

Empowering rural communities to manage wildlife: lessons learned from WWF's Support to CAMPFIRE Project 1993-2002

Lilian Goredema¹, Russell Taylor¹, Ivan Bond² and Sonja Vermeulen²

2005

¹WWF-SARPO, PO Box CY1409, Causeway, Harare, Zimbabwe

²IIED, 3 Endsleigh Street, London WC1H 0DD, United Kingdom



This report was developed within the initiative "Sharpening policy tools for marginalised managers of natural resources" coordinated by the International Institute for Environment and Development (IIED) with funding from the Netherlands Ministry of Foreign Affairs (DGIS) and the German Federal Ministry for Economic Cooperation (BMZ).



1. Introduction

The purpose of this paper is to describe and analyse a technological approach – as opposed to an institutional approach – to empowering rural communities to manage wildlife and associated resources. The analysis is based on lessons from 10 years of the WWF Support to CAMPFIRE (SupCAMP) Project. These lessons apply widely to communities and co-management initiatives around the world.

2. Background and context

2.1 CAMPFIRE

The history of formalised community conservation in Zimbabwe is recent. Policy and legislative changes in the 60s and 70s (Child 1995) paved the way for CAMPFIRE: the Communal Areas Management Programme for Indigenous Resources (Martin 1986). CAMPFIRE's philosophy is sustainable management of wildlife by local people for local people, and its key mechanism is legal devolution of rights over wildlife away from central government towards local government. The beginning of CAMPFIRE was devolution of user-rights to large-scale commercial farmers in 1975, amended in 1982 to give similar rights, referred to as Appropriate Authority, to Rural District Councils (RDCs), the local authority at district level for "communal areas" (owned by the state but lived on and managed by local communities). Conceptually, CAMPFIRE is more of a rural development strategy than a biodiversity conservation strategy.

National parks and other protected areas cover 50,000 km² or 13% of Zimbabwe's land area, situated mostly at lower altitudes with poor rainfall. About 80,000 km² of communal areas are adjacent to or near protected areas. CAMPFIRE was implemented in the late 1980s in these districts where wildlife was abundant and human population density low (Figure 1; Table 1). Of course, not all communities in a district are "producer communities" who support wildlife populations.

Initially, the implementation of CAMPFIRE was guided by a loose consortium of government departments, NGOs and the University of Zimbabwe's Centre for Applied Social Sciences, collectively known as the CAMPFIRE Collaborative Group. Implementation was possible only after a strategic compromise between advocates of full decentralisation, notably members of the CCG, and central government (Murphree and Jones 2001).

The most important example of this tension is the way that wildlife revenues are allocated between producer communities and Rural District Councils. Central government's stalling on decentralisation means that Rural District Councils with

Appropriate Authority are not legally obliged to pass on revenue to the actual producer communities. Guidelines recommend that 50% of revenues should go back to communities – the actual figure has averaged 46% (Table 2). Significantly, some 14% (US\$3 million) remained unallocated over the past 13 years, and has probably gone to activities unrelated to wildlife and CAMPFIRE (Bond 2001). By not providing for further devolution of user rights to communities, the CAMPFIRE concept has ultimately limited community participation and empowerment. Communities cannot participate in deciding who gets a wildlife concession, the value of the concession or how the revenue is used.

Table 1. Characteristics of 13 selected CAMPFIRE districts in Zimbabwe

District	Total area (km ²)	Area under CAMPFIRE (km ²)	CAMPFIRE Area as %	Population density (persons/km ²)	Elephant density (no/(km ²))
Beitbridge	12935	4595	36	6.7	0.03
Binga	12308	7930	64	9.7	0.63
BulalimaMangwe	12574	1530	12	23.4	0.26
Chiredzi	17748	3633	20	12.9	0.34
Chipinge	5223	408	8	28.2	0.12
Gokwe N	7359	2523	34	22.4	0.21
Gokwe S	11138	1308	12	21.4	
Guruve	7810	4215	54	12.1	0.85
Hurungwe	19895	2793	14	9.2	0.76
Hwange	29934	4021	13	13.7	0.18
Muzarabani	4322	2540	59	15.4	0.12
Nyaminyami	6327	3532	56	6.9	0.96
Tsholotsho	7823	5354	68	8.7	0.33
Total or average	155396	44382	Total 35 Average 29	14.6	0.4
<i>Source:</i> Taylor and Mackie (1997), Taylor (1999) and CAMPFIRE Monitoring & Evaluation Database, WWF SARPO Harare					

Figure 1: Map of Zimbabwe showing agro-ecological zones and CAMPFIRE districts

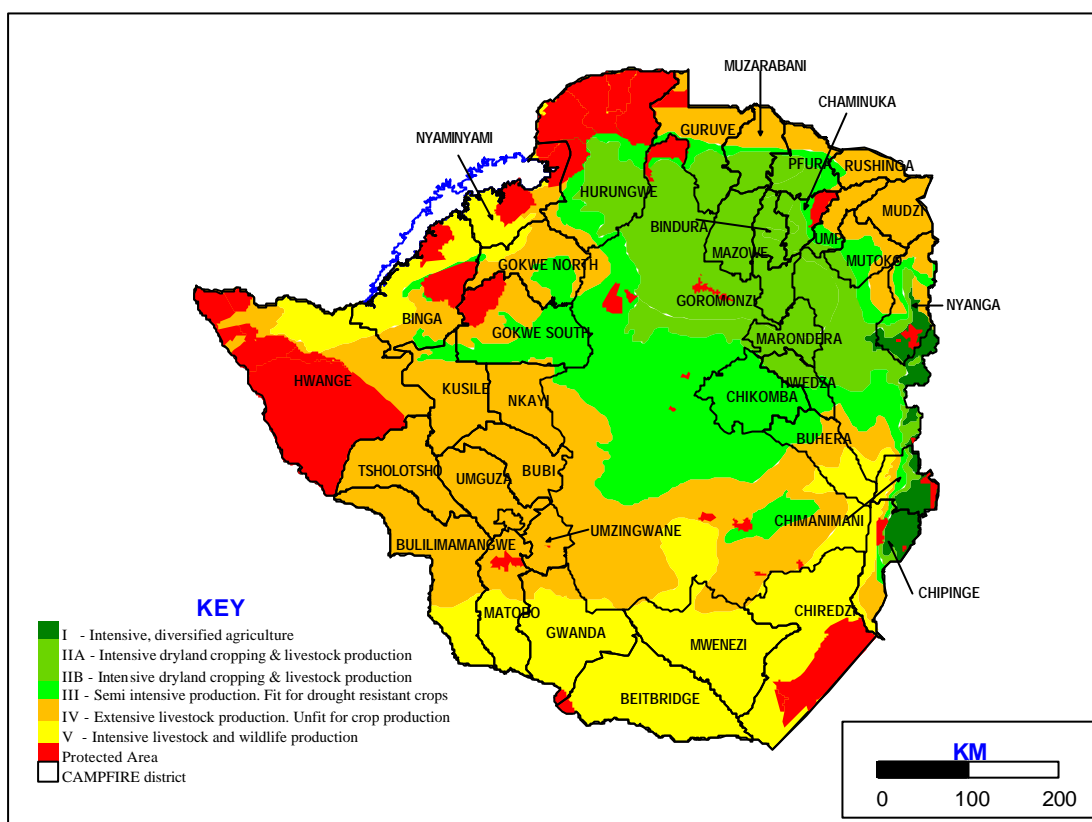


Table 2. Allocation of revenue earned from wildlife by Rural District Councils 1989-2001

	Disbursed to communities	District level wildlife management	Council levy	Other uses	Not allocated
Guideline %	50%	35%	15%		
1989-2001 (USD)	9,890,392	4,080,194	2,506,885	680,491	3,125,382
Actual %	46%	20%	15%	5%	14%

Source: Bond (2001) and CAMPFIRE Monitoring & Evaluation Database, WWF SARPO Harare

2.2 The WWF Support to CAMPFIRE project

As well as control over revenues, Rural District Councils retain the authority to plan, negotiate and manage though they can devolve this to communities. But neither communities nor RDCs have the capacity to plan, negotiate and manage wildlife effectively. The CAMPFIRE Collaborative Group recognised from the beginning that if communities were to fulfil their potential as natural resource managers and assume real proprietorship, then real support and capacity-building were necessary. WWF was charged with overseeing the Support to CAMPFIRE project (SupCAMP) to provide local people with technical skills and confidence to manage wildlife effectively (Table 3). The project, funded initially by NORAD, the Norwegian Agency for Development Cooperation and subsequently by both NORAD and WWF-Norway, developed into a long-term initiative over 10 years. This paper discusses outputs 1-3 of SupCAMP.

