas were allocated for the off-take of 1500 impala, (10%) 20 buffalo,(4%) and 20 elephant (1%) for meat purposes. The quota was also utilised to cover PAC activities and poaching. The elephant quota was not utilised due to the listing of elephant in Appendix 1 under the CITES Convention and due to the fact that 18 elephants had been shot on PAC. The cropping was carried out by safari operators.

Meat was carried from the butcheries to distribution points where local councillors sold the meat at very low rates of $1 per kg. fresh meat and $4 per kg for dried meat. The distribution of meat as shown in Table 4.4 shows that most meat was bought by a small percentage of the population comprising of employed individuals in Chalala and Bumi. There is no data on meat cropping in Guruve.

**Table 4.5: Meat distribution in relation to area and population size in Omay Communal Land in 1989**

| Ward | October Sales (kg) | (%) | Population (kg) | (%) | (%) |
|---|---|---|---|---|---|
| **Mola** | 1,927 | 20 | 1,973 | 14 | 30 |
| **Negande** | 1,480 | 16 | 1,451 | 10 | 20 |
| **Nebiri** | 1,079 | 11 | 2,468 | 17 | 20 |
| **Msampakaruma** | 1,392 | 15 | 3,710 | 25 | 20 |
| **Bumi/Chalala** | 2,143 | 15 | 4,716 | 33 | 20 |
| **Others** | 1,460 | 15 | 163 | 1 | 10 |

(Source: Murombedzi 1992)

## 4.7 Conservation under CAMPFIRE

The CAMPFIRE project in Zimbabwe was initiated in 1988 at a time when wildlife populations were declining throughout the country's communal lands. From aerial surveys carried out in 1992 and 1993 there are indications that several species are now increasing. The apparent increase in species demonstrates that economic and other benefits and proprietorship, not ecological criteria are the key initiators of ecological sustainability (Martin 1991). There are numerous examples in Zimbabwe in which species were protected legally, but their population levels have not increased. Re-arranging economic incentives and redefining property rights can be key to restoring efficiency and sustainable management of communally-owned resources.

Although the success of CAMPFIRE depends largely on the effectiveness of economic and other benefits in reducing the human-wildlife conflicts, its final goal is to encourage communities to conserve wildlife resources. Income generation from renewable natural resources such as wildlife can cause degradation of the resource if no measures are put

into place to ensure sustainable use. The CAMPFIRE project did not lose sight of this important aspect of the programme that determines its long-term sustainability. The Department of National Parks and Wildlife Management retains the conservation role through controlling off-take rates by setting hunting quotas. The purpose of quota setting has been to assist the communities to sustainably manage their wildlife resources. This process involves districts that supported safari hunting to count their wildlife and set hunting quotas. To aid this process, the DNPWLM devised a manual in order to assist RDCs in setting quotas. Quota forms were completed by district councils and submitted to DNPWLM for approval.

At the beginning of the Programme, trial quota setting was conducted in selected districts and the results were encouraging. Estimates of elephant numbers and distribution of other species came quite close to figures obtained from the aerial surveys conducted by DNPWLM. Although quota-setting has proved to be an effective tool for wildlife management at community level, there were various constraints. These include the lack of knowledge on quota-setting, insufficient training resources to train communities in wildlife counting and quota-setting, and absence of community-based techniques for quota setting. The trial quota-setting exercise, showed that most districts made an effort to set quotas and most communities generally want to be involved in wildlife management, but lack the appropriate skills and technical support necessary to develop those skills.

The Parks and Wildlife Act, 1975, gives the DNPWLM the ultimate responsibility for

wildlife conservation in Zimbabwe. The department is therefore obliged to manage and monitor the utilisation of wildlife by communities until such time full devolution can be implemented. DNPWLM therefore maintains a full record of trophy off-take to aid quota management and ensure sound management of wildlife resources. The hunter is required to fill in a hunt return stating species, sex, location of each animal shot, size of trophy, and any comments. A summary form for trophy off-take is submitted to DNPWLM by the RDCs. There are limits as to the recommended trophy sizes to avoid killing of young animals. If the average trophy size in an area falls below the recommended size, then the quotas are reduced accordingly. However, most district councils do not fill in the hunt

**Box 4.3: Quota-Setting Process in Guruve**

This quota was discussed by the DNPWLM, Guruve RDC and two safari operators. The Guruve North quota has been adjusted slightly with increases in buffalo, kudu, waterbuck, and zebra and decreases in lion, hyena, hippo and crocodile. The lion quota in Guruve South was also cut, with small increases in hyena,hippo, sable and waterbuck

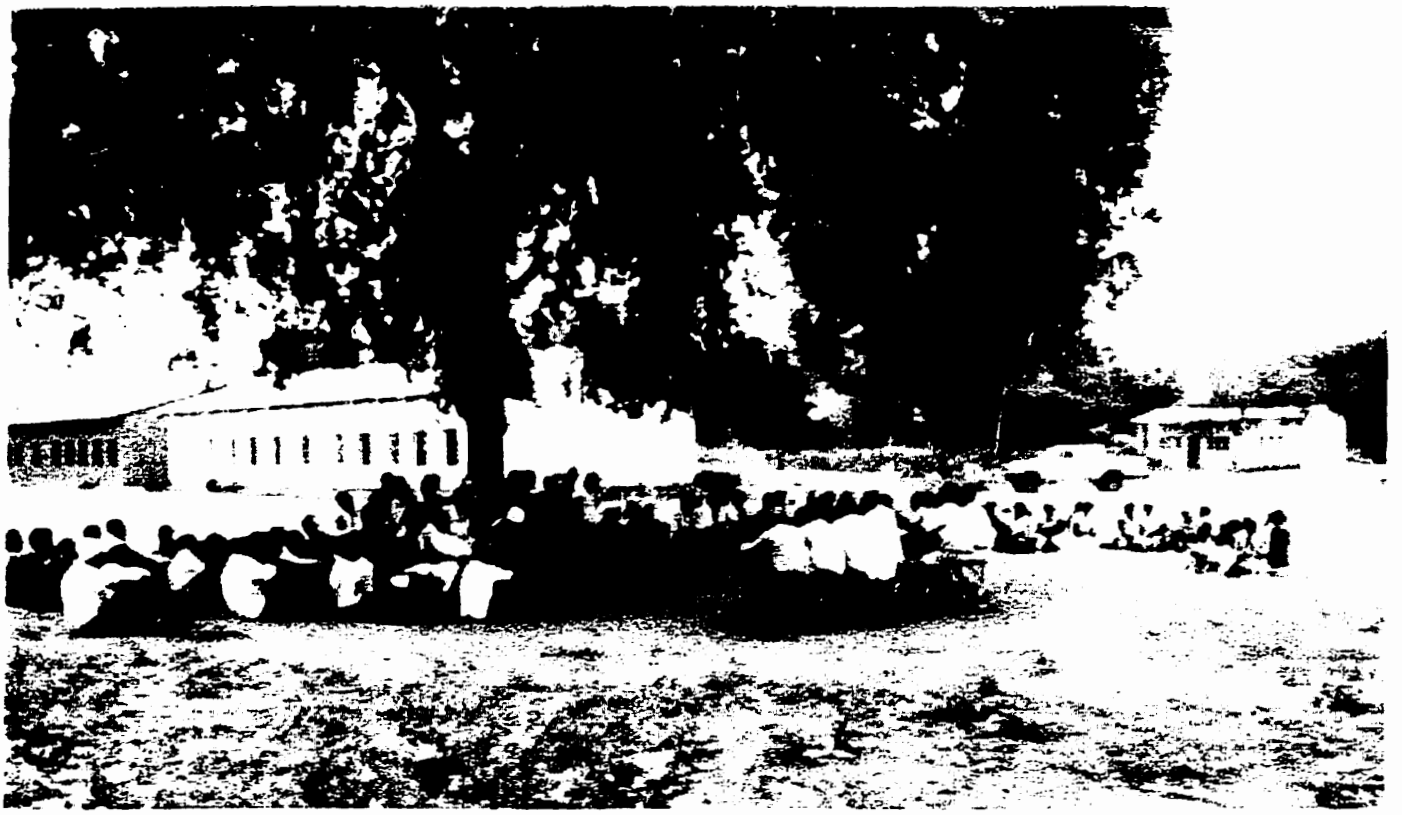
Changes have been made on elephant quotas with those in Guruve north and south being interchangeable, but with no more than seven to be shot in Guruve South. Elephant cow quota has increased slightly, with an allowance made of three females to be individually shot on PAC and 32 to be culled as family units. A PAC quota of 2 females in provided in Guruve East as before.

return forms and those who have done so, the forms have been poorly completed. Another conservation measure has been the prohibition of killing of cow elephants. Since 1995, the killing of cow elephants in only allowed for the purposes of problem animal control. The hunting quotas were set relatively low to ensure high trophy quality. Quotas were set well below maximum sustainable yield from existing populations so as to leave room for an additional yield of non-trophy animals for meat and hides. It was estimated that the meat supplied would largely meet the local needs, thus reducing illegal poaching. However, due to low animal populations cropping for meat has proved to be uneconomic in Guruve and has thus been limited to problem animals control operations.

### 4.8 Local Participation in CAMPFIRE Activities

CAMPFIRE was designed to decentralise wildlife management to local communities as an incentive to encourage conservation of wildlife. However, the devolution of appropriate authority for wildlife has been given to the Rural District Councils who are supposed to manage wildlife on behalf of the communities. This arrangement has run into the problem of most representative democracies where those in authority, do not always have the interests of their people at heart. The lack of devolution to the lower tiers of the communities has created many problems in revenue utilisation and distribution. Debate is continuing as to the best solution between further devolution to ward and village levels or letting RDCs as the development agencies of their district to remain in control. (Martin 1991) has made an analysis of decision-making processes within the communities, with regard to the best land-use option between wildlife and cattle.

Local participation in CAMPFIRE has been developed through the formation of District, Ward and Village Wildlife Committees. DWCs would also allow for joint management of wildlife resources between wards to create viable wildlife units.



**Picture 4.2: Villagers in Masoka hold a meeting to discuss CAMPFIRE**

**Box 4.4: Villagers in Decision-making**

CAMPFIRE in Masoka village, Guruve, in now a chorus sung by everyone. CAMPFIRE funded projects are increasing each year with higher returns from wildlife.

In July 1993 a ballot exercise in the village was done to determine whose interests are met by the projects that were developed in the village from CAMPFIRE revenues.

Due to the high rate of illiteracy in the village, particularly among women, local research assistants designed ballot boxes with pictures on each project to make the exercise easier for all voters. The voting was done at a village meeting attended by 80% of the local residents. Blue and pink manila cards were used for casting the votes by women and men respectively. Eleven voting cards were given to each individual who could place any number of cards in any box or all in one depending on their projects of interest.

The list of projects included a clinic, transport, second store, village school, bottle store, tractor, footbridge, boreholes, women's clubs, a second grinding mill, and toilets.

Generally, decisions on projects are made at village general meetings

By Nontokozo Nabane, CASS. U.Z.

## 4.9 Sustainability of CAMPFIRE

Lee Kai (1993) argues that "sustainability is a goal like liberty or equality" not a fixed end-point to be reached, but direction that guides constructive change". The assumption under which CAMPFIRE operates is that full proprietorship yields reinvestment. On the other hand, state ownership yields lower economic value and zero benefit. CAMPFIRE seeks to achieve maximum sustainable yield by using financial and proprietary incentives. According to Salwasser (1993): "—

the concept of sustainable yield is moving beyond a static, single-scale, sectoral resource focus to address the broader dynamic, multi-scale, integrated dimensions of resources in the context of ecosystems.—the concept is expanding to embrace the complex relationship between human organisms and social units and the ecosystems in which they occur- that is the concept of sustainable development."

Martin (1994) points out that it is difficult to establish with certainty whether any use of wild species is sustainable or not. He further argues that any use of wildlife will cause a change in the ecosystem. Sustainability is therefore determined by the ecosystem productivity, biodiversity, safe minimum standards and other measures of ecosystem health that have been documented. Therefore, what becomes important is not whether or not a system is disturbed but its resilience i.e. the absence of extinction in the case of species. Sustainability of any renewable natural resource can be achieved if there is reinvestment in the resource and/or harvest is at a sustainable level. Reinvestment in wildlife management can be done through expanding the habitat or turning agricultural land into wildlife areas (Martin 1991).

Opponents of utilization argue that the decline in wildlife populations from present levels is evidence that use is unsustainable. The option of zero use is not realistic in Africa, as it is likely to cause extinction through illegal use. This is because the majority of the population relies on natural resources for their livelihoods. Caughley (1977) pointed out

that any species population that is stable in numbers must be reduced below carrying capacity if it is to produce sustainable harvest. Martin (1994) contents that sustainable use of species does not only happen when a population reaches its maximum size, but can occur even in small populations as well as harvesting does not lead to decrease but increase in the population. He further argues that harvesting from a declining population can create positive feedback but without monitoring such harvest can lead to extinction. This has happened to the North American bison. Ludwig et al (1993) therefore conclude that, the only way to learn about sustainability is to exploit the resource through trial and error.

The conclusion one can draw from the above arguments is that conservationists and ecologists operate under great uncertainty. Any management programme for wildlife should therefore be organised as a self- testing and self-evaluating system operating on feedback based on well- defined objectives. This is what Martin (1994) refers to as adaptive management. CAMPFIRE is therefore a largely adaptive experiment, with 500 commercial farmers and 36 RDCs engaged in transformation of land use programmes suited to its geographical, social structures and marketing opportunities. For CAMPFIRE to be considered a sustainable rural development model, a linkage between benefits to communities and individual households on one hand, and increased conservation effort on the other, had to exist to a certain extent.

The question of the future sustainability of CAMPFIRE with particular reference to the

issue of donor financing, institutional support and the nature of revenue base needed examination. CAMPFIRE has been supported through donor funds to the tune of US $200 million. The question then becomes whether the programme can be sustained without donor funding. The CAMPFIRE Association felt that the programme can be sustainable from a donor funding perspective, due to the fact that most of the donor funds are being used for administration purposes, i.e. training, institutional strengthening, and research. These activities are meant to enable the RDCs and the communities to be able to run the project on their own, hopefully by the end of donor funding. He pointed out that the CCG has adopted a phaseout approach where by the end of donor funding only critical elements of support will remain. For example he felt that the role of the CAMPFIRE Association will be reduced to just lobbying and communication, especially at international level. WWF 's role is to train people in quota setting and carrying out aerial surveys, after ten years the RDCs should be able to continue on their own.

Several other agencies have key roles in CAMPFIRE. The Zimbabwe Trust has the major role for institutional capacity building and administrative functions. It is also clear that at the end of the Trust should have consolidated the institutional capacity for future management of CAMPFIRE. However, the role of the Department of National Parks and Wildlife Management as the authority over wildlife will continue its role as part of its normal functions. Any additional services by the department to CAMPFIRE will have to be contracted commercially. The Centre for Applied Social Sciences (CASS), as a university research department will also maintain its role without the financial support through CAMPFIRE.

# CHAPTER 5

## THE STUDY METHODOLOGY AND FINDINGS

### 5.1 Study Methods

This study is based upon an evaluation of CAMPFIRE in Zimbabwe, to determine whether economic and other benefits have served as an incentive towards better management of wildlife resources. However, before discussing the research methodologies selected to conduct the study, it is necessary to provide a brief background on research in the African context and a general discussion on research methodologies.

Survey research in Africa has a mixed and unique history (O'Barr *et al*, 1973). While sociologists, psychologists and to a lesser degree, political scientists pioneered the use of survey in the West, it was primarily anthropologists who introduced systematic survey in Africa. Surveys conducted in Africa during the early decades of this century were faced with numerous limitations due to great distances, poor communication networks, limited information sources and a general reluctance amongst the populace to co-operate. Since the 1950s, the amount of research in Africa has become voluminous. More strikingly has been the attention and importance that researchers have given to survey research and the continuing debate over qualitative versus quantitative research techniques.

