EFFECTIVE MANAGEMENT OF THE PROTECTED AREAS SYSTEM

LIST OF ANNEXES

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ANNEX 1: PROFILE OF THE PROTECTED AREA SYSTEM IN ZAMBIA

PA PROFILE

Zambia's most important categories of protected area are *national park* (NP) and *game management area* (GMA). The 19 NPs in Zambia cover an area of 63,580 km^2, and the 35 GMAs cover 167,557 km^2 – 8.5% and 22.3% of the total land area respectively. Approximately 490 *forest reserves* (FR) also cover large areas (around 75,000 km^2, about 10.2% of the country), but the precise number and area covered is difficult to establish due to frequent de-classification and new additions and the lack of an updated database in the Forest Department (FD). There are four other categories of public-managed PAs: *wildlife sanctuaries* (2 gazetted), *bird sanctuaries* (2 gazetted), *protected fisheries*, *Ramsar sites* (Wetlands of International Importance for Migratory Birds) (2 gazetted) and *Heritage sites*[1]. Other PA categories include *game ranches*, *botanical* and *zoological parks*.

Table 1 - Categories of Protected Areas in Zambia and their stated objectives

Protected Area	No.	Purpose	Act/Policy	Authority
National Parks	19	• For the conservation and enhancement of wildlife ecosystems, biodiversity and of objects of aesthetic, pre-historic, geological, archaeological and scientific interest for the present and future generations. • For the promotion of opportunities for the equitable and sustainable use of special qualities.	Wildlife Act No.10 1998	ZAWA
Game Management Areas	35	• To provide for the sustainable use of wildlife and effective management of the wildlife habitat in communally owned lands.. • To enhance the benefits of GMAs to local communities and to wildlife. • To serve as buffer areas for wildlife species that move outside the NPs. • To provide for the development and implementation of management Plans and involvement of local communities.	Wildlife Act No.10 1998	ZAWA
National Forests	180	• Exclusively for the conservation and development of forests for the purpose of securing supplies of timber and other forest produce. • Protecting watersheds, providing protection against floods, erosion and desiccation. • Maintaining the biodiversity, ecological balance and the flow of rivers as well as cultural values.	Forest Act No.39 1973 Proposed Forest Act 1999	Forestry Dept
Local Forests	310	• For the conservation and development of forests for the purpose of securing supplies of timber. • Affording protection to land and water supplies and maintaining the biodiversity and ecological balance of the local area.	Forest Act No.39 1973 Proposed Forest Act 1999	Forestry Dept

[1] The National Heritage Conservation Commission (NHCC) national register has 3,687 heritage sites but only 3,681 are categorized by type of heritage.

Protected Area	No.	Purpose	Act/Policy	Authority
Wildlife Sanctuaries	02	• To ensure that natural conditions necessary to protect natural significant species, biotic communities or physical features of environment where these may require specific human manipulation for their perpetuation.	Policy for National Parks and Wildlife, 1998	ZAWA
Bird Sanctuaries	02	• For the conservation, protection and enhancement of unique birdlife ecosystems and biodiversity significant to the nation.	Wildlife Act No.10 1998	ZAWA
Protected Fisheries		• Promoting fish management, production and sustainable utilization of fisheries resources.	Fisheries Act 1974 Draft Policy	Fisheries Dept
Private Game Ranches	26	• To enhance *ex-situ* conservation of wildlife ecosystems and biodiversity. • To promote wildlife conservation through the involvement of the private sector. • Diversification of the wildlife gene pool • To enhance wildlife production for economic and social purposes for the developer.	Wildlife Act No.10 1998 Policy 1998	Private Landowner
Community Game Ranches	01	• To develop a viable economic development for the developer as well as for the rural community. • Rural economic empowerment with the benefit on the environment.	Wildlife Act No.10 1998 Policy 1998	Local Community & Private Sector
National Monuments (Natural & Cultural Sites)	77	• To ensure conservation of unique heritage in perpetuity as well as for public enjoyment and education.	National Heritage Conservation Act	NHCC
World Heritage Sites (Victoria Falls)	01	• To ensure conservation of unique heritage in perpetuity as well as for public enjoyment and education.	National Heritage Conservation Act	NHCC
Ramsar Sites (5 other proposed sites)	02	• For the conservation and enhancement of wetland ecosystems and biodiversity especially as waterfowl habitats of international significance. • Sustainable management and utilization of wetland resources.	Proposed Wetlands Policy 2001 Wildlife Policy 1998	Now ZAWA (Before it was Environmental Council of Zambia)
Botanical reserves	59	• For the preservation of important plant genetic resources.	Forest Act No.39 1973 Proposed Forest Act 1999	Forestry Dept

Source: DSI, 2004

The distribution of NP and GMA by watershed is given in Table 2 (see below). Amongst the major categories of PA in Zambia, only managed NPs give a high level of protection. Only NPs offer legal protection from conversion and extractive activities, as they are designated as sites for biodiversity conservation and tourism. In GMAs, the Wildlife Act only protects classified game species, which are then hunted under license. Conversion to agriculture and other land uses are allowed under GMA legislation. FRs are classified as national forest or local forest. However, FRs are unmanaged and largely unprotected and do not represent at present an effective category of PA.