Table 3. SupCAMP strategy

Project strategy: Natural resource management support to CAMPFIRE	
Development objective	Species and habitat DIVERSITY and PRODUCTIVITY maintained under communal management
Immediate objective	LOCAL people in communal areas BENEFIT from and CONTRIBUTE to the management of natural resources
Outputs	Resource surveys and wildlife related land use plans produced using appropriate participatory techniques Appropriate natural resource management options identified and implemented in selected areas Resource monitoring techniques developed at local (ward) level Impact monitoring and assessment of CAMPFIRE areas in place Effective project management in place

SupCAMP approach and methodology

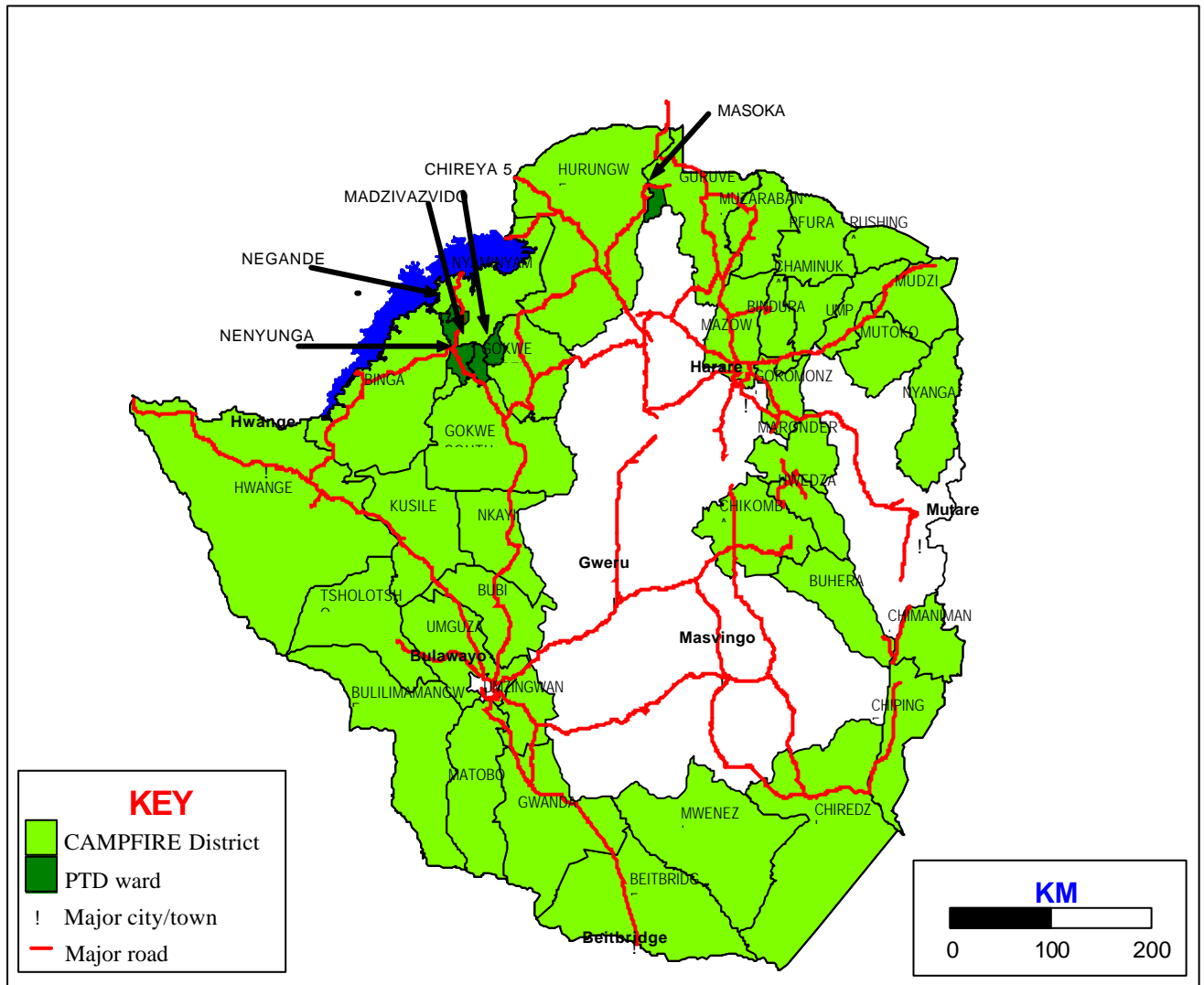
Formally, SupCAMP had two administrative and funding phases (Phase I 1994-1998 and Phase II 1998-2002). In practice, there were three overlapping phases.

SupCAMP phase one: participatory technology development (PTD)

This field-based pilot phase focused on developing natural resource management options with selected rural communities in five wards among three districts, Guruve, North Gokwe and Nyaminyami in the northern Zambezi Valley of Zimbabwe (Figure 2). The options were developed using an interactive and iterative methodology called Participatory Technology Development (PTD), a process-oriented methodology that brings together local indigenous technical knowledge (including both knowledge and experiential skills – see Kothari et al. 1997) of communities with the scientific and technical knowledge of outside specialists, “to design, implement, test, monitor and refine locally applied

management activities” (Sutherland et al. 1998; Taylor and Bond 2000; Taylor 2001).