The issue of social research, became the subject of major concern and debate to those

engaged in the study of Africa in the late 1960's and early 1970's. Critics suggested that Western researchers were unconcerned with African problems but more interested in filling in gaps in Western scholarship. It was also contended that Western social science was not well equipped to comprehend the reality of Africa. While many are quick to refute the above-stated criticisms, there is a better appreciation of Africa 's uniqueness. The criticisms have helped to influence how social science theories derived from the study of Western societies apply across cultures. Furthermore, attention has been focused on the resolve of ensuring that research techniques must be appropriate to the local scene. Thus, it is imperative that researchers make themselves aware of the problems that may arise from applying western survey techniques in the south. These techniques should be adapted to southern situations in order to minimise bias and distortion (O'Barr et al, 1973). The author has attempted to recognise the above noted considerations throughout this research. In particular, attention has been given to research measurement and administration.

Halcolm(1982) provides a good starting point on evaluation methodology:

> *Issues of evaluation methodology are issues of strategy, not of morals. Purity of method is no virtue. That strategy is best which matches research methods to the evaluation questions being asked. The challenge is to decide which methods are most appropriate in a given situation. The science of making methods decisions is no less highly developed than the technology for making other simple decisions, for example, how to choose a spouse, career, city of residence, or which toothpaste to use. Blessed are the poor of choices, for they will have no trouble making up their minds.*

According to Patton (1990), evaluation research has gone beyond the administration of standardised test involving experimental groups, to the utilisation of a variety of methods. These methods include; analysis of quantitative data, questionnaire results, secondary data analysis, cost-benefit and cost-effective analysis, standardised tests, experimental designs, unobtrusive measures, participant observation, and in-depth interviewing. The most important issues in choosing an evaluation method(s) includes considerations of relevance, rigor, understanding, and ability to produce useful results that are valid, reliable, and believable. There exist two basic research methodological paradigms; the hypothetico-deductive paradigm and the holistic-inductive, anthropological paradigm (Patton 1990). The former approach lays emphasis on quantitative and experimental design, while the latter approach focuses on understanding social phenomena.

Patton (1990) argues that the debate is no longer on which of the two methods is more rigorous, but which is more appropriate to a given problem. The use of multiple methods and triangulation of observations contributes to methodological rigor. A multiple strategy to field research has been advocated by a number of researchers (Burgess, 1993) because too often a researcher finds herself or himself confined by strict or rigid adherence to any method, technique or doctrine position. Generally, no one method is considered superior to any of the others, since each has its own strengths and weaknesses. Such a perspective has enabled the author to take this situation into account and to approach substantive and theoretical problems with several methods that were appropriate to the problem. Some limiting realities to achieving this rigor are resource limitations, political considerations

and narrowness of disciplinary training available to evaluators.

In this study, the central research questions do not lend themselves to extensive quantitative testing and therefore, qualitative methods dominate data analysis. Qualitative research provides a means for the researcher to try to achieve a comprehensive understanding of the subject matter. This understanding allows the researcher to observe and document the qualities of human behaviour from a predominantly descriptive nature. The purpose of such research is not to necessarily explain human behaviour in terms of universally valid laws or generalisations but to understand and interpret the meanings and intentions that underlie the human environment. Human players not only reflect societal structures, but create and influence them through their interactions with one another. Researchers in the qualitative paradigm study the ways in which social actors develop, experience and define social reality. Conclusions can thus be drawn to grasp the first-order constructs of human experiences and identify ways in which to influence social structure and organisation. With the major thrust towards the gaining of insight into the subjective and first-order reality of the human environment, examination must be taken of the social experiences of humans in their everyday life and in their own environment. Instead of making external judgements from afar, the researcher must share their environment and define their social reality as it is constructed. To achieve such a close relationship with the environment of study requires a research methodology that enables the researcher to shift away from rigidly-structured quantifiable techniques towards semi-directed, qualitative approaches.

The advantage of using a qualitative methodology based on open-ended questions is that the views of the participants are captured in their own terms. This approach also enables the researcher to understand and capture the points of view of other people without predetermining those points of view through prior selection of questionnaire categories. Patton (1990) however acknowledges that, there can be limitations in what can be learnt from what people say. In most circumstances, direct participation and observation of the program could be the best evaluation method. In fact, Becker and Geer (1970) argue that participant observation is the most comprehensive of all types of research strategies. This is so because it allows the evaluator to understand a program to an extent not entirely possible using only the insights of others obtained through interviews. However, this method is highly labour intensive and costly in both time and money and for this reason, it was not used in this particular study.

In this study, the choice of research methodologies has been further restricted due to the limited time factor and the nature of the community under study. Ideally, the most effective methods would have been interviewing randomly selected community members stratified in terms of sex, and social status. Although this has not been possible due to time and resource constraints, this method has been recommended for future research on this subject. The use of mailed questionnaire was avoided, as its potential success would have been limited given the low literacy level of community members. Further, the interpretation of questions would vary and the anticipated response rate would be low. Use of the group interview technique was also considered cost-effective. However, this

approach is limited because it is difficult to obtain personal information from a group of people. This method was therefore not used for this study since there was need for information of a personal nature.

Where possible and appropriate, quantitative methods have also been employed. However, the sampling frame and validity of results are limited and may suggest some bias that has been identified and qualified.

Quantitative data included incomes from CAMPFIRE, agriculture and other sources, while qualitative data included peoples' perceptions as to the benefits from CAMPFIRE, perceived linkages between income from CAMPFIRE and increased conservation effort. Both quantitative and qualitative methods were therefore used to obtain data for this study. Since most of the evaluation was based on personal judgement, open-ended questions were used more often than questionnaires.

Data and information that were gathered throughout the course of the study was based upon three sources, namely:

a) primary sources which included questionnaire data, direct observations, censuses, government records, etc.;

b) secondary sources such as topic-related literature; and,

c) tertiary sources which provided syntheses of previous, related research.

A review of literature (*secondary sources*) was done prior to questionnaire development and data collection, and continued throughout the report writing. The literature review was undertaken to provide background information on the research topic, and examine related theories and hypotheses. It also identified potential knowledge gaps that require further study and analysis, and provide a 'check' against the validity and variability of primary sources of data. An assessment was also carried out on how the theories and approaches lent themselves to the Central-Southern African context. Literature was gathered from the libraries from within the region and from several educational institutions outside of the region (in Canada). Unpublished documents were also assembled from governmental and organisational institutions (e.g., World Bank, IUCN) including both solicited and unsolicited materials. Such materials included government of Zimbabwe reports, records of CAMPFIRE meetings and CAMPFIRE newsletters. Limited amounts of data were also gathered from on-line data bases found at the various educational institutions and on the *Internet* system.

Following literature studies and preparation, data was gathered through field research, consultation, questionnaire administration and the use of archival and library materials. Limited primary data was obtained from interviewing a selected number of key informants from the CAMPFIRE Collaborative Group and from Guruve district. A list of interview

questions used for the survey are at Appendix A. The questionnaire was tested with several colleagues and government officials to ensure that the questions were clear, understandable and resulted in answers that were useful to the research, prior its administration to key participants of the study, Based on comments received, the questionnaire was subsequently revised.

Many authors have suggested that interviewing is the most important data collection instrument in the social sciences (Schurink and Schurink, 1988). Some have even suggested that the use of interviews is so extensive by social scientists that they consider modern sociology as the "science of the interview" (Burgess, 1993).

A variety of interview methods has evolved through the years, from the structured to the unstructured depending upon circumstance and objectives. As interviews are a key method of investigation, there is a very large literature available which describes the techniques, pros and cons in much detail. This study is primarily concerned with open-ended interviews which cannot be considered a true form of qualitative interviewing as only the answers are unstructured. An open-ended interview usually consists of a set of previously formulated open questions that are administered to the subject group in a similar fashion and sequence.

### 5.1.1 Survey Population

As mentioned earlier, Guruve District has a population of about 135 637 (Zisani 1994).

Only 11 out of the 28 wards in Guruve are involved in CAMPFIRE since the other wards have no viable wildlife populations. Only those wards under CAMPFIRE were considered in determining the survey population. The total population for the 11 wards was still too large for any meaningful survey, which made sampling necessary. Sampling involves a compromise between precision and economy of effort (Hammond and McCullagh 1974). Due to the limitations of this particular study described above, a small sample was used. The eleven wards have varied circumstances in terms of population, wildlife endowments, and levels of income. It was necessary in choosing the sample to ensure that the survey population was representative of the different conditions in the 8 wards. For future work stratified random sampling technique is recommended to ensure that the survey population is representative of all the CAMPFIRE Wards. One sampling criterion may be to choose one ward that is very successful (in terms of level of economic benefits), one which enjoys moderate success and another that has limited success. An even more comprehensive sampling technique is to choose one village per each CAMPFIRE ward.

In this study a few key informants from government, members of the CCG and selected villagers in Kanyurira Ward were interviewed. The selection of informants was based on the researcher's knowledge of the people involved in the CAMPFIRE project at the national level. At local community level, the informants were selected based a discussion held with the Chairman of Guruve Rural District Council during the first visit to the area in 1995. The interviews with the informants at local level were to confirm the information

from the literature analysis and that provided by the members of the CCG. On applying the questionnaire to the interviewees, the researcher realised that some of the questions were not appropriate for personal interviews. In order to fill the information gaps from the interviews, literature search was conducted with the guidance of the interviewees particularly representatives of the CCG members. The interview questions and the list of the people interviewed are found in Appendix A.

### 5.1.2 Data Collection

Collection of primary data was conducted in two phases. The first phase took place in July - August 1995 in Guruve District in Zimbabwe. This was a preliminary scoping phase, involving selected interviews with individuals involved in the CAMPFIRE project in Guruve and some representatives of the Guruve District Council (the list of the people interviewed is also contained in Appendix A). The purpose of the interviews was to gather a general understanding of the local people's general understanding and feelings about CAMPFIRE, particularly with respect to the benefits from the project. These interviews gave the researcher an idea of the general perceptions of local government and local communities to the CAMPFIRE programme and an appreciation of the main issues warranting further investigation. During the scoping phase, the researcher also gathered advice on the appropriate district to be selected for the study. Information obtained during this phase was used to design the study and to plan for further data collection that took place between February and August 1997.

Interviews of informants were conducted between March and June 1997. The list of interview questions is in Appendix A. Although the same questions were asked to all interviewees, some could not answer all the questions for two main reasons. Either they did not know the answer or they referred the questions to another organisation that was more competent to answer it. The structure of the analysis is to report on the responses to each question followed by brief comments on the responses where appropriate.

### 5.1.3 Data Analysis and Limitations of the Study

The responses received from the interviewees were grouped for each question and an analysis made of the different responses. These responses are reflected in the final chapter with some independent comments made by the author included where appropriate. Due to the small number of interviewees, analysis of data did not involve the use of complex software packages.

Due to limited resources and time available for completion of the research, it was not possible to carry out a comprehensive survey. The study results are mainly based on people's perceptions, with little quantitative analysis. The author has therefore recommended a more comprehensive survey in the future to verify the conclusions contained in the study. The conclusions should therefore be treated as preliminary. The researcher also found that on applying the questionnaire, the difference in the status of the interviewees made it difficult to ask the same questions to all the interviewees. Different interviewees could answer certain questions, making comparison of answers difficult. In

most cases, most of the data were not available at the time of the interviews and the researcher had to rely on various literature sources to fill in the data gaps from the interviews. One important lesson learnt in this study was that the same type of questions could be inappropriate to different audience as. In future, questions for the officials should be different from questions to be asked from community members. The reason for this conclusion is that different information was being sought from the two groups of interviewees.

## 5.2 Study Findings

The findings contained in this chapter include information obtained during the interviews of informants as well as secondary data obtained from various literature sources. Since the survey was limited in scope, secondary data sources were used extensively to fill in the information gaps. The implementation of CAMPFIRE should be viewed in five stages (Child et al 1997).

- Stage 1, a supportive legislative and political environment is developed
- Stage 2, Councils a re made aware of the potential benefits of using wildlife and , at their request only, programmes are initiated. CAMPFIRE does not impose ideas. It is demand-driven to ensure that assistance is focussed on willing people and real needs
- Stage 3, Commercial opportunities, mainly hunting are identified and promoted

Child (1997) argues that, it is the combination of benefits and empowerment which brings

about change in attitudes towards wildlife.

The study examined the different types of incentives under CAMPFIRE, and how these could link to any change in attitudes towards wildlife. Change in attitude towards wildlife was determined by looking at a number of indicators, which included any increase in conservation effort by the communities. Before looking at benefits under CAMPFIRE, the author found it necessary to examine the sources of household revenue in the study area as a way to put revenue from CAMPFIRE into proper context.

### 5.2.1 Sources of Household Revenue in the Study Area

Between 1989/1990 and 1990/1991, the Department of Agricultural and Extension Services (Agritex) carried out household income surveys in the communal lands in Zimbabwe. According to these surveys, the estimated average value of net farm production, plus cash income from other sources was estimated between Z $994 and Z$ 888 respectively (See Table 5.1). These income levels were used as country averages and compared with income from CAMPFIRE in Guruve district.

**Table 5.1: Average income for households in semi-arid communal lands in Zimbabwe**

| | **1989/1990** | **1990/1991** |
|---|---|---|
| **Sample size** | 330 | 450 |
| **net farm income** | **Z$509** | **Z$530** |
| **non farm income** | **Z$458** | **Z$358** |
| **total household income** | **Z$994** | **Z$888** |

(Source: Agritex 1992) Exchange rate: 1989-1991 **Z$** 1,216-3.572 = US$1

In Dande, the main sources of household revenue are cropping, off-farm employment, livestock sales, wildlife earnings and home industry in that order (Bond 1997). This demonstrates that income from wildlife is therefore not the only source of income for communities in Dande. The value of wildlife revenue to the communities will largely depend on whether they compare it with other incomes sources. In most cases, from the community members interviewed, revenue from wildlife is viewed as free income since people do not invest much in terms of land and labour into wildlife production as the case with agricultural production. Apart from the costs of crop damage by wildlife, most communities view wildlife revenue as a bonus and therefore wildlife is viewed positively.

a) **Cropping**

The main crop grown is cotton, which is relatively easy to grow, has low input costs and is less prone to damage by wildlife. Income from cotton can be substantive, up to Z$20 000 per annum for some households. Maize is also grown but mainly for subsistence although some households grow it as a cash crop. The combination of baboon raids and recurring droughts in the area result in poor yields. For those who grow it as a cash crop the average income per annum per household is Z$2 000. Sorghum is both grown as a subsistence and cash crop. It is also used for beer brewing which is sold to generate income. Although income from cotton appears high, this varies with the seasons. In bad seasons, the income from cotton can be negligible and wildlife revenue is viewed more positively. In a good agriculture year, CAMPFIRE revenues may have less significance. Cotton also requires high input costs which most farmers cannot afford, resulting in low yields.

b) **Off-farm Employment**

Off-farm employment in Guruve is limited. Those who work away from the farm normally work in mines, or in urban areas. The off-farm workers often subsidise their income by working on the land. This income therefore is not widespread and is therefore not regarded as an important source of revenue.

**c) Home Industry**

Home industry in Guruve includes basket making, pottery, crocheting, gardening, beer-brewing, and carving. Of these activities only basket-making and gardening bring some worthwhile income which is used for buying the minor household essentials.

d) **Livestock sales**

The sale of goats is quite prevalent in the area and each goat sells for an average of Z$100. Cattle are rarely sold due to their importance as draught power and their general social value as a measure of wealth. However when cattle are sold, mainly for paying school fees, they fetch between Z$2 000 and Z$3 000.

e) **Wildlife**

Income from wildlife in Chisunga, Neshangwe and Chiriwo Wards in Dande was ranked very low, while in Chitsunga and Kanyurira Wards where incomes are substantive CAMPFIRE is highly regarded. In Dande, the concept of community projects is not well appreciated and such projects are very few. Some projects have not been completed due to lack of seriousness, disunity and inconsistency among the members. In Kanyurira and Chitsunga wards, dividends from CAMPFIRE constitute the major source of income for

most households although sometimes the income can be unpredictable and distribution is sometimes not consistent. Again in Kanyurira Ward, there is greater enthusiasm in conserving wildlife as the people can associate the benefits with the continued existence of wildlife in the area. In this ward, the community is involved in deciding the use of the income from CAMPFIRE. In general terms, the relationship between benefits from CAMPFIRE and increase in conservation effort is complex. Those members of the CCG interviewed argued that, positive attitudes by communities towards wildlife, is a function of perceived rather than actual derived benefits. They also pointed out that, although linkages between CAMPFIRE revenue and existence of wildlife in the area, may not be obvious to many community members, the CAMPFIRE idea is slowly being accepted even in low-income wards.