Table 2 - Extent of National Parks and Game Management Areas in Zambia by river basin

River basin		National parks			Game management areas		
Name	*Area (ha)*	*Number*	*Area (ha)*	*% basin*	*Number*[2]	*Area (ha)*	*% basin*
Upper Zambezi	26,286,040	4	1,068,600	4.1	7	5,516,000	21.0
Middle Zambezi	1,482,800	1	409,200	27.6	1	234,400	15.8
Luangwa	13,874,050	5	1,673,800	12.1	10	5,305,900	38.2
Kafue	15,620,040	3	2,326,000	14.9	8	3,806,900	24.4
Chambeshi-Luapula	16,176,030	5	674,400	4.7	8	1,892,500	11.7
Tanganyika	1,821,030	1	206,300	11.3	0	0	0
Total	75,259,990	19	6,358,300	8.4	34	16,755,700	22.3

Source: Chi-Chi, 2004

The Zambia Wildlife Authority (ZAWA) has management responsibility for NPs and GMAs. The 1998 Wildlife Act specifies that the management of GMAs is to be done in partnership with local communities, and provides for the establishment of Community Resources Boards (CRBs) that can be involved in revenue sharing and co-management of wildlife in GMAs. Currently there are 54 CRBs in the country. The same act also provides for the establishment of private game ranches. Forest reserves are administered by the Forest Department (FD). The 1999 Forest Act provides for the establishment of Joint Forest Management Committees (JFMCs) to be involved in the co-management of some FRs. However, no such committee has been established in the country.

Little is known and documented about the state of ecosystems in the PAs system[3]. Similarly, there is no systematically updated information on the state of wildlife populations in both NPs and GMAs. Most wildlife experts in Zambia believe that there has been a drastic decline in populations of large mammals in the country in the last 20 to 30 years. For example, the black rhino is believed to be extinct and the elephant population has declined to 22,000 from nearly 250,000 in the 1960s. Because of poor census data for wildlife species, it is difficult to determine the conservation status of wildlife populations. However, the IUCN Red Data List shows that at least 13 mammal and 9 bird species in Zambia are either endangered or vulnerable. Threats to biodiversity range from poaching to habitat loss arising from agricultural expansion, but the magnitude of these threats is poorly established. The significant threats and their root causes are presented in Table 10.

SUMMARY OF KEY FEATURES

Management objectives

Table 3 presents the formal management objectives of the different categories of PA. As most of the gazetted areas in categories other than NP and GMA are unmanaged, these objectives are often not applied. Almost all of the PA management objectives listed, save for education, are primary objectives for at least one PA category. Two management objectives – preservation, of species and genetic diversity and maintenance of environmental services, are primary in national parks, protected fisheries, botanical reserves, and national forest reserves. This is in line with the basic protection functions of Zambia's PA institutions. Notably, national parks and national forest reserves combine protective measures (including natural/cultural features), scientific research, and education as secondary objectives. The national forest reserve category does allow sustainable use of resources only in the form of selective logging under license but the same management objective is a primary one under local forests reserves as these are a source of goods and services for the local people. Similarly, the sustainable use objective is important for GMAs.

[2] Size of two GMAs was not available

[3] See Figure 4 in Chapter 2, Baseline for details of extent of protection for major vegetation types.

Table 3 - Mix of Management Objectives for Zambian Protected Areas

MANAGEMENT OBJECTIVE	NP	GMA	PF	BR	LFR	NFR	HS
Scientific Research	2	3	2	1	3	2	3
Wilderness protection	1	3	3	3	3	1	~
Preservation of species and genetic diversity	1	2	1	1	2	1	2
Maintenance of environmental services	1	2	3	1	2	1	~
Protection of specific natural/cultural features	2	2	3	3	3	2	1
Consumptive/Non-Consumptive Tourism and recreation	1nc	1c	~	3	3	2nc	1nc
Education	2	2	2	2	2	2	2
Sustainable use of resources	~	1	~	~	1	2	3
Maintenance of cultural/traditional attributes	~	3	~	~	~	~	1

Source: WWF, 2004

Key: **1**-Primary Objective; **2**-Secondary Objective; **3**-Potentially applicable; **~**-Not applicable; **c/nc**-Consumptive/Non-Consumptive; **NP**-National Park; **GMA**-Game Management Area; **PF**-Protected Fisheries; **BR**- Botanical Reserve; **LFR**-Local Forest Reserve; **NFR**-National Forest Reserve, **HS**-Heritage Site

National Parks

National Parks (NPs) are natural areas established for the purpose of protecting the integrity of one or more ecosystems for present and future generations and the provision of a foundation for spiritual, scientific, educational, recreational and visitor opportunities which are environmentally and culturally compatible with conservation objectives. These objectives are achieved through the exclusion of exploitation or occupation that is inimical to the purposes for which the national park was established. The major characteristics of Zambia's NPs are listed in Table 4.

Table 4 - Major characteristics of National Parks in Zambia

Name	Area (km^2)	Major ecosystem	Major threats
Blue Lagoon	450	Floodplain grassland	Invasive alien species Livestock grazing
Isangano	840	Swamp grassland	Poaching Agricultural clearing
Kafue	22,400	Woodland	Poaching Uncontrolled burning
Kasanka	390	Woodland & Dambo grassland	Poaching Uncontrolled burning
Lavushi Manda	1,500	Woodland	Poaching Uncontrolled burning
Liuwa Plain	3,660	Floodplain grassland	Poaching Uncontrolled burning
Lochnivar	410	Floodplain grassland	Livestock grazing Mining
Lower Zambezi	4,140	Woodland & Floodplain Grassland	Agricultural clearing Poaching Uncontrolled burning
Luambe	2,540	Woodland	Uncontrolled burning
Lukusuzi	2,720	Woodland	Poaching Agricultural clearing Mining Uncontrolled burning
Lusenga Plain	880	Woodland & Grassland	Poaching Uncontrolled burning
Mosi-oa-Tunya	66	Woodland	Agricultural clearing Invasion by alien species