Figure 2: SupCAMP PTD sites

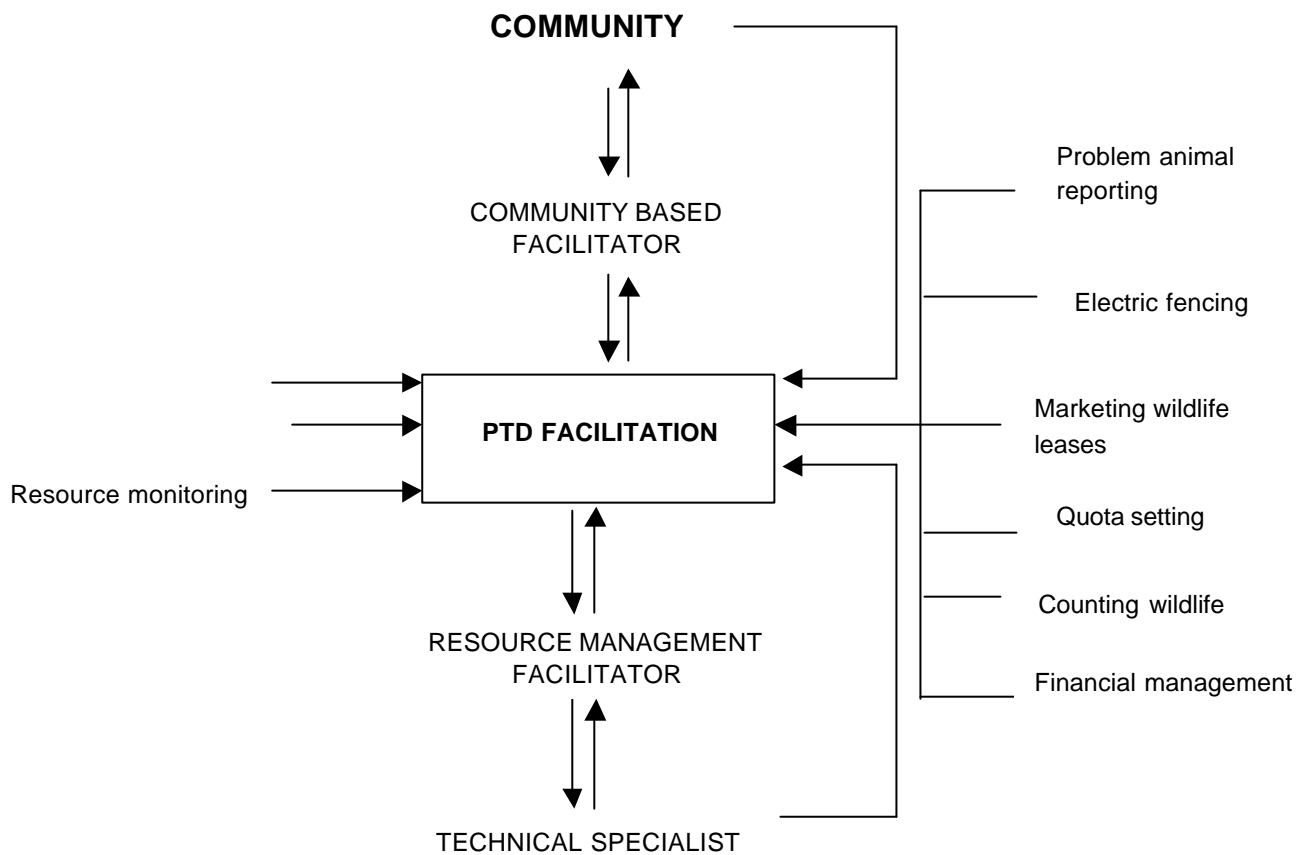


The PTD process used to develop wildlife management tools followed these principles:

- There is an identified and articulated need for the tool
- The tool is appropriate to the producer community’s needs, desires and natural resource base
- Application of the tool is cost-effective in terms of human and financial resources
- The tool can be transferred to other sites and resources
- The tool is simple, rigorous, repeatable and science-based, but links to local knowledge and incorporates adaptive management principles

With each community SupCAMP designed, tested, refined and eventually implemented every wildlife management tool. Outside technical specialists visited the community when needed, and worked with and through resident and local facilitators (Figure 3).

Figure 3. Institutional structure of SupCAMP at local level



In each of the five SupCAMP wards, the project employed a local part-time community-based facilitator, selected by his/her community, with in-depth knowledge of community aspirations and dynamics. Also resident at each site was an external resource management facilitator to work closely with the community to facilitate the design and application phases of the tool. The process to develop the tools required patience and time. Iterative testing and adaptation of the tools incurred greater financial and other costs than would be expected in a conventional project cycle. Community members incurred numerous transaction costs in sessions with technical experts, with facilitators and among themselves (Box 1).

Box 1. Community transaction costs

In one pilot area Masoka, wildlife committee members spent time working with the resident facilitator during the rainy (farming) season. By the end of the year, the committee members had started to compensate for their own lost farming time by allocating a percentage of revenue to "sitting allowances" for attending meetings – without wider community approval.

SupCAMP phase two: packaging the tools

An external review of SupCAMP attributed progress and community development in the selected project sites to the project's focus on participation, local ownership and robust natural resource management tools (Pangeti and Hansson 1997). In response, the CAMPFIRE Association requested that the SupCAMP tools be transferred to all major wildlife producing districts through a training programme.

The PTD process produced user-friendly manuals and materials targeted primarily at producer communities. Once a tool had been tried out to a satisfactory stage at pilot sites, the methodology involved was documented, initially as a guideline manual, in an iterative process. Twelve overall manuals, termed the WWF Wildlife Management Series, were developed. Including other aids, the final package of tools comprised generic guideline manuals, site-specific ward-level manuals, toolboxes, trainers' manuals and a selection of simulation tools and games (Table 4).

SupCAMP phase three: training

The project aimed to transfer knowledge and skills associated with specific tools to producer communities at ward, district and national levels. SupCAMP used the packaged tools through a training programme structured into three components:

- *Skills and knowledge training at producer community level* aimed to impart hands-on skills and knowledge to resource managers at community level. Skills, such as fence repair, were emphasised. Community-based groups and traditional leaders were included in the training to give them an understanding of how their community resource managers operated and enable them to provide organisational support such as timely salary payments.
- *Knowledge training through general exposure and awareness at district level* aimed to impart knowledge on a particular tool to CAMPFIRE managers, coordinators and policy-makers at district level. Training provided an understanding of each tool to facilitate effective communication between producer communities and regulatory authorities.
- *Training of trainers at district and national levels* aimed to train district-level personnel, mostly CAMPFIRE coordinators, were as trainers in the wildlife management tools. This enabled them to train producer communities. We

emphasised knowledge and skills associated with the tool, plus participatory training skills, to develop a core group of competent trainers for sustainability and wide transfer of the tools during and after the project. The project also provided a limited amount of training at national level to other key CAMPFIRE stakeholders, primarily to provide awareness and knowledge of the tools.

Table 4. SupCAMP products and phases

Phase I PTD	Phase II Packaging products	Means of development	Format	Phase III Delivery of training	Target groups
Field-based facilitation at selected pilot sites Robust, transferable tools for NRM options developed with producer communities using PTD	WWF Wildlife Management Series Guideline Manuals	Project team develops iterative drafts - internal & external reviews ACTION Magazine (Environmental Education NGO) for artwork and text editing Final reviews by producer communities and other key stakeholders Production	Landscape format printed manual with stiff card cover, colour coded and numbered sequentially	Simple dissemination Exposure and awareness Use as a training aid	Sub-district level producer communities District level coordinators and trainers National level awareness and exposure for CAMPFIRE Association, CBNRM practitioners, other NGOs and Government agents
	Sub district ward level manuals	Framework, text and diagrams developed with community in facilitated workshops Final document	English and vernacular Photocopied with locally designed cover/artwork	Site specific documentation of a tool as an aid to organisational and institutional memory	Selected producer communities
	Toolboxes	As for Guideline Manual	As for Guideline Manual	Detailed documentation on how to use a certain tool to complement Guideline Manual	Trainers and facilitators
	Trainers manuals	Project team supported by training specialist	Loose leaf files in a ring binder allowing addition/deletion of material	Documents suggested training methods for a particular tool	Trainers
	Simulation tools and games	Various but with emphasis on simplicity	Various e.g. CAMPFIRE game; aerial survey game; trophy measurement	Simplify complex concepts	Mostly producer communities but also other stakeholders

3. Review of selected natural resource management tools

This section reviews three wildlife management tools developed by SupCAMP to assess how far they succeeded in their aim of empowering producer communities to manage wildlife and related financial, human, infrastructural resources. The review is based on a model of empowerment shown in Table 5. In this model, tools that meet the criteria of being needed, appropriate to that need and cost-effective will lead to improved skills, knowledge and application in the short-term. Skills here refer to technical “hands-on” abilities while knowledge refers to an understanding of purpose, principles and institutional arrangements. Together, skills and knowledge allow greater and more effective application of knowledge and skills – the highest level of empowerment in this technical typology. These important outcomes in terms of empowerment lead in the longer term to easier transfer, wider adoption and better chances of sustainability in the use of a tool.

The success of tools is also dependent on macro-level social, economic and political factors. Assuming a supportive macro-environment, adoption of the tools in the long-term should allow a shift in power relations, allowing marginalised communities greater space in the power arena within the existing legal framework. We consider here whether the SupCAMP tools contributed to a positive change in power relations within CAMPFIRE. Of the many tools developed and used by SupCAMP, three sets are considered here: problem animal management, participatory quota setting and financial management.