A representative of the CAMPFIRE Association during personal interviews, argued that CAMPFIRE was never intended to be the major source of revenue for the communities, but as an additional source. If one looks at CAMPFIRE with this perspective, the future of the programme appears promising even in areas with limited wildlife resources. From the experience to date, revenues generated from wildlife in some districts like Guruve have served as an incentive for conservation. It was also noted that the comparison between revenue from agriculture and that from wildlife management is complicated by the fact that agriculture revenue belongs to an individual household, while wildlife revenue belongs to the "producer community". The fact that there is no clear policy on the distribution of revenue from CAMPFIRE complicates the issue further in the sense that

not all Rural District Councils give the same percentage of revenue to the communities. The revenue from CAMPFIRE is used in some cases for community projects like health clinics, and to translate such benefit to individual household utility is not simple.

### 5.2.2 Meat Cropping and Distribution from CAMPFIRE

The people interviewed indicated that there is no consensus among the various players with regard to meat cropping and distribution to communities. The practice therefore differs from district to district. In some districts, communities are encouraged to buy meat at very low prices from mini-butcheries run by Safari Operators. This is meant to demonstrate that meat has some commercial value and to avoid the concept of handouts. Meat cropping although viewed very positively by communities was generally considered as uneconomic in the sense that the cost of cropping exceeded the benefits derived therefrom.

The question that remains unanswered is whether meat should be taken as an incentive to communities, or as a source of revenue to the programme. This becomes a question of social benefits versus economic benefits. Most community members interviewed regarded meat as an important benefit from CAMPFIRE but accused the DNPWLM of reducing meat cropping quotas. However, there is a difference between meat cropping and meat sold by safari operators. In some districts, safari operators are encouraged to run butcheries where they sell meat to community members at very low prices. Meat is distributed free at celebrations such as Independence Day. The question of meat cropping

is very controversial and requires clear policy instructions. Murombedzi (1991b) pointed out that the significance of meat as a benefit depends on the population density of the area. In areas with high population density such as Tsholotsho, meat is insignificant at household level, while in low population density areas such as Kanyurira Ward in Dande, meat is a very significant benefit.

### 5.2.3 Household Dividends from CAMPFIRE

The highest income from CAMPFIRE in Dande comes from sport hunting. In 1994, each family in Kanyurira Ward received a total of $1000 over a period of six months. Table 5.2 shows household dividends paid under CAMPFIRE programme as of December 1992.

**Table 5.2: Household Dividends as of December 1992**

| District | Ward or Village | Number of households | Dividend per household US $ | Year |
|---|---|---|---|---|
| Guruve | Kanyurira | 86 | 200 | 1990 |
| Guruve | Kanyurira | 140 | 400 | 1992 |
| Guruve | Chisunga | 449 | 150 | 1992 |
| Beitbridge | Chikwarakwara | 149 | 400 | 1991 |
| Gazaland | Mahenye | 391 | 135 | 1992 |
| Gazaland | Mahenye | 481 | 180 | 1993 |
| Kezi | Kennilworth | 300 | 75 | 1992 |
| Hurungwe | Ward One | | | |
| | Vidco 1 | 198 | 190 | 1992 |
| | Vidco 111 | 243 | 90 | 1992 |
| | Vidco 1V | 200 | 290 | 1992 |
| | Vidco V1 | 208 | 325 | 1992 |
| | Nyamakate | 554 | 50 | 1992 |
| Binga | Tyunga Ward | | | |
| | Sinamwende | 17 | 120 | 1992 |

(Bond, April 1993)

Bond (1993) reported that the process of paying household dividends varied in different

districts. In Chikwarakwara village in Beitbridge, a public accounting system was established where each villager knew exactly how the funds were derived, and how they were shared. (Thomas 1992) reported that in Guruve certain information was withheld from the communities. Bond (1993) identified four main factors affecting the level of community and household dividends, namely: the financial efficiency of wildlife utilisation; the cost of resource management; delineation of the resources; and devolution of benefits.

The question of efficiency in resource utilisation mainly depended on marketing efficiency and administrative expediency. In Nyaminyami for example, the delay in signing joint venture leases cost the district several thousand dollars (Murombedzi 1991b). Escalating costs of resource management have been associated mainly with centralised management such as in Nyaminyami Rural District. In the case of resource delineation, the major problem has been declining benefits as population densities increased mainly through immigration. In some districts the increasing number of beneficiaries has rendered household dividends meaningless and therefore compromised the sustainability of CAMPFIRE. In such cases, the beneficiaries of the producer communities need to be redefined, so that the resource and the benefits are closely linked. The CAMPFIRE guidelines propose that a producer community should not be more than a village (approximately 100 households). In some districts like Hurungwe wards (approximately 500 - 1000 households) have formed the producer community, constraining the decision making process and reducing household dividends. Bond (1993) reported that, on average,

50% of the wards within CAMPFIRE earn US$30 or less per annum.

Although figures show an increase in individual household benefits from US $48 in 1990 to US $92 in 1996, this increase in far from being representative of all CAMPFIRE districts. Rather it shows an expansion of hunting in the top four CAMPFIRE districts ( Nyaminyami, Guruve, Binga and Beitbridge) as they took advantage of the safari market.

As this niche is filled, assuming no diversification, the law of diminishing returns will likely set in with increases resulting from quality management of wildlife resources and foreign exchange gains rather than from increases in number of animals shot. Typically, the median benefit in 1996 is $45 not much different from the 1989 figure. This shows that in 1996 50% of CAMPFIRE households earned just enough to buy less than ten kilos of low quality maize.

It was also realised that factors affecting the level of household revenue include:

- Uneven, arbitrary, and often inappropriate Council distribution of less than the recommended 50% - 80% of benefits to wards;
- Migrants moving into CAMPFIRE districts looking for land consequently reduce wildlife habitat and the average household income;
- Most of the revenue is used for community projects, therefore reducing individual household dividends.

### 5.2.4 The Most Valued Benefit

It was difficult to determine from the interviews which is the most valued benefit as there was no single answer to this particular question. The value placed on the different types of benefits depended on the particular circumstance of a household /community. In areas where a school, clinic or diptank[12] was very far, any of these projects would be valued more than say meat or individual household dividends. On the other hand, in areas that were well supplied with a clinic, school or grinding mill, household dividends or meat could constitute the most important benefit. According to Bond (1993), household dividends are considered more important than other benefits, in general terms. He however, pointed out that what may be more important to the communities is not the level of benefits, but rather the participation of the local people in deciding on the distribution of the benefits.

### 5.2.5 Relationship between economic incentives and attitude towards wildlife

Linking benefits and conservation is not simple. While benefits are easily discernible, measuring conservation is an extremely complex task, and even estimating an animal population is fraught with technical difficulties (CAMPFIRE Association and Africa Resources Trust Fact Sheet). Given these circumstances, and for the purposes of this study, conservation was determined by using qualitative and indirect measurements such as the following:

[12] A diptank in a veterinary structure constructed by the government within communities where there is a pool of water with chemicals. All cattle in the community are expected to be dipped in the pool as a measure of eliminating ticks which cause disease in cattle.

- Whether revenues raised through CAMPFIRE projects are used by rural communities to manage their natural resources sustainably and whether each village has a wildlife committee, which deals with population counts, anti-poaching, environmental education, and conflicts between wildlife and humans.
- Whether local residents are trained as game scouts, and assist in local wildlife management
- Whether residents have reduced tree cutting and annual burning of their grazing lands, so as to improve wildlife habitat
- Whether some areas of communal land are being set aside for wildlife e.g. in Nyaminyami District
- Whether there is a decrease in the number of snares brought back by game scouts in suggesting less poaching ( However, it is expected that during drought years poaching increases)
- Whether during the recent drought CAMPFIRE committees used their income to drill boreholes for wildlife watering and to provide emergency food for wildlife (Bond 1993).

In order to enhance conservation effort by communities, the CAMPFIRE Association has recommended that greater technical assistance be provided to rural communities. This assistance, should include but not limited to; devising a system that accords rural communities secure land tenure and exploring ways of enhancing the value of wildlife through such activities as eco-tourism, and game ranching.

Another indicator for measuring attitudes change towards wildlife, can be wildlife population trends and habitat changes. The fundamental question in determining conservation effort is, who is in control of the resource at local level. Some local community members believed the RDC owned the resources, some argued that the chief owned the resource, while a few felt the resources belonged to them. These responses demonstrate the institutional confusion over ownership of the resources. There is therefore a need to define property rights as this is directly related to benefits and conservation effort. Property rights determines who receives the benefits and who pays the costs and if these two responsibilities do not reside in one defined group of people there is the threat of the tragedy of the commons. Because of the fugitive nature of the wildlife resource, conservation cannot be measured at the household level since large areas are required. Therefore, wildlife conservation efforts within CAMPFIRE districts can only be measured at the community level.

The use of economic incentives within CAMPFIRE was aimed at changing the attitude of local communities from considering wildlife as a nuisance, to regarding it as an asset worth conserving. The underlying vision of the CAMPFIRE fathers was that by giving producer communities a direct and visible economic benefit from wildlife resources, they will set aside land that they might otherwise use for agriculture, for wildlife. Some such measures would be to report poachers, refrain from family meat poaching activities, and cutting back on complaints on problem animals to the Department of National Parks and Wildlife Management (DNPWLM).

In the wards studied, the wildlife management responsibility is given to the Wildlife Committees through the Anti-poaching Unit. This Unit is trained by DNPWLM but equipped by the Wildlife Committees. In some wards, management costs are very high, reducing the amount of income available to the community. Where management costs are high compared to the benefits, wildlife is viewed negatively. The fact that most of the revenue from CAMPFIRE is used to fund community projects such as clinics, schools, and grinding mills and not going towards wildlife management, could be interpreted to mean that low priority is given to wildlife. However, it has been argued that this may be a manifestation of the natural process for the fulfilment of Manslow's hierarchy of needs rather than a reflection of low priority for conservation. It is therefore believed that once some of the basic needs for food, shelter and health are fulfilled and there is an increase in the revenue base, more CAMPFIRE revenue may be going into conservation of wildlife.

A representative of the CAMPFIRE Association during personal interviews was convinced that there is positive relationship between economic benefits and conservation effort. He alleged that in districts where there are no incentives the resources have been depleted. After the ban on trade in elephant products under the CITES Convention, poaching increased due to the fact that the people could not derive any benefits therefrom. This is the reason why the Government of Zimbabwe continued to fight for the down-listing of the elephant until final victory in 1997. In Dande, it was reported that communal people now sit in meetings discussing how to apprehend poachers.

Bond in a personal interview, reported that although no standard indicators have been developed to measure the impact of incentives on attitude towards wildlife conservation, a number of indicators mentioned above have been used. He further argued that, the change in peoples' perceptions does not happen overnight but it is a process. This explains the fact that, there is still subsistence poaching in certain areas and the problem will not go away completely. What CAMPFIRE has done is to give wildlife a value. Profitability will vary by area and genuine empowerment is the answer. Bond believes that empowerment is as important as economic benefits, and these two are mutually reinforcing. However, empowerment is ward-specific due to absence of a clear policy on this issue, and largely depends on local leadership. He identified the need for a policy or legal framework to facilitate empowerment. Such a framework needs to include responsibility, authority and management in order to work. The present situation is that RDCs have not devolved responsibility to communities, hence local communities are not "producer communities" in the real sense of the term. Appropriate authority status is given to the Rural District Council and in most cases communities remain passive participants and recipients of benefits.

Another problem is that, viable producer communities are not necessarily viable units for the purposes of wildlife utilisation. While in terms of decision-making and distribution of benefits, small, homogeneous communities are more efficient, larger land areas are necessary for viable hunting operations. Some wards need to draw up co-management agreements with other wards in order to be viable producers as is the case with

conservancies[13], This arrangement is difficult under the current administrative set up which has no relationship with ecological factors. It will also be difficult for a ward to join with another ward in a different district to form a viable wildlife management unit. Re-organisation is required to rationalise the administrative boundaries with viable wildlife management units under CAMPFIRE. The superimposition of separate wildlife management units on existing local government structures may aggravate the already existing confusion.

The rigorous application of both natural and scientific methods towards analysing the linkage between CAMPFIRE and natural resources management is challenging. Without applied research that tests meaningful hypotheses of the impact of CAMPFIRE interventions, far reaching conclusions are only tentative. Due to significant manpower, capacity and institutional constraints within CAMPFIRE, at the moment, it is difficult to undertake inventory, monitoring, and assessment of the biological sustainablity levels of wildlife resources for commercial exploitation. Only secondary indicators on exploitation exist in the form of data on trophy size and quality, wildlife numbers, distribution and subjective observation at producer level. These indicators are inadequate to test the hypothesis for this study, because of the presence of confounding factors including, climatic conditions, immigration, and activities outside CAMPFIRE areas.

Although it has been reported that trophy size in elephants appear to be stable in recent years, the data is not conclusive due to inaccurate reporting by RDCs. The fact is that

[13] Conservancies refer to area where commercial farmers have joined their farms for wildlife ranching.

wildlife management is a complex process involving biological, ecological, economic and social elements. The integration of all these considerations into a comprehensive, scientifically-sound and sustainable system of management is essential if the conditions within which species exist are to be understood and conclusions about the sustainability of commercial exploitation of wildlife be made with an acceptable level of certainty. Such a system is not yet in place for CAMPFIRE. In the absence of such comprehensive data, an analysis of changing attitudes of community members towards wildlife can be the best measure for the success of CAMPFIRE. Box 5.2 gives an indication of local people's changing attitudes towards wildlife under CAMPFIRE.

**Box 5.2**

**CAMPFIRE FROM INSIDE**

" CAMPFIRE is a good programme, and illegal hunting has gone down in our district. We still need to learn a lot about wildlife management, but villagers are finally beginning to understand that these natural resources are ours to manage."

**Onius Mpofu,Nyenyunga Village**

" Local poaching is a menace. We have people from other areas coming in and taking our animals"

**Champion Machaya, Dete Wildlife Committee**

"The buffalo[14] are our cattle"

**Spirit medium[15], Kanyurira Ward**
(Source: CAMPFIRE News 1994)

[14] The buffalo refers to the Cape buffalo.
[15] Spirit medium refers to traditional spiritual leader.

In 1992 a survey was carried out to monitor attitude changes towards wildlife in the CAMPFIRE areas. Table 5.3 shows the results of the survey. Districts were awarded scores on a three or four point scale. The scores have been converted into percentages with 100% representing a perfect score.

It can be argued from the table that awareness of CAMPFIRE spread rapidly, with 24 out of 56 RDCs applying for appropriate authority status in the first four years. Given that the other half of the RDCs do not have commercially viable wildlife resources, there is a maximum score possibility on this issue. On the other hand, it is evident that commercial skills improved rapidly as safari hunting was close to being fully utilized at 92%, while other forms of tourism developed slowly but steadily due to their complexities. It is also clear from the table that the level of community participation in the revenue distribution process increased satisfactorily, scoring 73% in 1992. Lastly it is quite evident from the table that there are significant attitudinal changes to wildlife due to CAMPFIRE. However, full involvement of communities in wildlife management required the transfer of specific managerial skills and institutional development. The four years already shows significant progress in the transfer of these skills to manage wildlife.