Name	Area (km^2)	Major ecosystem	Major threats
Mweru Wantipa	3,134	Woodland & thicket	Agricultural clearing Poaching Mining
North Luangwa	4,636	Woodland	Poaching Uncontrolled burning
Nsumbu	2,020	Aquatic & Woodland	Poaching
Nyika	80	Montane Grassland	Uncontrolled burning Poaching
Sioma Ngwezi	5,276	Woodland	Poaching
South Luangwa	9,050	Woodland	Uncontrolled burning
West Lunga	1,680	Forest	Poaching Uncontrolled burning

Source: Chi-Chi, 2004

The major threats to biodiversity in NPs are over-hunting/poaching, encroachment, uncontrolled bush burning and, for parks in wetlands, invasion by alien species and over fishing. The classification of the condition of national park by the ZAWA is based on the occurrence of activities or invasive alien species that are inimical to the purposes for which the national park was established. Using ZAWA's system, national parks in which unauthorized settlements, mining and livestock grazing occur are considered *encroached*, while those with invasive alien species are considered *degraded*. Out of the 19 national parks, two are degraded (Lochnivar and Mosi-oa-Tunya) and six are encroached (Lukusuzi, Mweru-Wantipa, Nsumbu, Isangano, Sioma Ngwezi and Lower Zambezi). Lochnivar NP has been invaded by the prickly bush, *Mimosa pigra*, while Mosi-oa-Tunya NP has been invaded by *Lantana camara* and water hyacinth, *Eichhornia crassipes*. There are also boundary disputes in Kafue and Mosi-oa-Tunya NPs. Lochnivar NP is also affected by livestock grazing. In addition, several national parks have suffered greatly from excessive illegal hunting (poaching) which now threatens the viability of a number of larger mammals, especially those with a low intrinsic growth rate. Well stocked parks include South Luangwa, North Luangwa, Kasanka, Lochnivar, Blue Lagoon and Luambe.

NP Stakeholder analysis

The following stakeholder analysis l(Table 5) looks primarily at authority (statutory, management, planning, and regulation), investment and benefits. It shows a fairly healthy picture with a single primary authority that is also the primary beneficiary. The main concern is that there is no effective formal monitoring or regulation of ZAWA itself.

Table 5 - Assessment of NP Stakeholder roles

Stakeholders	Statutory Authority	Planning Authority	Management Authority	Regulatory Authority	Investment Source/business	Beneficiary of income
ZAWA	A	A	A	A	✓	✓
MTENR		s		A?		
ECZ		s		A		
Private sector		s	A (MOU)		✓	✓
Donors/NGOs		s	A/MOU		✓	
Chiefs/Locals		s				
CRBs		s				
VAGs		s				
District Councils		s				
Forestry Dept		s				
Fisheries Dept		s				
NHCC		s		A?		
Dept Water Affair		s				

A = Authority; S = Stakeholder *Source: DSI, 2004*

NP SWOT analysis

The strengths, weakenesses, opportunities and threats (SWOT) analysis (Table 6) emphasizes that ZAWA is a new institution with many capacity constraints but is at least reasonably structured to successfully manage national parks. It can expect significant donor support provided it continues to perform and to develop reasonable policies. The greatest external threats are the high macro-economic costs (financial and bureaucratic) for the wildlife-tourism sector in Zambia. Internally, there is a danger that if ZAWA does not radically liberalize its policies towards the private and community sectors (e.g. reduce non value-adding bureaucracy and encourage revenue generation and full retention), then major opportunities will be lost. Short term financial survival also reduces ZAWA's vision in terms of encouraging the sector.

Table 6 - SWOT Analysis for National Parks

Strengths	**Opportunities**
• Single authority responsible • Large, potentially valuable, parks estate • ZAWA appears politically stable (after years of instability)	• Governance and capacity of ZAWA reasonable and improving • Donors, particularly NORAD, willing to invest in ZAWA • At least seven parks can be viable within ten years (building on growth of tourism in the region) • ZAWA prepared to experiment with performance management, outsourcing, etc. • Buffer parks by modifying policy to encourage community and private wildlife management in buffer zones • To take seriously the emerging protected area paradigm of using parks as engines of economic growth
Weaknesses	**Threats**
• ZAWA is both the regulatory and management authority • Goals, indicators and monitoring not in place • Many stakeholders have low capacity and ZAWA monopolizes sector • Wildlife depleted and infrastructure ramshackle • Unable to manage at least half of the parks (lacking capacity and resources) • Serious neglect of wildlife management capacity in Zambia for several decades • Mandates and policies for park management unclear, eg biodiversity goals not defined, nor tradeoff with social goals	• ZAWA focuses on institutional survival (financial) at the expense of national gain (economic) • Excessive expansion of ZAWA and imposition of overhead expenses • High cost structure of Zambia makes viability challenging • Poor relationship between ZAWA and private sector, including excessive short term fees limiting re-investment and growth • Continued depletion of wildlife and infrastructure • Excessive mandate, and inability to meet this

Source: DSI, 2004

Game Management Areas

Most game management areas (GMA) were created as buffers around NPs (see Table 7). The justification for the establishment of GMAs is that they provide viable alternatives to commercial agriculture in areas of low agricultural potential. Unlike national parks, progress in GMAs is made exceedingly difficult because of the plethora of sector authorities (many/most with little capacity), while the primary stakeholders (i.e. the villagers) have little authority and are largely excluded from benefit. ZAWA intends for communities to retain 45-50% of revenues which is a considerable improvement from previously, but may not be sufficient incentive for successful CBNRM. License fees for fish and timber are extracted from communities, and consequently use is de facto open access. With the complexity of planning authorities, coordinating land use in GMAs is extremely difficult and the economically sub-optimal settlement in areas such as Chiawa and Lupande is a major concern for the growth of the wildlife-tourism sector. Of critical importance, GMA residents have no formal legal rights over the sale, management and benefit of any natural resources. While policy, rhetoric and even legislation suggest that the potential for CBNRM in Zambia is high, there is considerable slippage between stated intention and practice.