Table 5. Model of how management tools can lead to empowerment through skills, knowledge and application

Criteria	Short term outcomes (empowerment framework)	Long term outcomes
There was a need for the tool	Leads to improved: ≡	Leads to: ≡
The tool was appropriate	Skills Knowledge	Higher and more rapid rate of adoption Greater likelihood of sustainability
The tool was cost effective	Application	Easier transferability

3.1 Problem animal management

Human-wildlife conflict mitigation

Wild animals damage crops and property, injure or kill livestock, and sometimes kill people too. Conflict between people and wildlife is a major constraint to the success of CBNRM programmes in southern Africa, especially when the very same animals that are problematic are also potential money earners (Taylor 1994). Thus for wildlife producer communities, wildlife management involves a lot of investment in managing human-wildlife conflict.

SupCAMP used a three-phase approach to develop appropriate solutions at local levels:

- Generating adequate information on human-wildlife conflict to enable the local authority and communities to make appropriate decisions to minimise the conflict
- Identification and development of possible options to address the problem
- Application and monitoring of the selected option

This process led to three general tools that producer communities could apply locally: problem animal reporting, electric fence projects and electric fence maintenance.

Problem animal reporting

The project designed and tested a system for reporting problem animal incidents involving both Rural District Councils and communities. This resulted in the problem animal reporting tool in which the RDC, communities and the private sector safari operator worked together to collect, collate and analyse relevant information on problem animal incidents in a simple and easily recorded format. Minimum data sets, compiled by problem animal reporters, included the date and time, location, nature of the incident and its seasonal frequency and extent. From such a reporting system, planning and management options for minimising problem animal activities could be selected and built into an overall ward and district level management system.

Evaluation of problem animal reporting

This methodology was very much needed, appropriate and cost-effective, especially for administration by the RDC for administrative purposes and for assisting decision-making. The techniques for gathering and recording information were simple, transferable and adaptable to site-specific needs. In one area, Gokwe North, former problem animal reporters trained new problem animal reporters using the Wildlife Management Series guideline manual. A disadvantage was that communities had to select and pay problem animal reporters but delays in payments were a disincentive to continue. Furthermore, if data collected were not analysed by problem animal reporters and with

community leaders, the system would collapse. The level of adoption has been variable but overall the contribution to problem animal management has been effective.

Electric fence projects

CAMPFIRE was in its early days when the SupCAMP Project started up. The only way to establish interest at community level was real progress on managing human-wildlife conflict. Electric fences were an obvious solution, although their efficacy was subsequently brought into question (Hoare and Booth, 1997) with the evolution of alternative and complimentary methods (Osborn and Parker, 2003) SupCAMP developed and tested a tool for communities to plan an electric fence project. This tool has had a relatively short life in CAMPFIRE for two reasons:

- Once a fence has been planned and constructed, use of the tool is largely complete unless fence re-construction or modifications are planned;
- The relevance of electric fencing has become increasingly redundant, at least in the context of CAMPFIRE. It has been applied in Mozambique, however, where the Guideline Manual has been translated into Portuguese.

Evaluation of electric fence projects

The methodology required good facilitation of cost-benefit analysis, which invariably was beyond the grasp of semi-literate and semi-numerate communities. This questions its appropriateness. There was limited consultation and interaction with communities in the development of the tool. Although it met an important need at the time, the cost-effectiveness of electric fencing as a strategic tool in mitigating human-wildlife conflict has become questionable, so that longer-term, widespread adoption has been limited. This however, is not necessarily a reflection on the Electric Fence Projects tool itself.

Electric fence maintenance

Communities needed to maintain newly built electric fences. This tool dealt with technical skills for maintenance plus knowledge of social and institutional requirements. For example, local leaders invariably failed to appreciate the crucial link between spare parts requested by fence minders and the effectiveness of the fences. Although communities employed fence minders, the Rural District Council decided when communities received wildlife revenues so that delays in payment of fence minders and purchase of fence spares resulted in both technical and governance aspects being affected. The tool gave guidance on dealing with these tricky inter-institutional problems.

Evaluation of electric fence maintenance

From the aspect of technical skills, the electric fence maintenance tool was needed, appropriate, transferable and cost-effective. Trained fence minders could then train others, with or without using the manual. Three communities came to write their own fence maintenance manuals. However over time, evaluations of community managed electric fences revealed high and unsustainable transaction costs of maintenance for communities.

Problem animal management: reflections on empowerment

Assessments at the three SupCAMP pilot sites showed that the problem animal management set of tools resulted in an increase in knowledge, enabling producer communities to negotiate with the local authority, private sector operator and regulatory authorities with confidence. Once a problem animal reporting structure was in place, communities had a measure of control in terms of what they could and could not do. Only relevant components of the methodology were used in different sites – communities applied “adaptive management”. For example, the Masoka community in Guruve developed a problem animal reporting system different to that among communities in Gokwe North (Box 2).

Box 2. Problem animal reporting systems for Guruve and Gokwe North

Gokwe North employed problem animal reporters who worked at community level to receive problem animal incidents reports, and reacted to these either directly or through the central Rural District Council problem animal control unit.

In Masoka, Guruve, community game guards and the ward wildlife committee received reports on problem animals and reported these to the RDC problem animal control unit, 100 km away, through radio. The unit would take several hours or days to react. This system did not work and the ward committee changed its reporting strategy and reported directly to the local private safari operator.

The administration of certain problem animal management tools required external or independent facilitation to address power relations within the community. For example, if fence minders made requests or observations to the effect that the local natural resource management committee had delayed with payments and purchases, this was taken as a threat to the committee’s power. Communities’ power was also limited intentionally or otherwise by the local RDC, which controlled the timing of revenues to communities.

Generally, there has been much improvement in knowledge of problem animal management among CAMPFIRE communities due to the tools. Application of knowledge and associated skills has been variable depending on the continued need of specific tools.

3.2 Participatory quota setting

More than 90% of the revenue earned in CAMPFIRE comes from sport hunting (Bond 1994; Bond 2001; WWF 2003a). This provides the primary incentive for producer communities to participate in wildlife management. Offtake quotas (number of animals which can be removed from a population without biologically damaging that population) for harvesting wildlife, or quota setting, are an effective means of linking benefit to investment in management. Wildlife moves over wide distances unpredictably and thus is best managed under a common property regime with participatory management (Taylor and Bond 2000).

Before CAMPFIRE, ecologists from the central Parks and Wildlife Management Authority determined and allocated offtake quotas based mostly on aerial survey information, itself limited in a number of ways (Taylor 2001). Occasionally safari operators and Rural District Councils might be involved but there was little or no consultation with producer communities (Rigava and Dimbi 1999). Quota setting by communities was a new challenge.

A quota setting tool that could simply and effectively engage all stakeholders evolved incrementally over the years. Approaches were iteratively tested and adapted until a framework emerged which finally gained acceptance by the Parks and Wildlife Management Authority (PWMA) as a standard procedure for community involvement and participation, together with other stakeholders. SupCAMP developed a manual linked to a toolbox of activities for training communities. WWF recruited a full-time quota-setting trainer and facilitator.

Quota setting process

Participatory quota setting begins at community level (Figure 5). A workshop brings together key stakeholders to determine the quota. Stakeholders include the producer community, safari operator, RDC, PWMA and occasionally, independent observers or technical advisors. The process uses information and data from aerial surveys and other sources, such as community ground counts, community observations, the safari operator's observations on hunting performance or "catch effort" and trophy quality as indexed by horn size, trophy weights and other body measurements. Together these provide a set of indices to develop and establish a quota using triangulation (Table 6), building on the previous season's quota.

Training plays an important role in the triangulation process as it allows all the stakeholders to understand the process and the various pieces of information, how they are derived and how they are used. This allows all stakeholders, especially communities to speak the same language with the others in the decision making process. Hence quota setting is demystified and becomes transparent. The involvement of an independent facilitator, at least initially, is

important, and particularly if building consensus on the agreed quota is likely to be contentious.