### 5.2.6 Comparative Analysis of Income from Agriculture and Income from CAMPFIRE

It appeared that the level of income from other sources like agriculture compared to that from wildlife have some bearing on the people's attitude towards wildlife. As has been

**Table 5.3: Monitoring and Implementation of CAMPFIRE**

| | 1989 | 1991 | 1992 |
|---|---|---|---|
| **Awareness of CAMPFIRE at RDC level** | | | |
| Awareness of value of wildlife | 50% | 67% | 79% |
| Application of Appropriate authority | 8% | 50% | 100% |
| Award of appropriate authority | 8% | 50% | 50% |
| **Earning Money** | | | |
| Is safari hunting used effectively? | 42% | 89% | 92% |
| Marketing skills | 23% | 62% | 77% |
| Are tourism opportunities utilised fully? | 0% | 8% | 28% |
| Marketing skills | 0% | 15% | 50% |
| **Spending Money** | | | |
| Level of community participation in distribution | 33% | 65% | 73% |
| **Understanding Attitudes** | | | |
| Attitudes towards wildlife in producer communities | 10% | 31% | 46% |
| Awareness/commitment of CAMPFIRE philosophy in RDC | 23% | 75% | 85% |
| **Wildlife Management Institutions** | | | |
| Monitoring safari hunting | 0% | 53% | 61% |
| Quota-setting | 0% | 0% | 64% |
| Problem animal control management | 11% | 44% | 56% |
| Anti-poaching | 17% | 61% | 64% |
| Marketing skills (at council) | 8% | 58% | 72% |
| Financial records | 22% | 56% | 58% |
| Implementation of micro projects | 3% | 28% | 42% |
| Expansion of CAMPFIRE into other natural resources | | | |
| Grazing | 0% | 8% | 8% |
| trees/woodlands | 6% | 8% | 8% |
| land-use planning | 8% | 19% | 33% |
| minerals | 0% | 0% | 0% |

(Source: Child et al 1997)

discussed earlier on, the way communities will value the benefits from CAMPFIRE will be inevitably influenced by the level of that benefit compared to other sources of household income. According to this scenario, one can conclude that the level of benefit

from wildlife has to exceed that from other sources for people to prefer living with the costs of wildlife management. However, there are other factors that may disqualify such a conclusion. For instance, cattle have certain social and cultural values that cannot be easily replaced by wildlife. It should also be noted that communal people in Zimbabwe rely on livestock farming and crops production particularly maize for subsistence. It would be difficult to change this land use system and replace it with wildlife management that is communally owned. The argument of wildlife income being additional rather than a substitute for other income could provide the best prospects for CAMPFIRE.

Earlier on, it has been noted that the main crop grown in Dande Communal Land is cotton. The income from cotton has been quoted in literature as between US $2 000- $3 000[16] per household per annum in good years. Income from CAMPFIRE for the same area is contained in Table 5.4 below.

**Table 5.4 : Average (wildlife)Income Per Household In Dande Communal Land ( US $)**

| Ward | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|---|---|---|---|---|---|---|---|---|
| **Chapoto** | 80.70 | 44.61 | 38.29 | 57.89 | 110.53 | 129.45 | 126.55 | 110.72 |
| **Chisunga** | 66.89 | 60.30 | 38.48 | 52.65 | 120.13 | 123.71 | 144.63 | 168.38 |
| **Neshangwe** | 0.00 | 1.92 | 0.77 | 3.54 | 3.50 | 4.43 | 0.00 | 4.11 |
| **Chiriwo** | 0.00 | 7.43 | 0.83 | 24.79 | 35.06 | 94.53 | 35.41 | 28.96 |
| **Matsiwo A** | 0.00 | 3.33 | 0.00 | 0.00 | 0.00 | 1.24 | 0.85 | 0.00 |
| **Chitsunga** | 2.39 | 1.66 | 0.18 | 0.62 | 3.30 | 3.95 | 11.38 | 0.00 |
| **Matsiwo B** | 0.00 | 2.61 | 0.00 | 0.00 | 0.00 | 0.97 | 0.00 | 10.44 |
| **Neshangwe** | 0.00 | 0.00 | 0.00 | 0.00 | 0.13 | 1.65 | 2.95 | 549.20 |
| **Kanyurira** | 234.27 | 263.52 | 198.32 | 450.70 | 586.99 | 648.74 | 503.01 | 0.00 |
| **Mutota** | 0.00 | 0.00 | 0.00 | 0.00 | 0.26 | 0.42 | 0.57 | 0.00 |
| **Mukwena** | 0.00 | 0.00 | 0.00 | 0.00 | 0.15 | 0.23 | 0.00 | ? |

(Source: Bond 1997).

These figures show that only three wards, Chapoto, Chisunga and Kanyurira received substantial dividends from CAMPFIRE between 1989 and 1996 that is comparable to income from cotton. The rest of the wards receive negligible amounts from CAMPFIRE. From the personal interviews conducted in Kanyurira Ward, it was clear that the attitudes towards wildlife was a function of the level of return households in a particular ward received from wildlife. In wards where revenue is low people tended to value agriculture more than wildlife and advocated for removal of wildlife from their areas. However, the study demonstrated that that there exists other benefits which communities under CAMPFIRE value apart from financial returns. Meat and local empowerment are some of the other non-monetary benefits that were mentioned during the survey. In fact most of the CCG members interviewed argued that local participation is more important for the long term success of CAMPFIRE than the monetary benefits that has been so widely publicised. Representative of local communities interviewed felt that they do not have much say in wildlife management and utilization. One example cited was that they are not allowed to decide on hunting and meat cropping quotas that remain the prerogative of the DNPWLM.

However, the role of economic incentives cannot be underplayed given that most of these communities are very poor and need money for sending their children to school as well as to buy basic necessities. The contribution of CAMPFIRE revenue through community projects is also very important, although these are not well understood in Guruve. Cash

[16] The income figures apply to those areas of Guruve in Agro-ecological regions IIa. Figures in Dande Communal area although nor available are much less than these due to the climatic conditions.

dividends are usually preferred but are rather viewed as bonuses since there amounts are not fixed and their distribution not predictable.

### 5.2.7 Returns from Cattle versus Wildlife

In analysing the literature on it was found to be misleading to use the monetary values of cattle and wildlife as a basis for determining people's preferences. However the Department of National Parks and Wildlife Management has attempted to do this comparison as a way of proving that in natural regions IV and V returns per hectare from wildlife is more than that from cattle. According to Bond (1993) the return on investment for wildlife is 8.6% while that for cattle is only 2.5%. Net revenue per hectare has been estimated at US$ 1.11 for wildlife and US$ 0.60 for cattle. Table 5.5 shows that wildlife offers greater economic value than cattle in the semi-arid regions in Zimbabwe. It has however, been argued that there are other values of cattle that cannot be reduced to monetary value, which suggests that the above comparison may be too simplistic.

**Table 5.5 : Theoretical Ceiling Values for Various Form of Wildlife Management**

| Type Of Management | Gross Return Per Ha. Us $ | Assumed Profit % | Net Return Per Ha. US $ |
|---|---|---|---|
| 1. Mass Wildlife Tourism | 100 | 100 | 25 |
| 2. Exclusive Wildlife Eco-tourism | 50 | 100 | 25 |
| 3. International Safari Hunting | 7.5 | 200 | 5 |
| 4. Sale Of Live Animals | 5 | 100 | 2.5 |
| 5. Meat, Hides And Products | 2.5 | 66 | 1 |
| 6. Subsistence Hunting | 1 | 100 | 5 |
| 7. (Cattle Ranching) | 15 | 20 | 3 |

(Source: Martin 1994).

### 5.2.8 Empowerment and Attitude towards wildlife

The participation of local community members in CAMPFIRE is through a system of representative government. People elect representatives to the village and ward wildlife committees. Communities have the power of installing and removing these representatives through election. This has happened in Tsholotsho district where a Wildlife Committee was removed by the people because of corruption. The CAMPFIRE Association believes in decentralisation of management responsibility to the ward and village level, although its interface is with RDCs. The Association designs training programmes for RDCs and communities to enhance their capacity to manage wildlife resources.

Most of the people interviewed believed that CAMPFIRE can be ecologically sustainable with the help of local empowerment and a sense of ownership of wildlife resources by the communities. There is still lack of ownership of wildlife by local communities. The general feeling is still that government through the DNPWM, is the owner of the wildlife and should therefore compensate them for any losses caused by them. A demonstration of this attitude, is that claims for crop and other damages, only arise when wildlife associated with government, such as elephant, lions and buffalo are involved. By contrast, damage caused by wildlife species that have never been removed from the people, such as baboons, birds, crocodiles etc. are not even reported for compensation. This clearly demonstrates that the conflict between people and wildlife has a lot to do with peoples' perceptions as to who owns the wildlife. The alienation of people from wildlife, by making it state property during colonial days, is the main cause of these perceptions.

Another pertinent example is that if someone dies resulting from a snake bite, no claim is made to the government for compensation, as this is regarded as a natural occurrence.

Another aspect to empowering local communities in wildlife management under CAMPFIRE has been through capacity building within the RDCs and the Ward and Village Wildlife Committees. The role for capacity building and awareness within CAMPFIRE has been the responsibility of the Zimbabwe Trust.

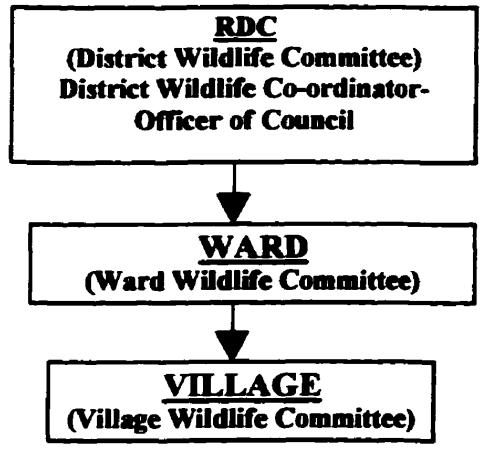



**Figure 5.1: Management Structure of CAMPFIRE at Local Level**

Theoratically through this structure as shown in Figure 5.1, decisions on wildlife management and utilisation are made by the whole community through their representatives at village, ward and district level. However, in many cases the elected representatives fail to represent their people and become part of the local government. In some rural districts like Nyaminyami, communities have become aware of their rights and have challenged corrupt practices. Recent criticism on increasing corruption within

wildlife committees by the communities in Nyaminyami, is clear evidence of the success of democratisation rather than a failure of CAMPFIRE.

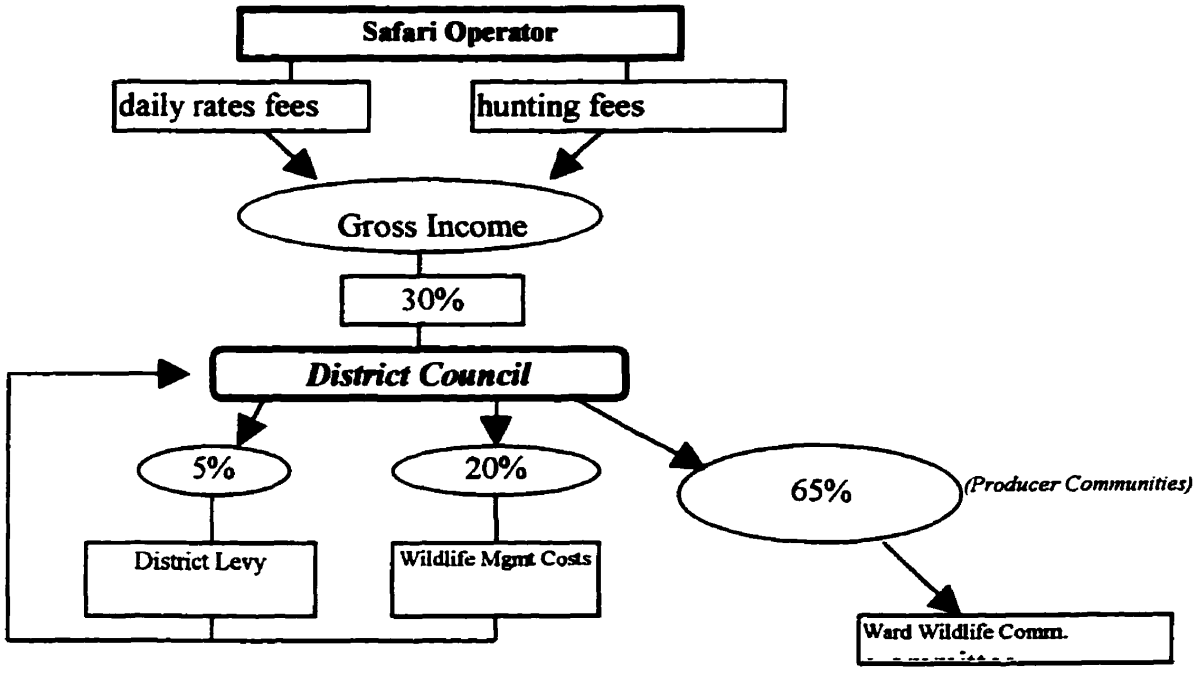
### 5.2.9 Revenue Distribution

The DNPWLM set out guidelines for RDCs for revenue distribution in 1991 in order to ensure that most of the revenue realised was ploughed back into the communities who bore most of the costs of keeping wildlife. According to these guidelines, not less than 50% of the total revenue should be allocated to the producer community. Because of the uneven distribution of wildlife within the CAMPFIRE districts, the DNPWLM required that benefits are returned to "producer communities" defined on a ward basis to ensure that levels of benefits reflect production levels. The DNPWLM also recommended that District Councils levy a service charge that should not exceed 10-15% of revenue. Payment to compensate for livestock and crop damages should come from the amount allocated as household dividend. District councils would however retain control over the use and distribution of wildlife revenues by wards. Although District Councils have the legal mandate over wildlife in their area, it was expected that they would delegate increasing responsibility to producer communities (Pangeti 1990). The guidelines were revised in 1992 recommending that 80% of gross revenue should be allocated to the producer community. As these were only guidelines, the interviews revealed that in reality the distribution of benefits in some districts were as follows: council - 35%; CAMPFIRE Association - 2%; and communities - 63%. These percentages however differ from district to district. As these were only guidelines, each RDC would use its discretion.

Figure 5.2 shows the revenue allocation scheme adopted by the Guruve Rural District Council. Analysing the actual revenue distributed in Guruve over the years, there is a variation of these percentages in different years. However, what is notable is that in some years, some wards have received revenue in excess of the recommended percentage in the guidelines as will be seen later in the report. Table 5.2 shows revenue distribution formula adopted by Guruve District Council. It has been argued that the safari operators are getting the most benefit from CAMPFIRE at the expense of the communities. The Safari operator according to figure 5.2 gives 30% of his receipts to the RDC. Whether this argument is true or not is subject to further analysis.

Table 5.6a shows a steady increase in the average amount allocated to communities in all CAMPFIRE districts from Z$ 396 005 to Z$33 009 362 between 1989 and 1996. Looking at the same figures presented as percentages (Table 5.6b), it is evident that the increase in amounts allocated to communities over the years does not result in increase in the percentages allocated to communities. The percentages allocated change from one year to another. When one looks at the district level one notices wide variations from the national average. Guruve district has experienced an increase in revenue from $198 770 in 1989 to $ 305 956 in 1996. However, the percentage allocated to communities in Guruve during the same period ranges from 30% to 78%. The same message is relayed when the data is translated into a chart, Figure 5.3a which shows revenue allocation percentages show fluctuations.

**Figure 5.2: CAMPFIRE Revenue Distribution Scheme in Guruve District**




On the other hand, figure 5.3b which represents absolute revenue figures show a steady increase in the amount allocated to communities. The trend as demonstrated in the figures below, does not have much promise for raising the percentage from the current 58% to 80%. If the percentage allocation to communities cannot be increased then the individual household income is likely to remain static and even decline in real value over the years. This situation will have implications to the extent to which CAMPFIRE can change people's attitudes towards wildlife.

It is therefore clear that, the average figures do not necessarily give a true picture of what is happening within the different CAMPFIRE wards. For Guruve district, the percentage allocation to communities has been as high as 78% in 1994, which is very close to the ideal 80%. If figures were to be broken down to ward level it is possible that some

communities have got an allocation beyond the 80%. This demonstrates the disparities that exist in different districts and accounts for different impacts of CAMPFIRE. Averaging figures for CAMPFIRE can therefore be misleading. Given this problem, generalizing the impacts of CAMPFIRE at national level can also be misleading.