The huge potential for profitable *community-based natural resource management* (CBNRM) in communal areas in Zambia is undermined by the absence of strong rights to manage, benefit and sell these products. This problem is exacerbated by over-centralized institutional structures and elite capture where attempts have

been made to do CBNRM, and by generally weak CBNRM support capacity. Should the will to make CBNRM work emerge, there are certainly the resources and techniques to do so with a high probability of success, and at least in the wildlife sector the legislation is already in place.

Wildlife populations are at great risk in GMAs because there are no controls on land use. Given the high poverty levels and over-dependence on extensive low productivity agriculture in the rural areas of the country, agricultural expansion is continuously encroaching upon wildlife habitats in GMAs. Other threats to biodiversity in GMAs include unsustainable hunting of wildlife species, logging and uncontrolled bush burning. The impact and root causes of these threats arepresented in Table 10.

Table 7 - Attributes of Zambia's GMAs

Name	Size km2	Buffer for
Bangweulu (with Chikuni)	6,470	Lavushi Manda
Bilili Springs	3,080	Kafue
Chambeshi	620	Isangano
Chiawa	2,344	Lower Zambezi
Kalasa Mukoso	675	*None*
Chibwika-Ntambu	1,550	West Lunga
Chisomo	3,390	South Luangwa
Chizela	2,280	West Lunga
Kafinda	3,860	Kasanka
Kafue Flats	5,175	Blue Lagoon and Lochinvar
Kaputa	3,600	Lusenga Plain, Mweru Wantipa
Kasonso-Busanga	7,780	Kafue
Luano	8,930	*None*
Lukwakwa	2,540	West Lunga
Lumimba	4,500	Lukusuzi, Luambe, North and South Luangwa
Lunga-Luswishi	13,340	Kafue
Lupande	4,840	South Luangwa
Luwingu	1,090	Isangano
Machiya-Fungulwe	?	*None*
Mansa	2,070	*None*
Mukungule	?	North Luangwa
Mulobezi	3,420	Kafue
Mumbwa	3,370	Kafue
Munyamadzi	3,300	North and South Luangwa
Musalangu (Fulaza and Chikwa-Chifunda GMAs)	17,350	North Luangwa
Musele Matebo	3,700	West Lunga
Namwala	3,600	Kafue
Nkala	194	Kafue
Rufunsa	3,179	Lower Zambezi
Sandwe	1,530	South Luangwa
Sichifulo	3,600	Kafue
Tondwa	540	Lusenga Plain, Mweru Wantipa
West Petauke	4,140	South Luangwa
West Zambezi	38,070	Liuwa Plain and Sioma Ngwezi

Source: various, including Macmillan Map of Zambia and ZAWA Five Year Strategic Plan

GMA Stakeholder analysis

The stakeholder analysis for GMAs shows a much more fragmented arrangement than in the NPs, with many more authorities and potential beneficiaries. The breakdown between those with authority for management, and the other stakeholders is also spread more widely than for NPs.

Table 8 - Assessment of GMA Stakeholder roles

Stakeholder	Statutory Authority	Planning Authority	Management Authority	Regulatory Authority	Investment Source/business	Beneficiary of income
ZAWA	A	A	A	A		✓
MTENR		S		A?		
ECZ		S		A		
Private sector		S			✓	✓
Donors/NGOs		S			✓	
Chiefs/Locals	A	A	A		✓	✓
CRBs	A	A	A		✓	✓
VAGs	A	A	A		✓	✓
District Councils	A	A	A	A	✓	✓
Forestry Dept	A	S	A	A		✓
Fisheries Dept	A	S	A	A		
NHCC	A	S	A?	A		
Lands Dept	A	A				
Min Local Govt	A	A				
Dept Water Affair				A		

A = Authority; S = Stakeholder *Source: DSI, 2004*

GMA SWOT analysis

The following table is a SWOT analysis for GMAs. The focus is on the huge potential, which is limited by weak legislation and limited devolution.