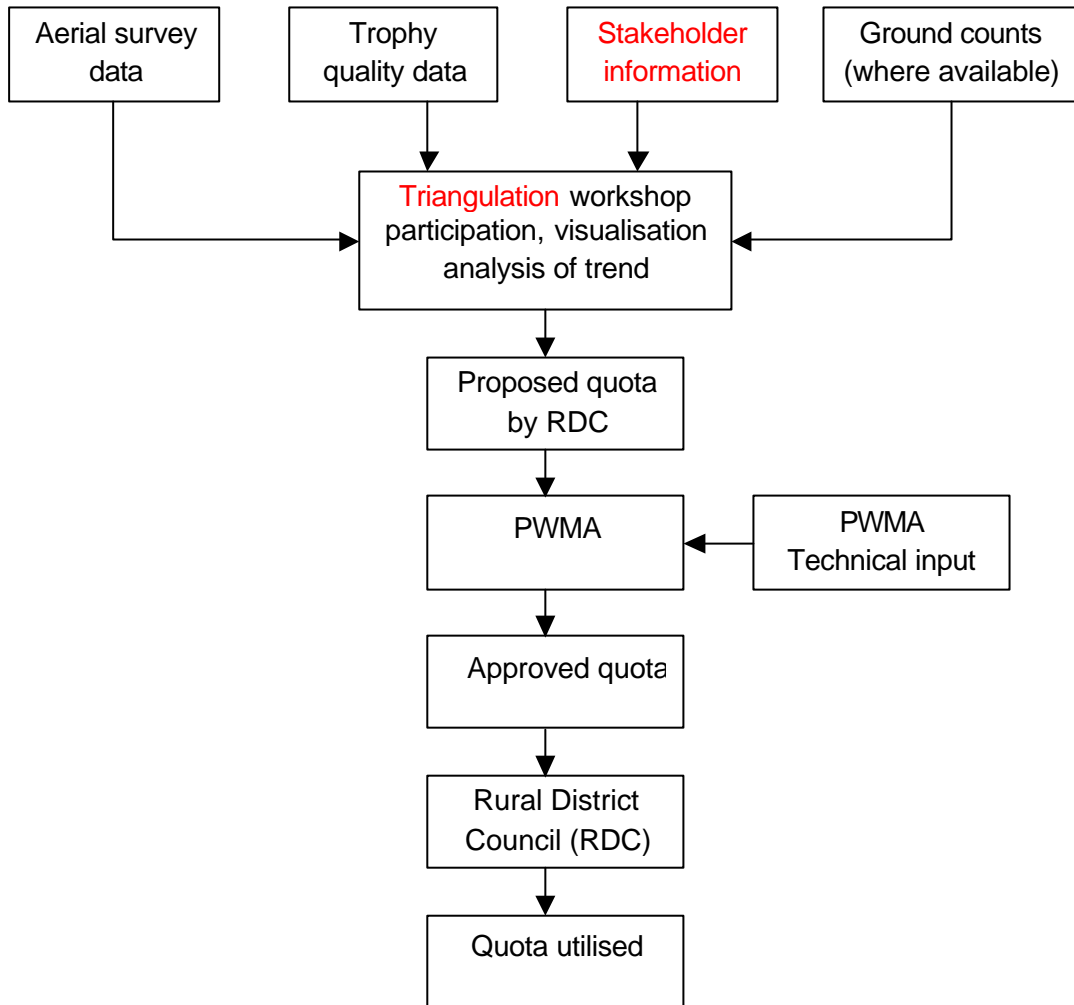


Figure 5. The quota setting process

Table 6. Example of triangulation chart for elephant bulls

	2002 Quota	Aerial Survey	Trophy quality	Ground counts	Safari Operator	Community poaching information	2003 Quota
Elephant bulls	20	↕↔	↔↑	↑	↑	↕	20

Evaluation of quota setting

The quota setting methodology provided a unique opportunity to link local technical knowledge with science based knowledge in a transparent, participatory way to determine a product (the offtake quota) that was of value to all stakeholders. The deliberate involvement of PWMA to ensure their support, understanding and approval of the process, as well as the intensive district, ward and partner organisation training, ensured that the skills and knowledge of the tool could be applied sustainably into the future. Continued networking between the SupCAMP team and PWMA resulted in the eventual acceptance of the methodology (Rigava and Dimbi 1999) so that RDCs who continue to set quotas using this approach have little or no adjustments made to their quota following submission to the PWMA for approval.

Participatory quote setting: reflections on empowerment

Initially, the Parks and Wildlife Management Authority had all the power and control in terms of setting quotas, even following granting of Appropriate Authority to RDCs. The participatory quota setting tool provided a means through which communities gained a share of power. The perceived importance of quota setting meant high demand for facilitation services at all levels (Jones and Murphree 2004). In terms of governance, it provided communities with an agreed framework with which to query any major adjustments to their proposed quota. The quota setting process provides communities an important incentive to monitor wildlife populations through counting, anti-poaching patrol reports and problem animal reporting.

The quota setting tool has arguably resulted in as near equal power relations among stakeholders as has been achieved to date in any natural resource management activity globally (Taylor 2001; Ludwig et al. 1993; Figure 4). By applying appropriate knowledge and skills, communities demonstrated to PWMA and RDCs that they could manage their wildlife (through providing useful and appropriate information for quota setting). They demonstrated that they could understand the ecological aspects of quota setting by analysing available information to reach a decision. With this demonstrated, PWMA and RDCs could move aside and allow communities to have a share of the quota-setting decision-making power, hence increasing their sphere of influence (Box 3).

Box 3. Gokwe North Quota Setting and community involvement

The Gokwe North Quota setting workshop takes place every year after the six communities around the wildlife area have spent three days doing transect ground counts. Without this important trend information, the RDC would not be able to set the quota. Hence communities have a measure of control in the process.

3.3 Financial management

Money earned from wildlife is sent from Rural District Councils to producer community wards on an annual basis. Between districts, the amount of revenue devolved to wards is a function of wildlife abundance and adherence to the CAMPFIRE revenue guidelines. Within districts, the revenue earned by wards depends on the definition of producer communities (Bond 2001). There are also important differences in the degree of control and access that communities have over their revenue. In some districts, revenue is transferred to wards in lump sums and thereafter was in their control. In others, revenue was allocated in tranches during the year, or held in a central account which wards were able to draw upon. To help communities best manage their finances, SupCAMP developed tools for financial management.

Financial management training

Initial participatory assessments showed that previous training received in financial management was either inappropriate or insufficient. Consequently, there was a high level of financial mismanagement of wildlife revenue by ward officials as well as some fraud. This was of particular concern to RDC and Ministry of Local Government officials who often placed conditions of financial accountability upon wards that greatly exceeded their own organisational standards.

The project chose to develop innovative training materials for financial management because existing options for training in book-keeping systems were limited. Moreover, conventional training in financial management used largely the “chalk and talk” (classroom, teacher and pupil relationship) approach. Effectiveness of these methods was constrained further by the relatively low levels of numeracy and literacy of the participants and the very intensive nature of the training.

The CAMPFIRE game

The CAMPFIRE game is based on the well known board game, Monopoly, contextualised for CAMPFIRE. Instead of dealing in the property market participants trade in wildlife tourism lodges and safari hunting camps. The advantage of the CAMPFIRE game over the “chalk and talk” approach was that it created a simulated environment that allowed each of the participants to develop and practice their skills. The first version of the CAMPFIRE game (Bond 1998) was developed amongst the project’s five pilot wards and updated through more widespread use.

Transformation of the original CAMPFIRE game into the financial management toolkit was an extended process constrained by time, design and material problems. The fully developed toolkit contains:

- CAMPFIRE game (board, icons, dice, rules, cards and play-money)
- Trainers' toolbox of activities
- Financial management manual
- Visual aids for the trainer

A "training of trainers" course in financial management in October 2000 used the CAMPFIRE game. Participants included district training officers, NGO and Government representatives. In 2003 a parallel process was initiated in rural and urban schools. These trials led the Ministry of Education to request development of a schools version of the game.