What is important for this study, is whether there is more revenue going to the communities. The reason for saying this is that communities will look at the total amount they get at the end of the day, rather than whether the percentage allocated to them is actually increasing or declining. However, in the final analysis the percentage allocated to the communities will determine the amount that communities get. The higher the amount allocated the greater the incentive.

**Table 5.6a: CAMPFIRE Programme: Revenue Allocation 1989- 1996 ($Z)**

| Year | Disbursed to Communities | Wildlife Management | Council Levy | *Other | Total | % annual change |
|---|---|---|---|---|---|---|
| **1989** | 396 005 | 173 180 | 60 386 | 25 789 | 655 150 | |
| **1990** | 509 994 | 300 310 | 129 854 | 55 623 | 955 781 | 52 |
| **1991** | 1 203 673 | 823 441 | 451 786 | 213 544 | 2 692 444 | 170 |
| **1992** | 3 534 141 | 1 059 673 | 589 914 | 91 185 | 5 274 913 | 96 |
| **1993** | 5 560 958 | 2 331 210 | 1 639 316 | 210 050 | 9 741 534 | 85 |
| **1994** | 7 794 511 | 2 583 326 | 1 219 653 | 349 137 | 11 946 627 | 23 |
| **1995** | 8 146 853 | 3 158 866 | 1 715 521 | 228 688 | 13 249 928 | 11 |
| **1996** | 5 863 227 | 3 899 676 | 2 780 376 | 78 504 | 12 621 783 | 5 |
| **Total (89-96)** | **33 009 362** | **14 329 682** | **8 586 806** | **1 252 310** | **57 178 160** | |

* Other: refers to revenue invested in capital development projects and RDC levy to CAMPFIRE Association
(Source: WWF Office in Harare)

**Table 5.6b: Percentage Allocation of Revenue by Year from 1989 - 1996**

| Year | Disbursed to communities | Wildlife management | Council Levy | Other | Total |
|---|---|---|---|---|---|
| **1989** | 60.44 | 26.43 | 9.22 | 3.90 | 100 |
| **1990** | 51.22 | 30.16 | 13.04 | 5.59 | 100 |
| **1991** | 44.71 | 30.58 | 16.78 | 7.93 | 100 |
| **1992** | 67.00 | 20.09 | 11.18 | 1.73 | 100 |
| **1993** | 57.09 | 23.93 | 16.83 | 2.16 | 100 |
| **1994** | 65.24 | 21.62 | 10.21 | 2.92 | 100 |
| **1995** | 61.49 | 23.84 | 12.95 | 1.73 | 100 |
| **1996** | 46.45 | 30.90 | 22.03 | 0.62 | 100 |
| **Total** | 57.73 | 25.06 | 15.02 | 2.19 | 100 |

(Source: WWF Office in Harare)

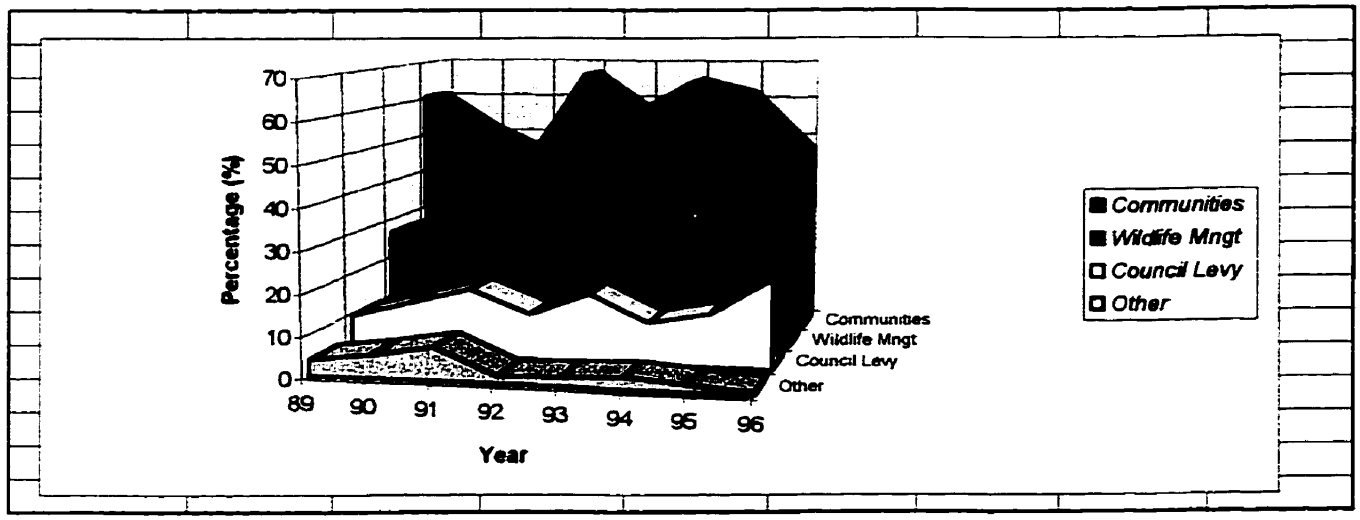



**Figure 5.3a:Percentage Allocation of CAMPFIRE Revenue**

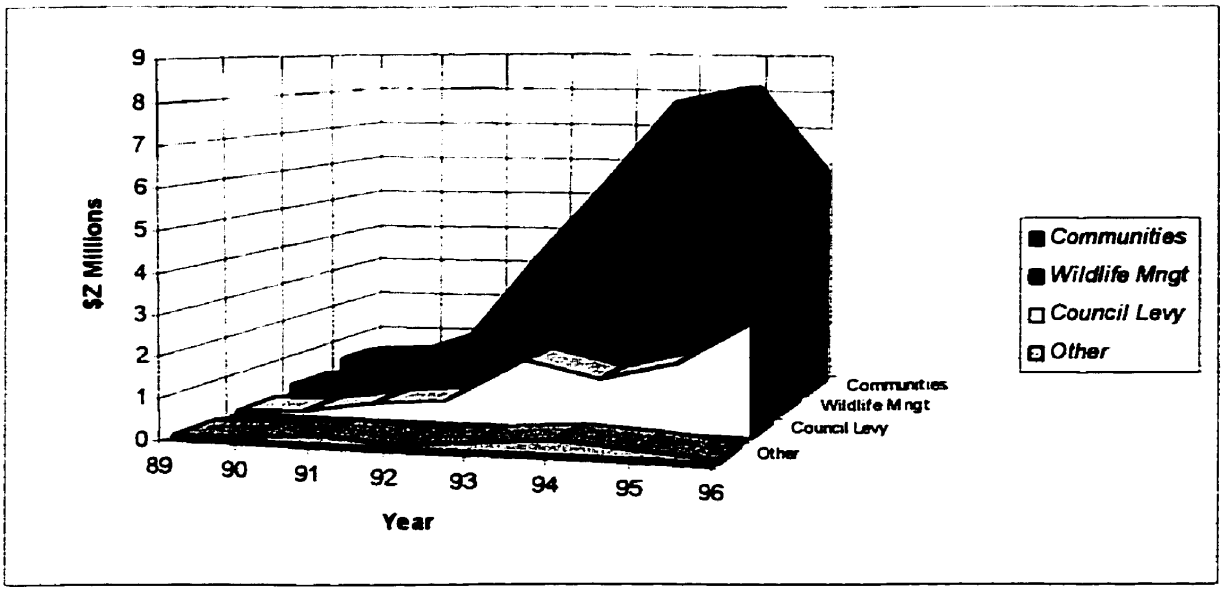



**Figure 5.3b: Allocation of CAMPFIRE Revenue in Absolute Amounts**

Martin (1994) concludes that one primary cause of negative attitude towards wildlife by villagers is the problem of distribution of benefits to producer communities. RDCs are either unwilling or slow to distribute cash. In many areas therefore, villagers are failing to see the linkage between wildlife conservation and improved income and consequently they continue to submit inflated claims for compensation for losses from problem animals. The question therefore remains of who owns wildlife, the villagers or the RDC?

## 5.3 Cost of Wildlife Management

Under CAMPFIRE, communities are allowed to benefit directly from the utilisation of wildlife in their area. This arrangement, does not however remove the costs imposed on wildlife to communal people, but creates some benefits. The challenge that CAMPFIRE faces is to bring the benefits of wildlife utilisation into equilibrium with the costs incurred

in conserving wildlife. Furthermore there is also a challenge in getting the communal people to recognise the linkage between wildlife conservation and the income derived from tourist activities.

This wouid require a detailed benefit-cost analysis that is beyond the scope of this study. The issue of costs of living with wildlife has not received much attention perhaps due to the difficulties in putting a value to these costs. However, in analysing the benefits from CAMPFIRE, the researcher, carried out a brief analysis of some of the costs associated with wildlife management without putting dollar values to these costs. The only costs that have been taken into consideration are the direct costs of wildlife management including cost of employing game guards, PAC and other related costs. There are costs imposed on communities associated with living with wildlife that have not been considered. These costs however, account for the negative attitude of communities towards wildlife. These include: destruction of crops, destruction of household property, loss of lives, and loss of sleeping time and anti-poaching activities.

### 5.3.1 Crop Raiding

Elephants, baboons and buffaloes constitute the main problem animals. People in the CAMPFIRE wards of Guruve grow mainly maize, millet, and cotton. Locals claim that they lose a lot of money every year due to crop damage by wildlife. In trying to protect their crops from wildlife damage, communal farmers sleep in their fields during the cropping season, beating drums to scare off wildlife. However, reports from the villagers indicate that the destruction of the crops is on the increase as wildlife populations are increasing. The problem animal control programme under the Department of National

Parks and Wildlife Management is ineffective due to communication problems. By the time the Problem Animal Control Unit responds to a request, the animals would be long gone. Compensation for crop damage in either very little or non-existent as shown in Table 5.5. Crop destruction is considered the highest cost of living with wildlife by the villagers. In fact, some villagers argued that animals destroy crops in one ward and move to other wards. When the same animal is shot, through problem animal control (PAC) or through normal hunting concession, it may be located in a different area. The fact that the people in the area where the animal is shot become the beneficiaries of the revenue or meat can therefore be unfair under the circumstances. It is therefore not always true that beneficiaries of CAMPFIRE revenue are the ones who pay the cost of living with wildlife. The government has not been able to find a solution to such situations mainly because these are more an exception than the rule.

**Table 5.7: Damages versus Compensation in 1989**

| Ward | No. of Victims | Value of Damages $ | Compensation Received $ |
|---|---|---|---|
| Neshangwe | 21 | 5 000 | 2 000 |
| Chitsungo | 6 | 3 000 | Nil |
| Matsiwo A | 0 | Nil | Nil |
| Matsiwo B | 0 | Nil | Nil |
| Chisunga | 5 | 1 000 | 300 |
| Chapoto | 0 | Nil | Nil |
| Chirivo | 0 | Nil | Nil |
| Kanyurira | 0 | Nil | Nil |
| Totals | 32 | 9 000 | 2 300 |

(Source: Zisani 1994)

### 5.3.2 Destruction of livestock

Destruction of livestock by wildlife constitutes an important cost to the villagers since communal wealth is usually measured in terms of the number of livestock one has. In Chitsungo Ward in Guruve, within a period of two weeks, lions killed 15 goats and 4

dogs in June 1997. Dogs and goats are usually killed at night by hyenas, leopards and lions. If one is to cost these animals the level of benefits will be much lower. As predators are more difficult to catch, the PAC has not had much impact on this problem.

### 5.3.3 Destruction of household property

Although the level of destruction of household property is low some key informants noted that in drought years wild animals raid homes particularly granaries to eat food. There has been reports of granaries pulled down and the destruction of field shelters. Again most of this destruction goes without compensation. In fact in a benefit-cost analysis of CAMPFIRE one would calculate the net figure after full compensation is paid out of the benefits. However, elements like sleeplessness and loss of security would be difficult to quantify.

### 5.3.4 Death and injury to people

Elephants and buffalo have accounted for the majority of cases pertaining to injuring and killing of people. These cases mainly occur during the harvesting season (January to May) when wildlife come to raid crops. Early morning and late nights are the time when most people are killed. Some local people claim that safari hunters are responsible for driving animals towards the villages and this creates conflicts between the hunters and the villagers. National Parks officials believe that most people who are attacked are those who settle in the wildlife corridors. Conflicts between humans and animals also emanate from competition for wild fruit and at water points. Those people who sleep in the fields at night guarding crops also expose themselves to possible animal attacks. Table 5.6

shows statistics of deaths due to wildlife in Guruve Chisunga, Neshangwe and Chiriwo since 1994.

**Table 5.8 : Deaths due to wildlife in three wards in Guruve District Wards since 1994**

| Date | Sex | Age | Ward | Animal Type | Circumstances |
|---|---|---|---|---|---|
| - 1994 - | male | young | 3 | elephant | guarding field |
| - 1994 - | male | young | 3 | elephant | guarding field |
| Sept. 1994 | Female | 47 | 4 | elephant | close to river |
| Apr 1995 | male | ? | 2 | elephant | guarding field |
| May 1996 | male | 6 | 3 | crocodile | |
| June 1996 | Female | 75 | 3 | elephant | guarding field |
| Aug. 1996 | male | 45 | 4 | elephant | on the road |
| Feb. 1997 | male | 10 | 4 | crocodile | fishing |
| Feb 1997 | male | 67 | 3 | elephant | on the road |
| Apr. 1997 | male | 42 | 3 | crocodile | swimming |
| | male | ? | 2 | buffalo | |

(Source: Zimbabwe Republic Police) Note: Data before 1994 was not available because there was no police camp in this area

### 5.3.5 Loss of sleeping time

Villagers sleep in their fields to guard against wild animals. This task is mainly performs by the head of the family. This means that this person will sleep during the day and guard the field at night. Apart from endangering one's life, the person is prevented from carrying out other duties at home.

In some wards in Dande, the people expressed the view that CAMPFIRE places more importance on wildlife than on people. One woman stated that:

*"When a person or a field is destroyed by wild animals*

*the responsible authorities are very slow to react but*

*when a wild animal dies the whole village is surrounded by guns and angry frightening rangers - so who is important us or wildlife?"*

This shows the human wildlife conflict that CAMPFIRE has to deal with. The villagers in certain wards also complained that the RDC had broken its promise of monthly game meat supply and hence feel betrayed by the RDC officials. They further complained that when meat is available more meat goes to influential people in the community (e.g. spirit mediums and members of the Ward and Village Wildlife Committees) and the ordinary villagers get very little meat. This raises the question of distribution of benefits.

# CHAPTER SIX:

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Summary

The research sought to accept or reject the hypothesis that in a common property regime, communities will conserve the resources when they derive benefits from them that exceed the cost of living with or managing the resource. A literature review and primary and secondary data collection form the basis for the findings, conclusions and recommendations of this study. In summarizing the study, each objective of the study is restated and a summary of the research findings are presented.

- Objective One:

The first objective was to carry out an analysis of benefits accruing to communities from the CAMPFIRE programme. The benefits included in the study include community benefits such as schools, clinics, household dividends, meat and emporwerment of local communities. Household dividends were originally not included in the CAMPFIRE programme, but were introduced in response to the needs expressed by the local community members through the Ward Wildlife Committees (WWCs) and the Village Wildlife Commitees (VWCs). Household dividends are now a common feature in the CAMPFIRE revenue distribution process, particularly in Guruve District and seem to be preferred above other benefits. Community projects have been the original intended use of CAMPFIRE revenue. With more participation of the local communities, these projects are

being located in the area where the costs of wildlife are mostly felt. This tends to have a direct effect on people's attitude towards wildlife particularly when the local communities take part in the decisions of revenue allocation. Guruve has many examples of cases where community members have taken part in decisions on allocation of revenue. Other benefits include local empowerment and meat. Although initially local emporwement was not envisaged as an incentive, experience so far, has shown otherwise. In fact, it has become one of the most important benefits with the greatest potential of influencing people's attitude towards wildlife and CAMPFIRE. Meat has been underplayed as a benefit but it seems to be a potential benefit for the future success of CAMPFIRE.