Table 9 - SWOT Analysis for Game Management Areas

Strengths • ZAWA Act provides a base for moving towards full devolution, and forestry and fisheries sectors are discussing CBNRM • Strong evidence from region that principled CBNRM works • Zambia has more inherent potential (land, wildlife, forests, etc.) than neighbouring countries	**Opportunities** • Huge inherent potential provided by low population densities and large areas of land • The knowledge to implement CBNRM with a high probability of success is available • Substantial funding is available for performing programmes • General attitude that CBNRM and community empowerment has potential • Evidence that communities respond rapidly to rights/benefit based approaches
Weaknesses • Legislation allows for conversion to agriculture and other land uses. • Too many single sector authorities with little accountability or capacity for performance, yet landholder communities have little/no authority (no land rights or rights to NRs) • Opportunities for devolution not taken and enabling policy/practice not in place • Targeted at inappropriate level (i.e. at representational rather than participatory levels of governance) that is ineffective and allows elite capture • Devolution of rights partial and weak. For wildlife, communities get 45% of benefits, but no rights to control management or sale, and other sectors worse, • Act not converted into enabling SI legislation and policy	**Threats** • Failure to convert lip service support into real devolution • Lack of technical capacity • Proliferation of parallel single sector NR institutions at community level • Elite capture (by chiefs, CRBs) if devolution, policy and guidelines not got right from the start • Embarking on "CBNRM" without following correct principles or monitoring and adaptively managing process • High cost structure of Zambia makes viability challenging • Continued depletion of wildlife and

• Weak, non-cooperating, CBNRM support agencies • Many stakeholders have low capacity and ZAWA monopolizes sector • Wildlife depleted and infrastructure ramshackle • Commercial performance of Zambian wildlife sector way below regional levels	infrastructure • Capture of funding by non-performing NGOs / agencies • Weak private, NGO, civil and state sectors

Source: DSI, 2004

THREATS TO BIODIVERSITY AND ROOT CAUSES ANALYSIS

Table 10 - Threats and root causes of biodiversity loss in Zambia PA

Relevant to	Threat	Biological Impacts	Root Causes	Alternative Strategy
NP/GMA	Unsustainable illegal harvesting of wildlife for subsistence and commercial use	• Reduction in wildlife numbers, especially of large mammals, sometimes to local extinction • Loss of biodiversity • Collapse of symbiotic systems	• Poachers consider the benefits to be gained from poaching to be greater than the risks of being caught and prosecuted	• Strengthen enforcement by increasing budget and staffing level in ZAWA • Incentive-based payments for game guards • Better training and equipment for game guards • Innovative partnerships between ZAWA and CRB for more cost-effective anti-poaching in NP
			• **Barrier: Current legal and policy frameworks** serve to constrain the empowerment and incentives for communities to manage wildlife and other natural resources.	• Devolution of authority for wildlife management to communities • Creation of a new category of community managed PA • Transparent financial management procedures for the sharing of revenues between ZAWA and CRB and between CRB and VAG/communities

GMA	Trophy hunting at unsustainable levels	• Loss of wildlife species, especially large mammals	• Hunting licenses are awarded by ZAWA without sound, science-based monitoring of wildlife populations for quota-setting; • Monitoring of wildlife populations has not been instituted as a necessary cost of doing business for trophy hunting	• Monitoring for science-based quota setting is required as a standard cost of doing business for sustainable hunting • Regional review of M&E systems to select and adapt the most cost-effective systems for Zambia. • Develop community-based monitoring systems that communities are obliged to implement for quota setting. • Oversight by MTENR and civil society to ensure that quotas are based on science based monitoring
			• Pressure to increase quotas to increase revenues for ZAWA, traditional chiefs, communities, etc. • ZAWA is faced with an internal conflict, mandated with biodiversity conservation while pushed by government to become financially self-sustaining	• Civil society inputs/oversight of sector • Increase incentives for CRB and GMA communities through devolution of authority and increased revenues
			• Inadequate supervision of licensed hunters, including safari hunters • **Barrier**: **Resource rights** Wildlife belongs to the government and not to local communities.	• I|nternal community-level controls through improved governance at CRB and village level • Empowerment of communities leads them to recognize that when hunters exceed their quotas, it is the communities revenues that decrease • Improvements in the supervision of legal hunters by WPO and village scouts to ensure compliance with hunting quotas

GMA/FR	Unsustainable commercial and non-commercial harvesting of wood products	• Habitat degradation and loss of wildlife populations	• Illegal timber cutters perceive that the benefits of illegal logging outweigh the risks of being caught.	• Strengthen enforcement by increasing budget and staffing level in ZAWA (for NP) and FD (for GMA) • Incentive-based payments for guards • Better training and equipment for game guards
			• **Barrier: Resource rights** Forest resources belong to the State and access is controlled by the state • Communities have little incentive to protect/manage forest resources	• Devolution of authority to legally constituted community management structures. • Integration of forest management with other forms of natural resource management under a common village-level management structure.
			• **Barrier**: **Management model** there are no tested/proven models of natural forest management	• Development of pilot natural forest management models, especially for community-based management
NP/GMA	Conversion of habitat to agriculture and settlement	• Reduction and/or loss of wildlife habitats • Contraction and fragmentation of distribution ranges of wildlife species and loss of movement corridors • Changes to hydrological systems	• **Barrier: PA category** Conversion to agriculture is legal and permitted within GMAs. • Land use plans in GMAs do not have the legal clout to prevent abuses	• Creation of a new category of community-managed PA that disallows conversion of habitats. • Legislation reforms to make land use plans an effective legal instrument for conservation.
			• Farmers will clear land for agriculture in NPs if the risk of penalties is too low.	• Strengthen enforcement by increasing budget and staffing level in ZAWA (for NP)
			• Limited political commitment to deal with encroachment in NPs	Economic analysis to convince decision-makers and authorities of the importance of stopping encroachment
NP/GMA	Use of habitat for livestock grazing	• Habitat degradation and introduction of livestock diseases to wildlife species	• Herders will graze cattle in NP if benefits are greater than the risk of penalties.	• More effective enforcement