Evaluation of financial management

Project assessments and the CAMPFIRE financial monitoring data (WWF 2003b) demonstrated a clear need for the development of greater financial management skills at ward level. The principle of wards receiving direct financial benefits and having control over money was under threat from district and local government officials who did not believe that it was being used correctly. The CAMPFIRE Game and its subsequent evolution into the Financial Management Toolkit, was a highly appropriate response, but addressed only one of the problems at ward level. Examples of other key problems that the CAMPFIRE Game could not address included transparency and accountability at ward level, the high turn-over of ward level financial management personnel and the remoteness of many wards from formal financial institutions. Additionally, for optimum effectiveness as a training tool, the CAMPFIRE Game required skilled facilitation. Because a training course took approximately four days, it was expensive to use compared with conventional training approaches.

Although there is little direct evidence, the Financial Management Toolkit appears to be used rarely by districts or those organisations that currently support CAMPFIRE activities. Its adoption was severely constrained when donor and financial support for training within CAMPFIRE ended. Thereafter, most trainers who had been based at district level left for other positions.

Financial management: reflections on empowerment

While the CAMPFIRE Game and its associated products were clearly needed and appropriate to a number of the identified problems, its lack of adoption due to external factors has meant that very little direct empowerment can be attributed to this tool. However, one financial management tool that did find success focussed gave advice on marketing wildlife. This was adopted by various RDCs to improve their wildlife marketing strategy and increase revenues.

4. Lessons from the SupCAMP project

The SupCAMP project assumed that wildlife producer communities were essentially passive participants in CAMPFIRE. The objective of the project was to develop tools to empower wildlife producer communities to actively manage their wildlife resources and the benefits that were derived from them. This raises two key questions:

- 1) How successful was CAMPFIRE at empowering communities to manage their wildlife and natural resources?
- 2) If rural communities did increase their power, to what extent was this a function of the tools developed by the SupCAMP project?

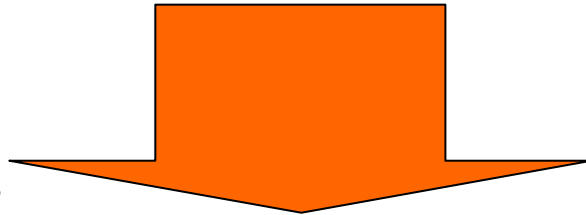
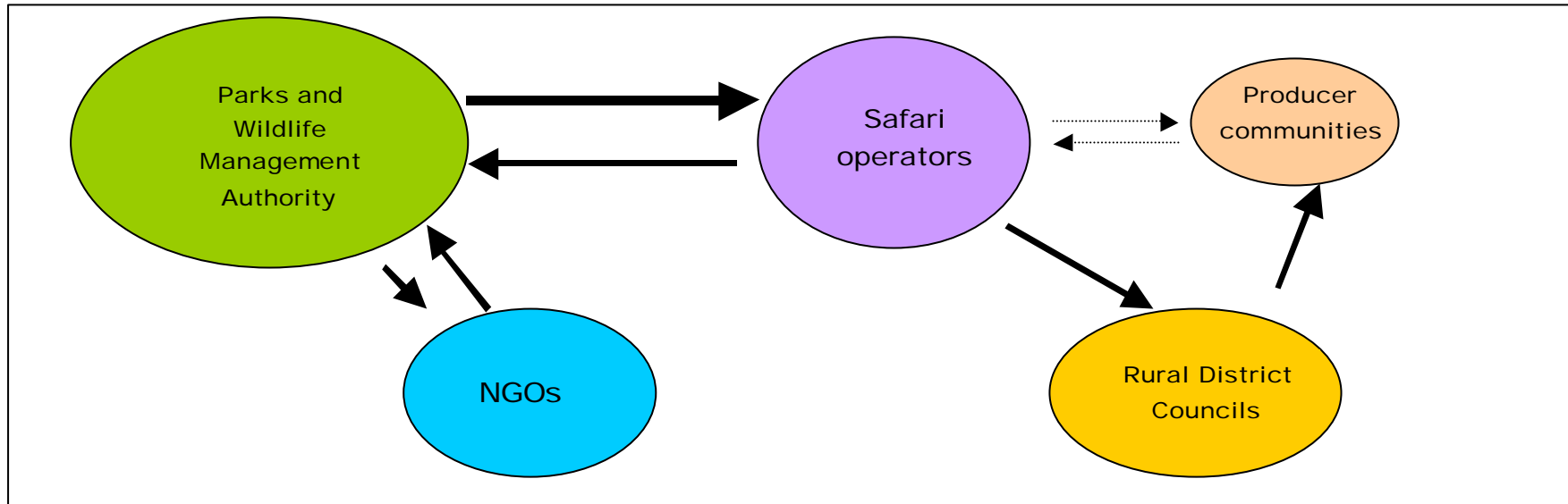
There is no simple answer to either of these questions. Under complex and dynamic conditions, it is tempting to base an analysis on personal anecdotes or site-specific experiences. But extrapolating across the programme might be misleading for the following reasons:

- This review only considers five wildlife-producing communities of which there were more than 100 under 13 Rural District Councils. The number of people in these wards was estimated to be 420,000 on the basis of a the 1992 Government of Zimbabwe census and there were substantial physical, biological political and economic differences among the districts (Bond 2000).
- Between 1989 and 2003, CAMPFIRE was supported by most of the major donor agencies working through government and non-governmental organisations in numerous projects. These organisations invested over US\$40 million in the support of CAMPFIRE.
- Dynamics among the major stakeholders in CAMPFIRE were influential. For example, there was a major power struggle within the Parks and Wildlife Management Authority between supporters and opponents of decentralised wildlife management (Duffy, 2000).

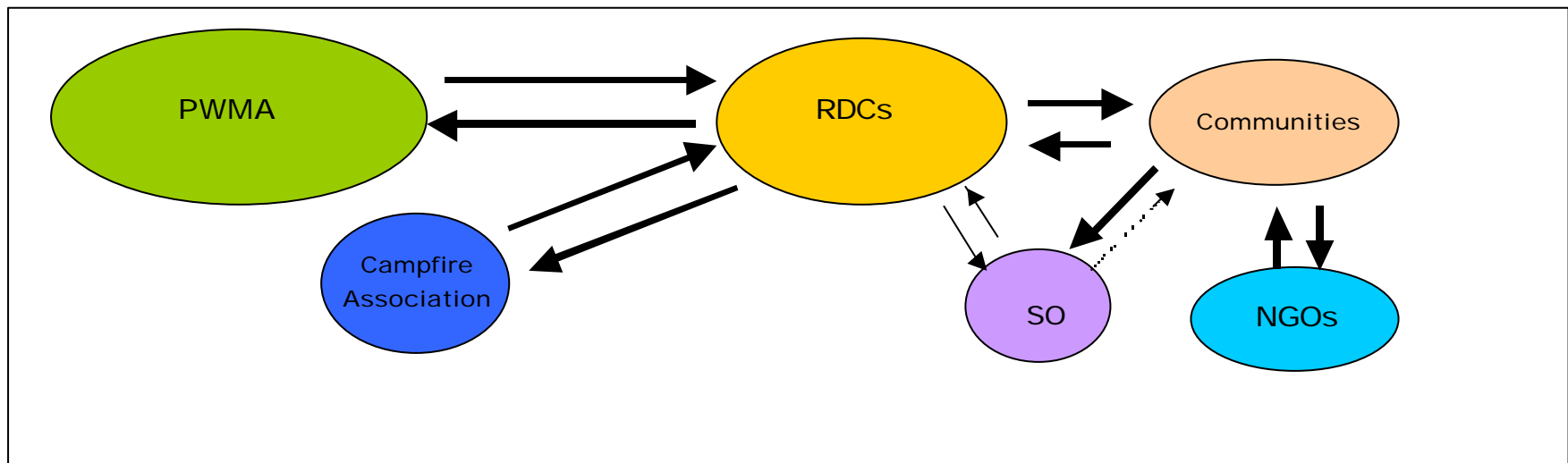
With these caveats in mind, how successful was CAMPFIRE at empowering communities to manage their wildlife and natural resources? At a macro-level, CAMPFIRE did result in a very significant transfer of power over wildlife resources from the state to RDCs wildlife producer communities, NGOs and the private sector operators (Figure 5). Before CAMPFIRE, government kept all the revenue earned from wildlife in the communal lands. Between 1989 and 2001, over US\$10 million was devolved in various ways to wildlife producer communities (WWF CAMPFIRE databases). It is important to remember that before 1989, wildlife management in the communal lands of Zimbabwe was undertaken by central government under legislation that criminalised all forms of wildlife utilisation by communal land residents.