- Objective Two:

The second objective was to examine the linkages between the above benefits to changing peoples attitudes towards wildlife. A casual linkage was established but there were variations between different wards. The research acknowledged the complexity of this linkage.

The main setback was the lack of measurement criteria for changing attitude. The main measure adopted for the purposes of this study related to more commitment and effort by local communities to conservation. Due to the nature of the measurement criteria and lack of a comprehensive monitoring programme for wildlife populations, and habitat change, it was difficult to do any quantitative assessment of increase or decrease of conservation effort. The nature of the income generating activities under CAMPFIRE (mainly foreign tourism related) has made it difficult for local communities to participate meaningfully in

wildlife management activities. The fact that the responsibility for wildlife management is at RDC level makes communities more of receipients of benefits rather than meaningful participants in managing wildlife. In such circumstances, it becomes difficult for communities to appreciate the linkages between income and sustainable utilization of wildlife.

- Objective Three:

The third objective was to make policy recommendations on how the various incentives could be enhanced to promote sustainable management of natural resources by rural communities in Zimbabwe. A number of policy recommendations have been made to improve the effectiveness of the current incentives under the CAMPFIRE programme. These policy recommendations include the need to facilitate devolution of responsibility for wildlife management to ward and village levels, through creation of appropriate policy and legal framework. The question of local empowerment will depend largely on both human and institutional capacity building among the CAMPFIRE communities.

The study also acknowledged that for CAMPFIRE to become an important incentive for local communities most of them very poor, there is need to improve the level of income benefits. One way recommended is to put into place innovative measures for diversifying the income base for CAMPFIRE and involve the communities more in revenue distribution. The facilitation of co-management arrangements between wards can make CAMPFIRE more viable economically and substantively improve the revenue levels.

- Objective Four:

The last objective was to identify areas of further study. It was not possible make firm conclusions on whether incentives can improve management of natural resources by communities due to lack of various pieces of essential data and major policy initiatives, which would make such as assessment possible. These identified gaps have been the basis for most of the policy recommendations make for future work. Recognizing the limitation of this study due to time constraints lead to some specific recommendations of not only areas needing further research, but also some appropriate research methodologies.

### 6.2 Analysis of Benefits

When CAMPFIRE was first concieved the idea was to use financial benefits from wildlife utilization as an incentive to re-establish harmony between wildlife and local communities. However as CAMPFIRE has been implemented over the years it has been realised that apart from the economic benefits that can be realised from sustainable use of wildlife resources, there can also be social benefits. Both these benefits can serve as incentives to encourage local communities to regard wildlife as an asset rather than a menace.

Cherry Bird (1995) of Hurungwe District stated the following with regard to the CAMPFIRE programme:

" We all know there are problems to face, but I see CAMPFIRE as a small child learning to walk. Sometimes it falls over, but you do not abandon it, saying it is doomed to be crippled for life, you pick it up, brush off the dust, and set it on its way again. If you look after it well, feed it, and teach it, may be it will look after you in your old age."

This statement sets the tone for the types of conclusions that this research makes about CAMPFIRE as an incentive-based natural resources management programme. There are both successes and failures in CAMPFIRE, and perhaps more failures than successes, but what is important is its potential for the future.

### 6.2.1 Economic Benefits

CAMPFIRE has brought a number of benefits to local communities through management and utilization of wildlife. These benefits include both economic and social benefits.

**1. Community Projects**:

Despite the introduction of household dividends, community projects are still funded from CAMPFIRE revenue. With improved participation of local communities in decision making, community projects now reflect peoples' priorities, as most of these projects are now located in areas where people pay the costs to live with wildlife.

While agriculture revenue cannot be used for funding community projects, CAMPFIRE revenue can be used for such purposes. Given the limited financial basis for most RDCs

CAMPFIRE revenue can play a very crucial role in providing schools, clinics, grinding mills etc which will greatly improve the quality of life of local communities. The CAMPFIRE revenue is of unique importance with regard to funding community projects and the future of CAMPFIRE with regard to funding of community projects is promising.

**2. Household Dividends:**

Household dividends appear to be the most valued benefit under CAMPFIRE in general terms. This is because of the nature of the household income that comprises mainly of individual sources. Community income has never been a feature of household income in Zimbabwe. Although community projects are of value to local communities, these have always been provided for by the government and communities do not regard them as additional benefit to them. Any income that comes directly to the household income is likely to be valued more due to the factors outlined above no matter how negligible. Also given the fact that wildlife production does nor involve investment of money and labour by communities, results in communities regarding any income from CAMPFIRE as bonus and it is regarded highly.

However, in terms of contribution to total household income, the conclusion is that revenue from CAMPFIRE although substantive at national level, is negligible at household level. Revenue from wildlife utilization is therefore best considered additional revenue rather than the main source of revenue. It is obvious that agriculture production is the main source of revenue in Dande. The unpredictable nature of the revenue also contributes to its value among community members.

**3. Revenue Distribution:**

CAMPFIRE aimed at devolving benefits from wildlife to communities, thereby establishing a link between conservation costs and economic benefits. Bond (1993) argued that for communities to develop the sense of proprietorship over wildlife and conserve it, benefits should be paid directly to households and so far in most districts there has been insufficient revenue distributed at household level. Producer communities have received 35% of the wildlife revenue for the years 1989, 1990 and 1991 which is equivalent to 65% tax on wildlife as a land use. Given this situation, wildlife cannot compete with agro-pastoral activities as a land use since this activity is untaxed but subsidised instead. Unless Rural District Councils are prepared to distribute the bulk of revenue to producer communities, income per household will continue to be negligible. Consequently the contribution of CAMPFIRE revenue to total household revenue will remain small and attitudes towards wildlife are bound to remain largely negative.

**4. Meat as a benefit:**

Meat as a benefit under CAMPFIRE, has not been promoted or publicised. This is due to the fact that the government and particularly the Department of National Parks and Wildlife Management, has in the past promoted preservation as opposed to sustainable use. This emanates from preservationist ecological principles embedded in the colonial laws that prohibited any consumptive use of wildlife. At the international level, cropping for meat would also not be taken very kindly, given the current stereotypes by most northern countries that only believe in the aesthetic value of wild animals.

The cropping of wildlife for meat has therefore not been actively promoted except in Nyaminyami District were cropping has been encouraged by the Nyaminyami Wildlife Trust. There was a general feeling among community members that meat is an important benefit particularly in districts with small populations.

**5. Agriculture versus Wildlife:**

The brief comparison carried out on benefits from wildlife can lead to the conclusion that in Dande agriculture production is still the dominant form of land use and communities derive more income from crop production, particularly cotton. Income from wildlife is only substantive in a few wards, yet in other wards it is negligible and its distribution is unpredictable. Income from wildlife should therefore best regarded as bonuses. The success of CAMPFIRE in this area will not depend on bringing large monetary returns to communities but rather on creating a sense of stewardship over wildlife resources. Community projects also have a chance of being a valued benefit since it is not possible to fund such projects from income from agriculture since it accrues to individual households.

**6. Cost Internalization:**

Apart from the benefits from wildlife, there are also costs some of which have already been discussed. There has not been a comprehensive benefit-cost analysis of the CAMPFIRE project and consequently costs of living with wildlife have been largely ignored. Until such an analysis is conducted, it will be difficult to say with certainty whether benefits from CAMPFIRE are greater than the costs. However, this issue may not be critical in the short term since most rural communities do not consider costs when calculating benefits. Agriculture is a good example, where most communal farmers only

consider the revenue they get after selling their produce to the Grain Marketing Board, without consideration of the costs of production including labour. Given this situation the calculation of net benefits may not be critical particularly when looking at people's perceptions regarding the linkage between the benefits from CAMPFIRE and wildlife conservation.

### 6.2.2 Socio-Political Benefits

**1. Local Participation and Empowerment:**

The study has shown that empowerment is a major incentive and that there is scope for improvement. In communities where local people participate effectively in management and utilisation decision-making, like in Guruve, there seems to be more acceptance of wildlife than in areas where communities are marginalised. Since empowerment is a process, one finds that the level of community participation varies in different districts. Whether or not the nature of the existing resource management institutions has any bearing on empowerment still requires study. One of the major obstacles to empowerment is the slow process of devolution of authority to manage and utilise the resources from the district council to the communities. There are two main reasons for this. One is that RDCs consider wildlife revenue as providing additional resources for developmental activities in the whole district. To let go these financial resources at the time when grants from government are being cut, has not been easy. However, CAMPFIRE provides a good model for empowerment and co-management and its growth demonstrates this potential. The sustainablity of the CAMPFIRE programme will likely depend on empowerment as an incentive more than on the financial benefits. The reason is that given the current

situation, the chances of the revenue from CAMPFIRE to be increased substantially to become the main source of revenue for households in communal areas is quiet remote.

Community empowerment is also hampered by the lack of expertise for quota-setting, problem animal control, marketing of tourism, which make them dependent of outside institutions and government for such expertise. Until the communities can improve their capacity for managing wildlife, empowerment will remain limited. However, the CCG members are training community members to enable them to manage wildlife and sustainably utilise them.

**2. Devolution of management responsibility:**

Devolution of natural resources management to user level is a pre-requisite to the success of CAMPFIRE. When the concept of granting appropriate authority status to RDCs was first muted, the belief was that the Rural District Council (RDC) was representative of the communities. As CAMPFIRE proceeded, it has been realised that the communities did not effectively participate in decision making within CAMPFIRE and hence negative attitudes towards wildlife prevailed. Although there has been some policy anouncements for RDCs to further devolve responsibility for wildlife management to producer communities, there has been general reluctance to do so. The reason for this reluctance is that most RDCs are cash-trapped and they see the revenue from CAMPFIRE as additional resources for district development. Only a few districts have therefore devolved responsibility to ward and village levels.

The devolution of wildlife management to RDC is a fairly recent concept dating back some ten years ago and has not been widely accepted by the Department of National Parks and Wildlife Management and the RDCs in particular. There are however, some de facto devolution of authority within a few districts, Guruve being an example. Sustainable utilisation has been deliberately interpreted in the sense of recreational hunting and non-consumptive use of wildlife. The other major benefits are the monetary benefits that have been given more prominence at the beginning of CAMPFIRE. The assumption was that people valued tangible benefits in the form of money, and the promotion of recreational hunting and non-consumptive use of wildlife provided the greatest monetary benefits that would make wildlife management a viable land use option. As communities became more involved in decision making for both management and revenue distribution, the situation has improved. The distribution of funds from CAMPFIRE in some districts, now reflect priorities for the producer communities instead of those of the RDC. This shift has seen the introduction of household dividends alongside community projects. However, the preference between community projects and household dividends cannot be generalised since it is a function of specific needs of each community although in general terms individual household dividends seem to be preferred.

The other factor is that there is general confusion as to the difference between local government (an extension of central government) and local administration. RDCs still act as if they represent the people, when in actual fact they represent government at local level. Due to the absence of any legal responsibility for wildlife management at the ward and village level, RDCs can only use their discretion in the allocation of revenue to

producer communities. This situation if not corrected will delay devolution of responsibility for wildlife to the grassroot level further.

For RDCs, rights and obligations are clearly stipulated for district councils, while no similar rights and obligations are prescribed for producer communities over the resource. Again by failing to describe the process by which the district council should devolve management to producer communities, the programme runs the risk of prescribing "centralisation" at the district level with little scope for local participation in management ( Murombedzi 1991).

In most RDCs this devolution has been very slow and in others non-existent. Increasing conflicts between communities and RDC is a clear demonstration of the unclear situation of unspecified rights and responsibilities. However, different RDCs have used the allocation percentages-as only a guideline, while using their own discretion to decide on the allocation formula. In general terms, more RDCs are allocating more revenue to the communities and retaining less. This development may indicate that there is increased participation by local communities in decision-making, including the distribution and use of CAMPFIRE revenue. It is obvious that when more money goes to the community people will likely value wildlife more and this may result in increase in conservation effort.

**3. Co-Management possibilities:**

In most CAMPFIRE areas co-operative management has remained between central government and local government. This means that communities have yet to be fully

involved in the joint management of the wildlife resource as well as in its utilisation. Although communities in Guruve district have been involved in deciding on utilisation of the income from CAMPFIRE and the selection of tenders, management and utilisation of wildlife remains the prerogative of the Rural District Council officials and safari operators. The fact that income generation within CAMPFIRE is derived from tourism makes the direct involvement of the communities difficult due to the complex procedures of marketing hunts. Furthermore, given that most if not all the hunters are foreigners, direct involvement of communities becomes difficult. Murombedzi (1990) noted, that the fact that most of the income comes from safari hunters makes them more powerful than the community members in terms of decision-making.

It has been realised in the Guruve district experience that socio-economic and socio-cultural perspectives of the target communities determine the CAMPFIRE model that is adopted. One major issue is the perception of individuals on the benefits they derive from wildlife management relative to costs. Such perceptions are inevitably influenced by other sources of income for the same households as compared to income derived from wildlife. The dilemma in this type of analysis is that it is difficult to compare benefits from a communal resource with benefits from an individually owned one.

**4. Institutional Matters:**

Murombedzi (1991b) argues that although CAMPFIRE attempted to devolve control over wildlife revenues to local authorities, several potential problems were evident from the onset. Firstly, it assumes that producer communities are essentially the wards, yet the wards were not delineated based on access to common natural resources. The local

government structure created in 1984, delineated wards on a demographic basis (a ward constituting 6 villages of approximately 100 households each. Because of this situation, it is likely to be difficult for a ward to evolve coherent user rights and obligations regarding access to and utilisation of wildlife revenues. Where such rights are imposed by outsiders, a ward does not normally have sufficient legitimacy to enforce them. While CAMPFIRE recognises inter-ward differences in terms of wildlife endowment, it does not recognise intra-ward differences which does have a bearing on the distribution of benefits.

### 6.3 Linkage between Benefits and Attitudes towards Wildlife

From the findings of the study, it is difficult to quantify conservation effort since conservation in itself is difficult to define. However, given this limitation, the conclusions are based on the perspectives of the interviewees and from literature on CAMPFIRE. Based on these two parameters, it can be concluded that people are tolerating wildlife more, particularly in areas where returns from wildlife are high. In most CAMPFIRE areas, there have been reports of reduction in poaching activities which is a positive impact of the programme. However, due to anti-poaching operations by the DNPWLM and the police and the army it may not be clear whether this reduction of poaching is a result of fear of apprehension of is a result of changing perceptions towards wildlife. One can only conclude that since communities in CAMPFIRE areas are addressing poaching during their meetings it shows that they now attach a value to wildlife due to the benefits they are receiving. This is particularly true for some wards in Guruve district where benefits from CAMPFIRE have been substantive.

There has been growing interest by more districts to joining CAMPFIRE in recent years including those that do not have wildlife resources. This is demonstrated by the fact that between 1989 and 1996 the number of RDCs joining CAMPFIRE has increased from 2 to 36. There have also been calls to devolve responsibility for managing other resources such as, forestry, and mining using the CAMPFIRE concept. The growing in popularity of CAMPFIRE is an indication that people are benefiting from it. However, what is not yet clear is whether these benefits are translating into conservation and sustainable use of the resources.

## 6.4 Do Incentives work?

Despite the lack of adequate primary data, the study demonstrates certain trends in CAMPFIRE which indicates that incentives can work if they are substantive enough. Within CAMPFIRE, there are three major types of incentives, monetary, meat and empowerment. There are different views as to which of these incentives is more important, since this varies with circumstances of each community. The conclusion one may draw from the literature and the interviews is that different communities value different types of benefits differently, given their particular circumstances. Unless the revenues from wildlife are translated into disposable individual or household benefits, decisions on wildlife/livestock options will always be skewed towards livestock options even in situations where it is apparent that the wildlife options are collectively more beneficial. Given the current structure of household income, individual/household benefit is therefore a major factor in determining incentives for the sustainable management of wildlife in the communal areas of Zimbabwe. Community projects although highly valued

in areas where the need if greatest, they are still regarded as a government responsibility rather than a CAMPFIRE benefit.