	Conversion for mining	• Pollution	• Wildlife sector is given lower priority than agriculture and mining	• Economic and financial analyses to show the importance of the wildlife sector. • Development of the wildlife sector so that it contributes significantly to local and national socio-economic development
NP/GMA	• Excessive fishing and destructive fishing methods: – Building of weirs to trap breeding fish – Use of fish poisons. – Use of undersize nets • Fishing during the closed season (breeding season)	• Reduction of fish in the food chain: impacts on higher trophic levels • Disturbance to fish breeding and other wildlife. • Disturbance to hydrology. • Toxic damage from poisons.	• ***Barrier: Resource rights*** *De facto* open access resource • Increasing population. • Large, growing seasonal influx of non-traditional fishermen • Lack of alternative income and food sources. • Almost total lack of control by responsible government agencies. • Poor understanding of ecology.	• Assessment of fishery resources status and identification of traditional and modern management techniques for testing • Empowerment of local populations for community-based fisheries management. • Testing and development of sustainable fisheries techniques plan with stakeholders. • Enforcement of agreed rules/code by community and government. • Enhanced revenues from improved processing and marketing of fish (in conjunction with a fisheries management system) • Community NR management fund fed by % of revenues
NP/GMA	Invasion of wetlands by alien species	• Habitat degradation and loss of indigenous species	• No effective controls on the introduction of invasive alien species	• Development of a national policy on invasive alien species
			• Inadequate knowledge on alien species and lack of appropriate control measures	• Research on alien species and development and implementation of appropriate control measures
NP/GMA	Uncontrolled bush burning	• Degradation of wildlife habitats and destruction of wildlife food resources	• Breakdown in the authority of traditional leaders (GMA) • Inadequate research and knowledge on the impacts of fire on wildlife and habitat	• Development of fire control programs as part of NP/GMA management plans • Involvement of traditional authorities and local people in fire control activities

ANNEX 2: FIELD DEMONSTRATION SITES

BANGWEULU FIELD DEMONSTRATION SITE

Bangweulu Wetlands

The Bangweulu Field Demonstration Site (BFDS) covers the south and south-eastern portions of the Bangweulu Wetlands, part of the larger Bangweulu Basin. The whole basin extends over parts of six districts in three provinces; Central, Northern and Luapula.

Environment

The Bangweulu Wetlands is one of Africa's largest wetland areas. It covers Lake Bangweulu and 11,900 km^2 of seasonally flooded plains and permanent swamp. The Bangweulu wetlands are located 525 km north-east of Lusaka, between the border with the Democratic Republic of Congo in the west and the Luangwa valley in the east. The Wetlands and their margins include 3 national parks, 6 game management areas and 13 forest reserves. Much of the area has started to show serious signs of degradation. Wildlife populations are severely depleted except in the area of the field demonstration site on the southern margins.

Hydrology has a great influence on both biodiversity and human life: the wetlands are flooded from early in the rainy season. Seventeen principal rivers, of which the Chambeshi is the largest, feed the wetlands. The Luapula River, which flows from Lake Bangweulu is the only outlet for the wetlands. It is estimated that of the total inflow into the wetland system only 10% leaves via the Luapula river; the remaining 90% is lost to evapotranspiration[4].

The area has an annual rainfall range of 1100 mm to 1400 mm which falls in a rainy season from November through to April. Generally the wetlands soils are more fertile than upland soils. Under the Ramsar Convention of 1991, part of the Bangweulu area around Chikuni was declared a wetland of international importance.

Vegetation and habitat types

Land cover is dominated by marsh and open water in the lakes while adjoining upland areas are dominated by Miombo woodlands (*Brachystegia* and *Julbernardia*). Other vegetation types include dry evergreen forest, chipya forest, dambo grassland and termitary vegetation. Bangweulu has habitats for the endemic black lechwe, sitatunga, tsesebe, nile crocodile, reedbuck, hippopotamus, zebra, buffalo, and a variety of otters. Notable bird species include the wattled crane and shoebill stork, two of Zambia's threatened waterfowls.

Table 11 – Vegetation cover in BFDS National Parks

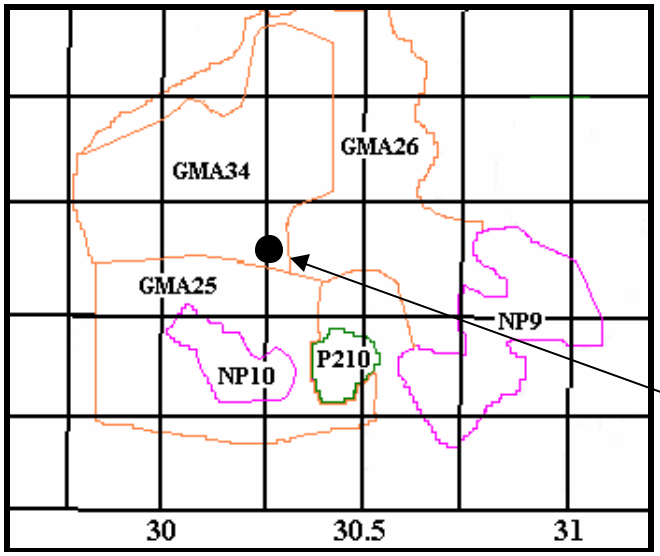
National Park	Extent of vegetation types (square km)										
	Dry forest	Swamp forest	Chipya forest	Thicket	Plateau miombo	Hill miombo	Termitary	Dambo grasland	Swamp grassland	*Open*	*Total*
Lavushi-Manda (NP9)	0	0	116	0	1,286	12	0	87	0	0	15,596
Kasanka (NP10)	0	0	54	0	282	0	0	54	0	0	31,068
Subtotal	0	0	188	0	1,738	12	71	141	572	0	2,722
BFDS total	133	6	3,962	12	38,914	99	1,114	2,164	12,094	2,563	61,061

After Chi-Chi, 2004

[4] Chi-Chi, 2004

Bangweulu Field Demonstration Site (BFDS)

The BFDS is located on the southern edge of the Bangweulu Wetlands and includes both wetlands ecosystems around Chikuni and terrestrial ecosystems. The focus of the demonstration site will be on a rough triangle joining Kasanka NP, Lavushi Manda NP and Chikuni (see ? in Figure 1). The site can be divided into two main topographic regions: the lower wetlands area and the surrounding uplands.