Figure 4: Power relations in CAMPFIRE 1990 and 2003

POWER RELATIONS IN CAMPFIRE 1990



POWER RELATIONS IN CAMPFIRE 2003



However, analysis of quantifiable indicators of empowerment, such as proportion of revenue received, shows that in general producer communities are still relatively weak and unable to demand their share of the wildlife based revenue (Murombedzi 1997; Bond 2000). Similarly, analysis of key decisions such as land-use planning show that in most cases district executive officers led land-use planning process with the objective of maximising wildlife revenue at district level (Bond 2000). On reflection, the greatest gains in power from CAMPFIRE have been made by the RDCs. This is because they are the legal authority for the management of wildlife in the communal lands.

Table 7. Summary of assessment of the three selected SupCAMP tools

Tool	Need	Appropriate	Cost-effective	Adoption	Empowerment
Problem animal reporting	Yes, especially at RDC level	Yes as a monitoring tool	Yes	Variable	Mostly at RDC level
Electric fence projects	Important identified need at the time	Questionable In the overall context of electric fences	Electric fencing <i>per se</i> questionable, not the tool	Very limited but used in Mozambique	Provided community level ownership
Electric fence maintenance	Important identified need	Very appropriate	Yes	Transferable but limited by other transaction costs	Revealed important power relations
Quota setting toolkit	High	Highly appropriate and necessary	Yes although initially it required a full time facilitator	Widespread adoption including by wildlife agencies elsewhere in the region	Reflects a co-management approach which balances power
Financial management toolkit	Clear need	Highly appropriate	Expensive	Severely constrained	Very little because of external factors

How much of the change was due to the tools developed by the SupCAMP Project? Again the scale of CAMPFIRE together with the complex and dynamic context makes this difficult to answer. We have differentiated among three levels of empowerment: knowledge, skills and application of management tools (Table 7). We revisit these here to review empowerment in the different phases of

SupCAMP. The external environment in which the project was functioning is also reviewed as it had an important bearing on the how wildlife producer communities perceived CAMPFIRE. (Figure 4). Producer communities had a greater influence on CAMPFIRE in 2001 than in 1990.

Empowerment during participatory technology development: The first phase of the project worked in three RDCs and five producer communities (Figure 2) with the purpose of developing new tools through participatory technology development (PTD). Knowledge was shared among community representatives, facilitators and the project's technical specialists. The full-time presence of a facilitator within each community meant that a high level of support for transferring knowledge and skills. Even though many of the tools were still under development, the constant back-stopping resulted in a good level of adoption at two of the three sites. At the third site, the very centralised approach of the RDC severely limited the levels of levels of knowledge, skills and final adoption of tools (Pangeti and Hannson 1997). Individual tools met the criteria of need, appropriateness and cost-effectiveness to different extents and delivered different levels of empowerment to different stakeholders (Table 5). When reviewed, the first phase of the project was criticised for being too site-specific, supporting only five producer wards from over 100 wards within CAMPFIRE. Thus the project adopted a more conventional training approach in its second phase.

Empowerment through capacity building: SupCAMP's second phase ran courses for trainers, resource managers and policy makers. The primary aim was to train a cadre of trainers at district level, who could in turn provide training at community level. An independent review found the "training of trainers" courses successful (Zinyemba 2003). But the expected impact of the project was reduced because the trainers did not develop and undertake the expected training within their districts. Their limited activity was attributed to the lack of money and time (Zinyemba 2003). Sample surveys of community level policy makers and resource managers showed SupCAMP's training was considered to be relevant by the participants (range 68-86%, depending on the tools). The statistics were supported by anecdotal evidence of changes that had taken place within wards as a result of the training provided (Zinyemba 2003; Child et al. 2003).

External variables: From 1993 to 2003, the Zimbabwean economy went from a centralised system with low growth, through a period of liberalisation and modest sector-specific growth, to high and then hyper-inflation and real economic contraction. Hyper-inflation and the unpredictable economic climate reduced incentives for communities to manage wildlife. Political changes over the same period are equally important. At the start of SupCAMP, decentralisation and liberalisation were widely accepted policies. The reaction of the government to both political and economic challenges was to return to a highly centralised form of government. From 2000 onwards the opportunity for SupCAMP to genuinely empower wildlife producing communities was severely diminished. But districts

were not and are not homogeneous units of administration. Between districts there were considerable variations in the degree of devolution of wildlife management to producer communities. A key variable affecting decentralisation was the proportion of wildlife revenue to non-wildlife revenue: RDCs that earned a high proportion of revenue from wildlife were less likely to devolve to communities.

5. Transferable lessons from the SupCAMP experience

In terms of total expenditure, the SupCAMP project was a relatively small project compared with some of the larger internationally financed projects that supported CAMPFIRE. Important lessons can be learned from the project because it operated with a consistent objective over an extended period of nearly ten years.

Time and process: The technical approach used in SupCAMP took nearly ten years to develop and produce a portfolio of useful and innovative tools, package these and implement a training programme. Assuming a stable political and economic macro-environment, a third project phase is now needed in which the work of the first two phases can be consolidated and improved – WWF-SARPO continues to receive requests from both RDCs and community-based organisations for technical and other forms of support for their CAMPFIRE activities.

Lesson: The empowerment of rural natural resource managers is a process that requires organisations and donors to commit funding and resources for periods that exceed the conventional duration of a project.

Timing and opportunities: Policy and legislative change in developing countries, and especially in southern Africa, are seldom an on-going process of review and reform (Jones 2004). Rather, change is discrete and often linked to shifts in government – critical opportunities to exploit. Similarly, adoption of tools that support and empower rural communities may also be very dependent on timing. For example, within the SupCAMP Project, quota setting was developed early in CAMPFIRE and SupCAMP when there were real demand and opportunities to influence how quotas were set, and plenty of time ahead to refine tools and training. In contrast, the financial training package was completed only towards the end of the project thus limiting its rate and level of adoption.

Lesson: Organisations and projects that develop tools for natural resource managers should take advantage of emerging opportunities in policy change.

Co-management continuum Natural resource managers are seldom granted absolute control over resources. Where devolution does take place, co-management is a frequent requirement. Thus new tools for community managers

need to be accepted and legitimised by co-managers, usually in government departments. These more powerful co-managers may co-opt tools and support meant for communities. The SupCAMP project tried at all times to focus tools on wildlife producer communities, but the strategy of training a cadre of trainers within the Rural District Councils probably contributed to RDCs accumulating power.

Lesson: Organisations addressing issues of power in natural resource management need to consider how knowledge and skills might affect the power relationships among stakeholders.

Complementary approaches to empowerment: The SupCAMP project used a technical approach to empower rural communities with wildlife resources. This was part of a CAMPFIRE-wide strategy in which other agencies were tasked with supporting the development of community organisations. The technical and organisational approaches to empowering resource managers are complementary. The tools developed by SupCAMP required functional community-based organisations, while community-based organisations will remain passive and not fully empowered if they do not have the knowledge and the skills to manage their natural resources.

Lesson: Genuine empowerment of resource managers requires strategies that support both their organisation and their technical capacity to manage their natural resources in a cohesive and complementary manner.