## 6.5 Accept or Reject the Hypothesis?

Based on the current findings, the study can only accept the fact that if communities can derive some benefit from a natural resource they will have positive attitudes towards that resource. What may not be obvious is whether the positive attitudes will necessarily translate into conservation of the resource and how to effectively measure such a linkage. On a theoratical level, this can be a valid conclusion, but this has not been evident in practical terms from the study. The linkage between benefits and conservation effort is very complex, particularly in the absence of standardized measure of conservation effort and lack of accurate ecological data to make monitoring possible. In a general sense therefore, there may be a relationship between benefits and conservation but this relationship is not simple. The hypothesis, therefore, can be neither accepted nor rejected.

## 6.6 Policy Recommendations

The following recommendations are derived from the above conclusions:

### 6.6.1 Diversification of Revenue Base

As CAMPFIRE spreads to more districts, some without substantial wildlife resources, the need to diversify to other resources has become urgent. More income generating projects including *masau* (wild fruit) sale, commercial use of bamboo (plant used for making baskets and for poles), *murara* (basket making fibre) and *mupani* poles (indigenous

timber). Through capacity building effort of CCG members, communities have knitted themselves into democratic natural resources management structures at lower levels of local government. This has given the communities the capacity to decide what natural resource management projects they go into, how the revenue should be distributed. Training is ongoing in areas like wildlife counts and quota setting as well as institutional building for sustainable use of natural resources.

There is now greater opportunity to broaden CAMPFIRE into other natural resources other than wildlife. RDCs such as Nkayi, Mazowe, Nyanga, Chikomba and Hwedza, for example do not have wildlife resources. Their CAMPFIRE activities could be based on ecotourism and capacity building among the people. It is also important to maintain the momentum in capacity building for local communities in CAMPFIRE so that sustainability can be maintained at community level. An accelerated policy reform to enhance holistic resource management must be undertaken at all levels.

### 6.6.2 Promotion of Meat Cropping

Given the scarcity of meat in the communal areas, it is worthwile to investigate the issue of meat as an important incentive within the CAMPFIRE programme. Since meat is highly valued by local communities, there may be need for a comprehensive study on cropping as a form of sustainable utilisation of wildlife.

### 6.6.3 Effective Participation of Producer Communities

Producer communities must have full control of the revenue derived from wildlife utilisation and should participate in management and utilisation of wildlife. The

government should facilitate the development and/or strengthening of appropriate institutions at local level for resource management and utilization. Training programmes should be designed for institutional as well as individual capacity building. The legal devolution of authority to local level institutions will also facilitate meaningful community participation.

The programmes run by the Zimbabwe Trust and the Department of National Parks and Wildlife Management particularly on democracy and participatory approaches should continue in order to enhance the participation by communities in CAMPFIRE. Participation of local community members in wildlife management decision-making should be facilitated and should be linked to the devolution of responsibility for wildlife management to the ward and village level.

### 6.6.4 Specifying Property Rights

Property rights determine who should receive benefits and/or pay the costs of the property owned. Unspecified property rights create the basis for open access and chaos. Wildlife should no longer be viewed as a free good but as a resource like cattle. The government should specify rights and obligations for local communities for wildlife so that they can identify with both the costs and benefits of the resource.

### 6.6.5 Facilitate Devolution

Government should clearly spell out the requirements and specify the rights and obligations of Rural District Councils towards the devolving of authority and responsibility for wildlife management and utilization to the ward and village levels. Another way of improving the

involvement of community level institutions is to provide Rural District Councils with guidelines for working out co-operative management agreements with Ward and Village Wildlife Committees. Devolution should include appropriate training and institutional strengthening at the grassroot level.

### 6.6.6 Strengthen Monitoring

A data base and comprehensive monitoring system of the biological, ecological, and environmental substrate of the CAMPFIRE areas is recommended. There is need to collect information on wildlife populations, rates of harvest and habitat area and conditions. Documentation of indegenous knowledge systems can also be useful. Improved data gathering on trophy quality, elephant numbers will improve wildlife management. The sustainability of CAMPFIRE will depend on the sustainable use of the resources.

### 6.6.7 Distribution of benefits to be clearly spelt out

CAMPFIRE association should come up with a clear policy for revenue distribution and develop a mechanism for enforcement. The Association should also ensure that there is transparency within RDCs in terms of sale of hunts and distribution of revenue.

### 6.6.8 Strengthen Advocacy for CAMPFIRE

The CAMPFIRE Association must continue to network at all levels to ensure that the principle of sustainable use is well understood. Greater public awareness should be the focus for information dissemination. Stakeholders in CAMPFIRE should continue to dialogue on the issue of local participation and benefits to local communities.

Communities should be made to realise that the management of natural resources is not only an ecological issue but also an economic imperative.

### 6.7 Opportunities for further studies

The study revealed that there are still many aspects of CAMPFIRE that need to be evaluated. One area is a benefit-cost analysis of CAMPFIRE with proper valuing of the costs and benefits. A number of studies have identified the costs and benefits of CAMPFIRE, but no proper costing of these have been done making a benefit cost analysis impossible. A benefit cost analysis will make it easier to determine whether or not CAMPFIRE benefits can serve as an incentive for natural resources management. Obviously, as demonstrated in this study, there are other factors or incentives that may encourage local communities to conserve natural resources like sense of ownership, participation in decision making and partnership agreements. The difficulty with these other benefits is how to reduce them into monetary values to facilitate the cost-benefit analysis.

Another area that requires study is the whole question of measuring conservation effort and to link this effort with benefits received from CAMPFIRE. There is need to develop some measurable indicators to measure conservation effort. Establishing the link requires a comprehensive survey of rural communities to find out whether they see the link. Another approach is to survey different wards one with high CAMPFIRE incomes, one with medium and another with low incomes. One can then compare the level of conservation in these three wards and see if there are any linkages.

After discussion with the District Council officials, it was agreed that the best research results could be achieved through the selection of the three wards. These wards could be selected based on the level of success in attaining the objectives of CAMPFIRE including the level of conservation linked to the benefits derived from the programme. The suggested wards for future research are, from most successful to the least successful: Kanyurira, Chitsungo and Matsiwo. One representative village from each of the three wards could be surveyed. Each village is estimated to have about 100 to 150 inhabitants.

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Appendix A

**Interviews of Key Informants**

Interviews were conducted with people identified as key informants who are directly or indirectly involved with the CAMPFIRE Project. The following key informants were interviewed:

- The CAMPFIRE co-ordinator in the Department of National Parks and Wildlife Management (Mr. Kawadza);

- The Deputy Director of the CAMPFIRE Association (Mr. Kasere);

- The District Administrator for Guruve District (Mr. Zisani);

- Chairman of Masoka Ward Wildlife Committee (Mr. Chinhema);

- District Natural Resources Officer for Guruve (Mr. Jasemin)

- Chairman of the Centre for Applied Social Sciences at the University of Zimbabwe (Mr. C. Nhira).

- Zimbabwe Trust representative

- A representative of World Wide Fund for Nature (WWF) (Mr. Irvine Bond)

**Interview Questions for key informants**

1. What is the average income from agriculture in Guruve district?

2. What is the average family income from CAMPFIRE projects?

3. What community projects were funded through CAMPFIRE?

4. How much meat has been distributed to the local communities ?

5. Of the above three types of benefits which one is valued most?

6. Cropping for meat has proved uneconomic. What does this mean and whose decision is this?

7. What would be considered as the highest household income from CAMPFIRE in all districts?

8. Can you say there is any relationship between the economic benefits and conservation effort? Explain.

9. Do you think there is any threshold of benefits that leads to increased conservation effort?

10. Can you discern any linkages between participation or lack of in the management of wildlife resources under CAMPFIRE and conservation effort?

11. Can you describe the level of participation of community people in the management and utilization of wildlife in CAMPFIRE.

12. Do you have any suggestions as to how this participation or involvement of local communities could be improved?

13. Do you think the CAMPFIRE project can be sustainable? Explain your reasons for saying that.

| GURUVE DISTRICT | | | | | | | 1995 Hunting Season | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Approximate value of quota: | | US$: 462,685<br>Z$: 3,886,554 | | | | 454,335<br>3,816,414 |
| Species | Population Estimates | | | Previous Quotas | | | Permitted Offtake (1995) | | Quota to be allocated among the following uses: (Choice of allocation to be made by RDC) | | | | |
| | Communal Area | Parks & Other | Total | 1992 | 1993 | 1994 | Quota | Percent | Trophy | PAC | Cropping | Other | Total |
| Elephant bull | 2,150 | 0 | 2,150 | 12 | 16 | 18 | 18 | 0.8% | | | | | |
| Elephant cow | 2,150 | 0 | 2,150 | 0 | 4 | 56 | 72 | 3.3% | | 6 | | | |
| Buffalo bull | 3,210 | 0 | 3,210 | 92 | 105 | 97 | 102 | 3.2% | | | | | |
| Buffalo cow | 3,210 | 0 | 3,210 | 26 | 30 | 40 | 40 | 1.2% | | | | | |
| Lion | 100 | 0 | 100 | 8 | 7 | 8 | 4 | 4.0% | | | | | |
| Lioness | 100 | 0 | 100 | 5 | 4 | 0 | 0 | 0.0% | | | | | |
| Leopard | 450 | 0 | 450 | 17 | 22 | 24 | 24 | 5.3% | | | | | |
| Hyaena | 310 | 0 | 310 | 16 | 7 | 16 | 13 | 4.2% | | | | | |
| Hippopotamu | 350 | 0 | 350 | 8 | 4 | 9 | 7 | 2.0% | | | | | |
| Giraffe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | | | | | |
| Crocodile | 900 | 0 | 900 | 10 | 5 | 16 | 13 | 1.4% | | | | | |
| Roan | 50 | 0 | 50 | 0 | 0 | 20 | 10 | 20.0% | | | | | |
| Sable | 500 | 0 | 500 | 8 | 12 | 10 | 12 | 2.4% | | | | | |
| Eland | 200 | 0 | 200 | 4 | 4 | 4 | 4 | 2.0% | | | | | |
| Kudu | 600 | 0 | 600 | 12 | 13 | 13 | 15 | 2.5% | | | | | |
| Kudu cow | 600 | 0 | 600 | 0 | 4 | 6 | 8 | 1.3% | | | | | |
| Nyala | 10 | 0 | 10 | 0 | 0 | 0 | 1 | 10.0% | | | | | |
| Bushbuck | 1,050 | 0 | 1,050 | 25 | 21 | 31 | 31 | 3.0% | | | | | |
| Waterbuck | 450 | 0 | 450 | 4 | 8 | 7 | 10 | 2.2% | | | | | |
| Reedbuck | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | | | | | |
| Wildebeeste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | | | | | |
| Tsessebe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | | | | | |
| Zebra | 250 | 0 | 250 | 2 | 2 | 6 | 8 | 3.2% | | | | | |
| Bushpig | 600 | 0 | 600 | 12 | 16 | 12 | 12 | 2.0% | | | | | |
| Warthog | 1,300 | 0 | 1,300 | 47 | 42 | 42 | 42 | 3.2% | | | | | |
| Impala male | 4,600 | 0 | 4,600 | 122 | 132 | 107 | 107 | 2.3% | | | | | |
| Impala femal | 4,600 | 0 | 4,600 | 30 | 35 | 37 | 27 | 0.6% | | | | | |
| Duiker | 650 | 0 | 650 | 23 | 23 | 23 | 16 | 2.5% | | | | | |
| Steenbok | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | | | | | |
| Klipspringer | 350 | 0 | 350 | 6 | 9 | 9 | 9 | 2.6% | | | | | |
| Grysbok | 550 | 0 | 550 | 23 | 23 | 23 | 16 | 2.9% | | | | | |
| Honey badge | 175 | 0 | 175 | 0 | 2 | 3 | 3 | 1.7% | | | | | |
| Civet | 525 | 0 | 525 | 2 | 3 | 3 | 10 | 1.9% | | | | | |
| Serval | 175 | 0 | 175 | 0 | 3 | 3 | 3 | 1.7% | | | | | |
| Jackal | 500 | 0 | 500 | 6 | 5 | 10 | 10 | 2.0% | | | | | |
| Wild cat | 350 | 0 | 350 | 0 | 3 | 4 | 4 | 1.1% | | | | | |
| Genet | 545 | 0 | 545 | 3 | 4 | 5 | 8 | 1.5% | | | | | |
| Porcupine | 250 | 0 | 250 | 2 | 8 | 10 | 10 | 4.0% | | | | | |
| Spring hare | 100 | 0 | 100 | 0 | 5 | 5 | 5 | 5.0% | | | | | |
| Baboon | 8,000 | 0 | 8,000 | 180 | 140 | 105 | 60 | 0.8% | | | | | |
| Vervet monke | 3,000 | 0 | 3,000 | 75 | 50 | 25 | 25 | 0.8% | | | | | |
| Guinea fowl | 11,000 | 0 | 11,000 | 420 | 425 | 425 | 325 | 3.0% | | | | | |
| Francolin | 11,000 | 0 | 11,000 | 420 | 425 | 425 | 325 | 3.0% | | | | | |
| Sandgrouse | 11,000 | 0 | 11,000 | 120 | 125 | 275 | 175 | 1.6% | | | | | |
| Doves | 30,000 | 0 | 30,000 | 700 | 700 | 1,000 | 700 | 2.3% | | | | | |
| Ducks/geese | 2,200 | 0 | 2,200 | 60 | 150 | 125 | 125 | 5.7% | | | | | |