Code	Name
GMA25	Kafinda GMA
GMA26	Bangweulu GMA
GMA34	Chikuni GMA
NP10	Kasanka NP
NP9	Lavushi Manda NP
P210	Forest reserve

Figure 1 - Spatial distribution of protected areas in the Bangweulu Field Demonstration Site (from Chi-Chi, 2004)

Global and Local Significance of Biodiversity

There are 96 critical species that are classified as *endangered*, *endemic*, *rare*, *threatened* or *vulnerable* in the Bangweulu Wetlands (see Table 12). These consist of 59 birds, 24 mammals, 5 snails, 1 amphibian, 4 reptiles and 3 fish. Of the 96 critical species 25% are of global significance, 44% are of local significance and 31% are of both global and local significance. (The full lists of all critical species are presented in Addendum 1: **Error! Reference source not found.** to **Error! Reference source not found.**.)

Table 12 - Globally and locally critical bird and mammal species in the Bangweulu Field Demonstration Site ***(ND represents no data.)***

Level	Taxon	Protected area	Number of species by conservation status					TOTAL
			Endangered	Endemic	Rare	Threatened	Vulnerable	
Global	Birds	Kasanka NP	0	27	0	2	3	32
		Lavushi-Manda NP	0	22	0	0	0	22
		Bangweulu & Chikuni GMAs	0	14	0	4	3	21
	Mammals	Kasanka NP	1	0	2	1	4	8
		Lavushi-Manda NP	2	0	2	1	3	8
		Bangweulu & Chikuni GMAs	ND	ND	ND	ND	ND	
Local	Birds	Kasanka NP	0	14	5	2	1	22
		Lavushi-Manda NP	0	6	2	0	1	9
		Bangweulu & Chikuni GMAs	0	3	12	2	0	17
	Mammals	Kasanka NP	1	0	3	2	11	17
		Lavushi-Manda NP	2	1	2	2	13	20
		Bangweulu & Chikuni GMAs	ND	ND	ND	ND	ND	

Source: Chi-Chi (2004)

Bangweulu is home to several species of global importance that are not adequately protected at present. The two most important are the black lechwe and shoebill stork. The black lechwe has always been endemic to the Bangweulu wetlands. Although its exact range is uncertain, it is known to have shrunk drastically in the recent past and is now strongly concentrated around the Chikuni area where a ZAWA post is located.

The following is a list of species either found in the area, or known to have existed in recent times, which are listed in the CITES appendices.

Table 13 – CITES-listed species found in Bangweulu

Common name	Scientific name	CITES Appendix
MAMMAL		
Black Lechwe	*Kobus Leche Smithemani*	App II
Caracal	*Felix Caracal*	App II
Serval	*Felix Serval*	App II
Leopard	*Panthera Pardus*	App I
Elephant	*Loxodonta Africana*	App I
Hippopotamus	*Hippopotamus amphibius*	App II
REPTILE		
Crocodile	*Crocodylus niloticus*	App II
Crocodile	*Crocodylus cataophractus*	App I
Python		App II
Tortoise		App I/II
BIRD		
Shoebill	*Balaeniceps Rex*	App II
Wattled crane	*Grus Carunculata*	App II
Stanley's Bustard	*Neotis Denhami*	App II
Black-bellied korhaan	*Eupodotis Melanogaster*	App II
Crowed crane	*Balearica Regulorum*	App II
Knobbilled duck	*Sarkidiornis melanotos*	App II
Barn owl	*Tyto soumagnei*	App I

The following CITES species are known to have existed in living memory, but are now believed to be locally extinct: Cheetah (*acinonyx jubatus*, App I) and black rhincerous (*diceros bicornis*, App I).

Socio-economic context

The project area includes areas under two local chiefdoms: the Chiefdom of Chiundaponde, and the Chiefdom of Kafinda. The main ethnic groups in the region are Bisa and Lala (both of the Bemba grouping), and Twa people who are the traditional inhabitants of the inner swamps.

The main human land uses in the wetland area are fishing and various forms of semi-permanent hoe cultivation. In the recent past the human population in the swamps has dramatically increased, with a large influx of seasonal fishermen into the wetlands. This has put a tremendous strain on the fishery resources. Anecdotal evidence suggests that fish catches are declining.

Fish is the main cash crop harvest in the area. There is strong demand for dried fish on a national level. This and the economic decline have driven more and more people to fishing, especially as a seasonal source of income. In addition to the Twa people who have lived for generations on islands deep in the swamps, increasing numbers of people are fishing around the perimeters of the swamps in the breeding areas. Fishing methods are often include illegal means such as poisoning, building of weirs across the flooded marshes and use of fine mesh nets, even mosquito nets. There are no discernable controls over fishing in the project area despite it being the major income source. Fish caught are either carried out by fishermen or bartered in trade

with traveling merchants in exchange for household items and clothing. The level of fishing activity brings in many people to the area and helps make the widespread illegal hunting harder to control. Fishermen require fuel for cooking and drying of fish, so the few trees in the area are constantly lopped for fuel preventing development of trees on higher ground. This has an adverse effect birdlife and the ecosystem generally.