Adoption, back-stopping and mainstreaming: Natural resource managers are generally risk-averse so are slow to adopt new technology. Tools therefore need to be simple without losing effectiveness. The SupCAMP Project had much higher rates of adoption during the first phase, when resident facilitators supported selected communities. Adoption of tools during the second phase was constrained by the limited technical support and back-stopping that the project could provide to natural resource managers wishing to try and apply the knowledge and skills learned through the conventional training programme. In the long-term, changes in resource management will only be achieved when the tools are accepted and used by all co-managers. This implies that selected tools that have been successful in empowering resource managers must be incorporated into mainstream education and training.

Lesson: Technical approaches to empowering resource managers need to provide levels of support that overcome natural tendencies to resist change. Tools need to be simple and their use supported through training and hands-on technical support. Long-term adoption of successful tools will only be achieved when the tools are widely accepted by stakeholders in the co-management framework and taught in mainstream education and training programmes.

Monitoring changes in power: In theory SupCAMP could monitor impacts of tools on power relations. But relationships between stakeholders are generally extremely complex and vary at different scales, so plenty of time is needed to work out a widely accepted and informative monitoring system.

Lesson: Monitoring approaches and indicators of power need to be agreed with full representation of the perspectives of different stakeholders.

Empowering communities or local authorities: Overall, did CAMPFIRE empower Rural District Councils or community-based organisations? The legislation clearly favoured RDCs and established them as the recipients and gatekeepers of wildlife revenue. An important question for SupCAMP is the degree to which the tools developed either reinforced the already dominant position of the RDC or supported the community-based organisations – or perhaps both. In phase one, many of the tools directly supported the empowerment of community-based organisations by placing them at the centre of management decisions. The second training phase of the project worked directly with RDCs and may have unwittingly provided knowledge and skills to RDCs that allowed them to re-enforce their role as the major beneficiary of CAMPFIRE.

Lesson: Organisations that support community level resource managers need to develop mechanisms that ensure that stakeholders do not co-opt resources meant for target groups.

6. Concluding comments

In southern Africa, financial and economic benefits from wildlife management provide incentives for community-based organisations to manage wildlife and other natural resources. The larger the incentives, it is argued, the greater the likelihood of long-term changes in the way that natural resources are managed. There are always biophysical limits to the financial benefits that can be sustainably generated. These are usually a function of resource abundance that is related to population density and distribution (Bond 2001). Tools that support either the management of the resource base or assist communities develop cohesive and robust organisations are essential to local empowerment. While the financial incentives for change are constrained, opportunities to transfer control and power are often much greater. The more knowledge and skills that can be provided to resource managers the greater their opportunities for gaining power and control over their natural resources.

References

- Bond, I (1994) The importance of sport hunted African elephants to CAMPFIRE in Zimbabwe. *TRAFFIC Bulletin* 14, 117-119.
- Bond I (1998) Understanding market opportunities. PLA Notes. IIED, London.
- Bond, I (2000) CAMPFIRE as a vehicle for sustainable rural development in the semi-arid communal lands of Zimbabwe: incentives for institutional change. D.Phil Thesis, University of Zimbabwe.
- Bond, I (2001) CAMPFIRE and the incentives for institutional change. In: *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation*. (Eds. D. Hulme and M. Murphree). James Currey, Oxford.
- Child, G (1995) *Wildlife and people: The Zimbabwean success*. Wisdom Foundation, New York.
- Child B, Jones B, Mazambani D, Mlalazi A, Moinuddin H (2003). Final Evaluation Report: Zimbabwe Natural Resource Management Programme- USAID/Zimbabwe Strategic Objective No. 1 CAMPFIRE. USAID/CAMPFIRE, Harare.
- Duffy, R (2000). Killing for conservation: wildlife policy in Zimbabwe. James Currey, Oxford, U.K.
- Hoare, R and V. Booth (1998) Wildlife electric fencing projects in Communal Areas of Zimbabwe - current efficacy and future role. Report for World Wide Fund for Nature Southern Africa Programme Office. WWF SARPO & PriceWaterhouseCoopers, P O Box CY 1409 Causeway, Harare, Zimbabwe.
- Jones B.T and Murphree M.W (2004) Community-based natural resource management as a conservation mechanism: lessons and directions . In: *Biodiversity, Rural Development and the Bottom Line: Parks in Transition* (ed. Child B) Earthscan, London.
- Jones B (2004) Synthesis of the current status of CBNRM Policy and legislation in Botswana, Malawi, Mozambique, Namibia, Zambia and Zimbabwe. Consultancy Report for WWF-SARPO, Harare.
- Kothari, A, Anuradha, RV and Pathak, N (1997) Community-based conservation issues and prospects. Regional Workshop on Community based Conservation: Policy and Practice. New Delhi.
- Ludwig D, Hilborn R and Walters C (1993) Uncertainty, Resource Exploitation and Conservation: Lessons from History. *Science* 260, 17-36
- Martin, RB (1986) Communal Areas Management Programme for Indigenous Resources (CAMPFIRE). Unpublished Report, Department of National Parks & Wild Life Management, Harare.
- Murphree, MW and B Jones (2001) The evolution of policy on community conservation in Namibia and Zimbabwe. In: *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation*. (Eds. D. Hulme and M. Murphree). James Currey, Oxford.
- Murombedzi J. C (1997) *Community Wildlife Management in Southern Africa: Malawi, Zambia and Zimbabwe*, paper prepared for IIED study on "Evaluating Eden", IIED, London.
- Osborn, FV and GE Parker (2002) Living with elephants II. A manual. Mid-Zambezi Elephant Project (MZEP). Harare, Zimbabwe. (www.elephantpepper.org)

Pangeti, GN and R Hansson (1997) SupCAMP Support to CAMPFIRE Review. Unpublished Report. Geckoconsult, Harare.

Rigava N and Dimbi L (1999) Wildlife Quota Setting: A CAMPFIRE Case Study. In *proceedings of the Norway /UN Conference on the Ecosystem Approach for Sustainable Use of Biological Diversity*, Trondheim 6-10 September 1999. (Eds. Schen P.J, Sandlund O. T and Strand R). Norwegian Ministry of Environment, Norway

Sutherland A, A Martin and J Salmon (1998) Recent experiences with participatory technology development in Africa: practitioners' review. *Natural Resource Perspectives* 25. ODI, London.

Taylor, RD (1994) Elephant management in the Nyaminyami District , Zimbabwe: turning a liability into an asset. In: *Elephants and Whales: Resources for Whom?* (Eds.MMR Freeman and UP Kreuter). Gordon and Breach, Basel.

Taylor, RD and Mackie, CS (1997) Aerial census results for elephant and buffalo in selected Campfire areas. *CAMPFIRE Association Publication Series* 4, 4-11.

Taylor, RD (1999) Wilderness and the CAMPFIRE Programme: The value of wildlands and wildlife to local communities in Zimbabwe. In: *Proceedings of the Wilderness Management Symposium*, Waterberg Plateau Park, Namibia (Ed.TG Cooper).

Taylor, RD and I Bond (2000) Participatory technology development for community based wildlife management in Zimbabwe: The WWF Support to CAMPFIRE Project. In: *Personal, Societal and Ecological Values of Wilderness*. (Eds. A.E. Watson and G. Alpert). *Proceedings Sixth World Wilderness Congress*, Bangalore, India October 1998. Research, Management and Allocation, Vol II, Proc.RMRS -P-000. Ogden, UT: US Dept. Agriculture, Forest Service, Rocky Mountain Research Station.

Taylor, RD (2001) Participatory natural resource monitoring and management: implications for conservation. In: *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation*.(Eds. D. Hulme and M. Murphree). James Currey, Oxford.

WWF (2003a). Report on the review of sustainable offtake quotas for four key species, WWF, Harare.

WWF (2003b) Report on the testing of the Financial Management Toolkit, WWF FOGS Project, Harare.

Zinyemba A. 2003: Report on the evaluation of WWF – SARPO's natural resource management training for 2000 and 2001 for WWF-SARPO, Harare.