**GURUVE DISTRICT** — **1995 Hunting Season**

**Dande and Guruve North (Area 1)**

Approximate value of quota: US$: 230,780 | 229,430; Z$: 1,938,552 | 1,927,212

| Species | Population Estimates | | | Previous Quotas | | | Permitted Offtake (1995) | | Quota to be allocated among the following uses: (Choice of allocation to be made by RDC) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Communal Area | Parks & Other | Total | 1992 | 1993 | 1994 | Quota | Percent | Trophy | PAC | Cropping | Other | Total |
| Elephant bull | 900 | | 900 | 5 | 7 | 7 | 7 | 0.8% | | | | | |
| Elephant cow | 900 | | 900 | 0 | 2 | 27 | 35 | 3.9% | | 3 | | | |
| Buffalo bull | 2,000 | | 2,000 | 50 | 65 | 60 | 65 | 3.3% | | | | | |
| Buffalo cow | 2,000 | | 2,000 | 20 | 15 | 25 | 25 | 1.3% | | | | | |
| Lion | 40 | | 40 | 4 | 3 | 4 | 2 | 5.0% | | | | | |
| Lioness | 40 | | 40 | 3 | 2 | 0 | | 0.0% | | | | | |
| Leopard | 200 | | 200 | 8 | 10 | 12 | 12 | 6.0% | | | | | |
| Hyaena | 200 | | 200 | 12 | 3 | 12 | 6 | 3.0% | | | | | |
| Hippopotamu | 300 | | 300 | 6 | 2 | 8 | 5 | 1.7% | | | | | |
| Giraffe | 0 | | 0 | | | | 0 | 0.0% | | | | | |
| Crocodile | 500 | | 500 | 5 | 2 | 8 | 5 | 1.0% | | | | | |
| Roan | | | 0 | | | | | 0.0% | | | | | |
| Sable | 250 | | 250 | 2 | 6 | 6 | 6 | 2.4% | | | | | |
| Eland | 100 | | 100 | 2 | 2 | 2 | 2 | 2.0% | | | | | |
| Kudu | 300 | | 300 | 5 | 6 | 6 | 8 | 2.7% | | | | | |
| Kudu cow | 300 | | 300 | | 2 | 0 | 2 | 0.7% | | | | | |
| Nyala | 10 | | 10 | | | | 1 | 10.0% | Trial quota (please report back) | | | | |
| Bushbuck | 500 | | 500 | 15 | 10 | 15 | 15 | 3.0% | | | | | |
| Waterbuck | 200 | | 200 | 1 | 4 | 3 | 5 | 2.5% | | | | | |
| Reedbuck | | | 0 | | | | | 0.0% | | | | | |
| Wildebeeste | 0 | | 0 | | | | | 0.0% | | | | | |
| Tsessebe | | | 0 | | | | | 0.0% | | | | | |
| Zebra | 150 | | 150 | 2 | 1 | 4 | 6 | 4.0% | | | | | |
| Bushpig | 100 | | 100 | 4 | 6 | 4 | 4 | 4.0% | | | | | |
| Warthog | 500 | | 500 | 20 | 20 | 20 | 20 | 4.0% | | | | | |
| Impala male | 3,000 | | 3,000 | 60 | 85 | 60 | 60 | 2.0% | Suggest 30 used for hunting club | | | | |
| Impala femal | 3,000 | | 3,000 | | 20 | 20 | 10 | 0.3% | | | | | |
| Duiker | 250 | | 250 | 15 | 15 | 15 | 8 | 3.2% | | | | | |
| Steenbok | | | 0 | | | | | 0.0% | | | | | |
| Klipspringer | 200 | | 200 | 3 | 6 | 6 | 6 | 3.0% | | | | | |
| Grysbok | 250 | | 250 | 15 | 15 | 15 | 8 | 3.2% | | | | | |
| Honey badger | 100 | | 100 | 0 | 1 | 1 | 1 | 1.0% | | | | | |
| Civet | 100 | | 100 | 0 | 1 | 1 | 1 | 1.0% | | | | | |
| Serval | 100 | | 100 | 0 | 1 | 1 | 1 | 1.0% | | | | | |
| Jackal | 200 | | 200 | 3 | 3 | 4 | 4 | 2.0% | | | | | |
| Wild cat | 100 | | 100 | 0 | 1 | 1 | 1 | 1.0% | | | | | |
| Genet | 20 | | 20 | 0 | 1 | 2 | 2 | 10.0% | | | | | |
| Porcupine | 100 | | 100 | 1 | 4 | 4 | 4 | 4.0% | | | | | |
| Spring hare | | | 0 | | | | | ERR | | | | | |
| Baboon | 1,000 | | 1,000 | 60 | 50 | 50 | 5 | 0.5% | | | | | |
| Vervet monke | 1,000 | | 1,000 | 20 | 10 | 10 | 10 | 1.0% | | | | | |
| Guinea fowl | 5,000 | | 5,000 | 200 | 200 | 200 | 100 | 2.0% | | | | | |
| Francolin | 5,000 | | 5,000 | 200 | 200 | 200 | 100 | 2.0% | | | | | |
| Sandgrouse | 5,000 | | 5,000 | 50 | 50 | 200 | 100 | 2.0% | | | | | |
| Doves | 10,000 | | 10,000 | 400 | 400 | 500 | 200 | 2.0% | | | | | |
| Ducks/geese | 1,000 | | 1,000 | 0 | 50 | 50 | 50 | 5.0% | | | | | |

**GURUVE DISTRICT** — **1995 Hunting Season**

**Guruve South (Area 2)**

| Approximate value of quota: | US$: | 147,485 | 145,185 |
|---|---|---|---|
| | Z$: | 1,238,874 | 1,219,554 |

| Species | Population Estimates | | | Previous Quotas | | | Permitted Offtake (1995) | | Quota to be allocated among the following uses: (Choice of allocation to be made by RDC) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Communal Area | Parks & Other | Total | 1992 | 1993 | 1994 | Quota | Percent | Trophy | PAC | Cropping | Other | Total |
| Elephant bull | 750 | | 750 | 5 | 7 | 7 | 4 | 0.5% | Interchangable with Guruve East | | | | |
| Elephant cow | 750 | | 750 | | 2 | 27 | 35 | 4.7% | | 3 | | | |
| Buffalo bull | 1,200 | | 1,200 | 30 | 38 | 35 | 35 | 2.9% | | | | | |
| Buffalo cow | 1,200 | | 1,200 | 6 | 15 | 15 | 15 | 1.3% | | | | | |
| Lion | 50 | | 50 | 3 | 3 | 3 | 1 | 2.0% | | | | | |
| Lioness | 50 | | 50 | 2 | 2 | | | 0.0% | | | | | |
| Leopard | 200 | | 200 | 8 | 10 | 10 | 10 | 5.0% | | | | | |
| Hyaena | 100 | | 100 | 3 | 3 | 3 | 6 | 6.0% | | | | | |
| Hippopotamu | 50 | | 50 | 2 | 2 | 1 | 2 | 4.0% | | | | | |
| Giraffe | | | 0 | | | | | 0.0% | | | | | |
| Crocodile | 200 | | 200 | 4 | 2 | 4 | 4 | 2.0% | | | | | |
| Roan | 50 | | 50 | | | 20 | 10 | 20.0% | Live capture by special arrangement with DNPW | | | | |
| Sable | 250 | | 250 | 6 | 6 | 4 | 6 | 2.4% | | | | | |
| Eland | 100 | | 100 | 2 | 2 | 2 | 2 | 2.0% | | | | | |
| Kudu | 250 | | 250 | 6 | 6 | 6 | 6 | 2.4% | | | | | |
| Kudu cow | 250 | | 250 | | 2 | 6 | 6 | 2.4% | | | | | |
| Nyala | | | 0 | | | 0 | 0 | 0.0% | | | | | |
| Bushbuck | 500 | | 500 | 9 | 10 | 15 | 15 | 3.0% | | | | | |
| Waterbuck | 250 | | 250 | 3 | 4 | 4 | 5 | 2.0% | | | | | |
| Reedbuck | | | 0 | | | | | 0.0% | | | | | |
| Wildebeeste | | | 0 | | | | | 0.0% | | | | | |
| Tsessebe | | | 0 | | | | | 0.0% | | | | | |
| Zebra | 100 | | 100 | | 1 | 2 | 2 | 2.0% | | | | | |
| Bushpig | 300 | | 300 | 6 | 6 | 6 | 6 | 2.0% | | | | | |
| Warthog | 750 | | 750 | 25 | 20 | 20 | 20 | 2.7% | | | | | |
| Impala male | 1,500 | | 1,500 | 60 | 45 | 45 | 45 | 3.0% | | | | | |
| Impala fema | 1,500 | | 1,500 | 30 | 15 | 15 | 15 | 1.0% | | | | | |
| Duiker | 300 | | 300 | 6 | 6 | 6 | 6 | 2.0% | | | | | |
| Steenbok | | | 0 | | | | | 0.0% | | | | | |
| Klipspringer | 150 | | 150 | 3 | 3 | 3 | 3 | 2.0% | | | | | |
| Grysbok | 300 | | 300 | 8 | 8 | 8 | 8 | 2.7% | | | | | |
| Honey badger | 50 | | 50 | | 1 | 1 | 1 | 2.0% | | | | | |
| Civet | 400 | | 400 | 2 | 1 | 1 | 8 | 2.0% | Result of rodent plague | | | | |
| Serval | 50 | | 50 | | 1 | 1 | 1 | 2.0% | | | | | |
| Jackal | 200 | | 200 | 3 | 1 | 2 | 2 | 1.0% | | | | | |
| Wild cat | 200 | | 200 | 0 | 1 | 2 | 2 | 1.0% | | | | | |
| Genet | 500 | | 500 | 3 | 1 | 2 | 5 | 1.0% | Result of rodent plague | | | | |
| Porcupine | 100 | | 100 | 1 | 2 | 4 | 4 | 4.0% | | | | | |
| Spring hare | | | 0 | | | | | 0.0% | | | | | |
| Baboon | 5,000 | | 5,000 | 60 | 30 | 50 | 50 | 1.0% | | | | | |
| Vervet monke | 1,000 | | 1,000 | 30 | 10 | 10 | 10 | 1.0% | | | | | |
| Guinea fowl | 5,000 | | 5,000 | 200 | 200 | 200 | 200 | 4.0% | | | | | |
| Francolin | 5,000 | | 5,000 | 200 | 200 | 200 | 200 | 4.0% | | | | | |
| Sandgrouse | 5,000 | | 5,000 | 50 | 50 | 50 | 50 | 1.0% | | | | | |
| Doves | 10,000 | | 10,000 | 200 | 200 | 400 | 400 | 4.0% | | | | | |
| Ducks/geese | 1,000 | | 1,000 | 50 | 50 | 50 | 50 | 5.0% | | | | | |

**GURUVE DISTRICT** — **1995 Hunting Season**

**Guruve East (Area 3)**

| Approximate value of quota: | | | |
|---|---|---|---|
| US$: | 84,420 | 79,720 |
| Z$: | 709,128 | 669,648 |

| Species | Population Estimates | | | Previous Quotas | | | Permitted Offtake (1995) | | Quota to be allocated among the following uses: (Choice of allocation to be made by RDC) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Communal Area | Parks & Other | Total | 1992 | 1993 | 1994 | Quota | Percent | Trophy | PAC | Cropping | Other | Total |
| Elephant bull | 500 | 0 | 500 | 2 | 2 | 4 | 7 | 1.4% | Interchangeable with Guruve South | | | | |
| Elephant cow | 500 | 0 | 500 | | | 2 | 2 | 0.4% | | 2 | | | |
| Buffalo bull | 10 | | 10 | 2 | 2 | 2 | 2 | 20.0% | | | | | |
| Buffalo cow | 10 | | 10 | | | | | 0.0% | | | | | |
| Lion | 10 | | 10 | 1 | 1 | 1 | 1 | 10.0% | | | | | |
| Lioness | 10 | | 10 | | | | | 0.0% | | | | | |
| Leopard | 50 | | 50 | 1 | 2 | 2 | 2 | 4.0% | | | | | |
| Hyaena | 10 | | 10 | 1 | 1 | 1 | 1 | 10.0% | | | | | |
| Hippopotamus | | | 0 | | | | | 0.0% | | | | | |
| Giraffe | | | 0 | | | | | 0.0% | | | | | |
| Crocodile | 200 | | 200 | 1 | 1 | 4 | 4 | 2.0% | | | | | |
| Roan | 0 | | 0 | | | | | 0.0% | | | | | |
| Sable | | | 0 | | | | | 0.0% | | | | | |
| Eland | | | 0 | | | | | 0.0% | | | | | |
| Kudu | 50 | | 50 | 1 | 1 | 1 | 1 | 2.0% | | | | | |
| Kudu cow | 50 | | 50 | | | | | 0.0% | | | | | |
| Nyala | | | 0 | | | | | 0.0% | | | | | |
| Bushbuck | 50 | | 50 | 1 | 1 | 1 | 1 | 2.0% | | | | | |
| Waterbuck | | | 0 | | | | | 0.0% | | | | | |
| Reedbuck | | | 0 | | | | | 0.0% | | | | | |
| Wildebeeste | | | 0 | | | | | 0.0% | | | | | |
| Tsessebe | | | 0 | | | | | 0.0% | | | | | |
| Zebra | | | 0 | | | | | 0.0% | | | | | |
| Bushpig | 200 | | 200 | 2 | 4 | 2 | 2 | 1.0% | | | | | |
| Warthog | 50 | | 50 | 2 | 2 | 2 | 2 | 4.0% | | | | | |
| Impala male | 100 | | 100 | 2 | 2 | 2 | 2 | 2.0% | | | | | |
| Impala femal | 100 | | 100 | | | 2 | 2 | 2.0% | | | | | |
| Duiker | 100 | | 100 | 2 | 2 | 2 | 2 | 2.0% | | | | | |
| Steenbok | | | 0 | | | | | 0.0% | | | | | |
| Klipspringer | | | 0 | | | | | 0.0% | | | | | |
| Grysbok | | | 0 | | | | | 0.0% | | | | | |
| Honey badger | 25 | | 25 | | | 1 | 1 | 4.0% | | | | | |
| Civet | 25 | | 25 | | 1 | 1 | 1 | 4.0% | | | | | |
| Serval | 25 | | 25 | | 1 | 1 | 1 | 4.0% | | | | | |
| Jackal | 100 | | 100 | | 1 | 4 | 4 | 4.0% | | | | | |
| Wild cat | 50 | | 50 | | 1 | 1 | 1 | 2.0% | | | | | |
| Genet | 25 | | 25 | | 2 | 1 | 1 | 4.0% | | | | | |
| Porcupine | 50 | | 50 | | 2 | 2 | 2 | 4.0% | | | | | |
| Spring hare | 100 | | 100 | | 5 | 5 | 5 | 5.0% | | | | | |
| Baboon | 2,000 | | 2,000 | 60 | 60 | 5 | 5 | 0.3% | | | | | |
| Vervet monke | 1,000 | | 1,000 | 25 | 30 | 5 | 5 | 0.5% | | | | | |
| Guinea fowl | 1,000 | | 1,000 | 20 | 25 | 25 | 25 | 2.5% | | | | | |
| Francolin | 1,000 | | 1,000 | 20 | 25 | 25 | 25 | 2.5% | | | | | |
| Sandgrouse | 1,000 | | 1,000 | 20 | 25 | 25 | 25 | 2.5% | | | | | |
| Doves | 10,000 | | 10,000 | 100 | 100 | 100 | 100 | 1.0% | | | | | |
| Ducks/geese | 200 | | 200 | 10 | 50 | 25 | 25 | 12.5% | | | | | |

APPENDIX D

## PHYSICAL CHARACTERISTICS OF CAMPFIRE DISTRICTS: 1993

| District | Total Area of districts (hectares) | Area of C/FIRE Wards (hectares) | C/FIRE Wards Area as % of district | Total Number of Wards | Wards with CAMPFIRE | C/FIRE Wards as % of total wards | District Population (persons) | Average District Pop density | C/FIRE Wards Population (persons) | Population Density (Persons/km2) | Population C/FIRE Wards (households) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Beitbridge | 677,500 | 333,100 | 49.2% | 14 | 6 | 43% | 80,946 | 11.9 | 25,985 | 7.8 | 4,675 |
| 2. Binga | 777,000 | 415,385 | 53.5% | 21 | 11 | 52% | 87,802 | 11.3 | 35,969 | 8.7 | 6,517 |
| 3. Bulalima Mangwe | 686,600 | 133,100 | 19.4% | 24 | 7 | 29% | 156,641 | 22.8 | 35,829 | 26.9 | 5,101 |
| 4. Gaza Khomanani | 530,600 | | 0.0% | 32 | | 0% | 183,226 | 34.5 | | | |
| 5. Gazaland | 297,300 | 52,132 | 17.5% | 29 | 2 | 7% | 336,693 | 113.3 | 11,491 | 22.0 | 2,356 |
| 6. Gokwe | 1,356,100 | 474,841 | 35.0% | 42 | 10 | 24% | 403,136 | 29.7 | 106,771 | 22.5 | 16,630 |
| Gokwe North | | 250,100 | | | 4 | | | | 48,154 | 19.3 | 8,696 |
| Gokwe South | | 224,800 | | | 6 | | | | 58,617 | 26.1 | 9,684 |
| 7. Guruvé | 555,100 | 408,917 | 73.7% | 20 | 8 | 40% | 135,637 | 24.4 | 35,779 | 8.7 | 7,313 |
| 8. Hurungwe | 492,900 | 236,428 | 48.0% | 19 | 6 | 32% | 246,902 | 50.1 | 62,695 | 26.6 | 11,504 |
| 9. Hwange | 397,500 | 195,100 | 49.1% | 14 | 5 | 36% | 71,707 | 18.0 | 20,149 | 10.3 | 3,077 |
| 10. Muzarabani | 277,400 | 167,400 | 60.3% | 16 | 10 | 63% | 69,851 | 25.2 | 38,156 | 22.8 | 7,549 |
| 11. Nyaminyami | 363,100 | 361,100 | 99.4% | 12 | 12 | 100% | 27,717 | 7.6 | 25,653 | 7.1 | 5,350 |
| 12. Tsholotsho | 738,200 | 475,500 | 64.4% | 20 | 7 | 35% | 118,828 | 16.1 | 40,091 | 8.4 | 16,460 |
| TOTAL | 7,149,300 | 3,253,003 | 45.5% | 263 | 84 | 32% | 1,919,289 | 26.8 | 439,788 | 13.6 | 90,862 |

*Produced by WWF*