The building of fish weirs also upsets the natural hydrological system. Anecdotal evidence suggests the resource is being rapidly depleted with declining catches. The destructive methods and "free-for-all" access in these critical breeding areas must be seen as the major cause.

The upland areas are farmed under two traditional systems: large and small scale *chitemene* shifting agriculture, and village gardens. The *chitemene* system of woodland cultivation is traditionally associated with shifting settlements. This hindered development and access to social services, but the majority of villages are now fixed.

Village gardens are permanent small fields nearer to the village settlement. Soil fertility maintenance is a major challenge for these gardens. Crops grown include maize, millet, cassava, sweet potatoes, pumpkin, beans and green vegetables. There is a pressing need for the development of better husbandry systems that sustain soil fertility and productivity.

In the seasonally flooded areas around the margins of the wetlands cassava is the main crop. Soil is piled up into mounds and the cassava planted on top to remain dry most of the time. There are very extensive cassava gardens in the lower lying areas of the project area. The area also has one or two fledgling mechanized commercial farms and a small number using oxen for plowing and transport. Crops which have been tried are maize, tobacco, coffee, cassava (for starch), vegetables as well as the traditional crops grown in the gardens.

Livestock production is known only on a small scale being mostly chickens, pigs and goats. Some have also tried cattle, sheep, rabbits, doves and ducks. Much of the area was traditionally infested by tsetse fly making it unsuitable for cattle. Tsetse flies have declined with the decline in game, but are still present in some areas.

Hunting, both legal and illegal, us another land use. Trophy hunting in the GMAs is managed by ZAWA and the CRB. Poaching feeds both subsistence and local market needs.

Administrative context

There are a number of government agencies mandated to work in the Bangweulu area: ZAWA, Forestry Department (FD), Department of Fisheries (DoF), and the Department of Water Affairs (DWA). However, there is little effective presence of these institutions, with the exception of ZAWA, and little coordination amongst them.

Currently the most visible central government representatives are the ZAWA scouts stationed at Chikuni. Local authority is vested with the local chiefs. The relationship between local people and ZAWA is strained, primarily over the issue of hunting revenues – a criticism levelled at ZAWA is that they are not sufficiently transparent in the sharing of revenue from hunting licenses.

The CRB in Kafinda area is active, partially assisted by the work of Kasanka Trust. The Trust manages Kasanka NP, under a management agreement with ZAWA, and also assists with local community development.

Threats to biodiversity and root causes

Table 14 presents a matrix of the threats, biological impacts, root causes and correctives measures for the Bangweulu Field Demonstration Site.

The system of shifting agriculture practiced has contributed to the fragmentation of animal habitats. The effects of shifting agriculture have combined with the high level of deforestation necessary for charcoal

production, which only allows extremely limited re-growth of the miombo woodland close to roads and settlements.

National Parks
Kasanka NP has a well developed management system, though there is no written management plan; Lavushi Manda NP has no system at all, and there is a lack of biodiversity data for the park. The major threat to biodiversity in the parks is poaching. Kasanka NP has a program of early, light controlled burning, but uncontrolled bush burning is a problem at Lavushi Manda.

Game Management Areas
The major threats to biodiversity in GMAs are agricultural expansion into wildlife habitats, unsustainable harvesting of wildlife species, over-fishing and uncontrolled bush burning.

Table 14 – Threats Matrix for BFDS

THREAT	BIOLOGICAL IMPACT	ROOT CAUSES	CORRECTIVE MEASURES
• Poaching of wildlife species (including unsustainable harvesting in GMAs)	• Reduction of mammals - in some cases to local extinction. • Loss of biodiversity • Collapse of symbiotic systems. • Degradation of habitats.	• The risks and penalties of being caught are too low to be a sufficient deterrent compared to the benefits of poaching • Combination of poverty and access to valuable wildlife resources • Large seasonal influx of fishermen for whom poaching is sometimes a secondary activity	• Strengthen enforcement by increasing budget and staffing level in ZAWA • Incentive-based payments and better training and equipment for game guards • Innovative partnerships between ZAWA and CRB for more cost-effective anti-poaching in Lavushi Manda NP • Increased empowerment and benefits to communities creating greater incentives for them to protect wildlife
		• Disenfranchisement of people from wildlife resources – wildlife and natural resources belong to the State. • Communities receive shares of hunting license revenue, but control and management of the resource is in State hands	• Reclassification and creation of a community-managed PA with community empowerment to control access and use of wildlife and other resources and community control over costs and revenues. • Support to community managers to develop needed technical, management and governance capacities • Communities create natural resource management fund fed from a portion of revenues from sustainable natural resource management.
		• Inadequate supervision of licensed hunters, including safari hunters • Hunting licences granted with little or no scientific data.	• Community oversight of respect for quotas through awareness raising that their revenues are dependent of respect for quotas • Improvement in the supervision by village game scouts and WPO of legal hunters to ensure compliance with set out hunting quotas

THREAT	BIOLOGICAL IMPACT	ROOT CAUSES	CORRECTIVE MEASURES
• Excessive fishing and destructive fishing methods: – Building of weirs to trap breeding fish – Use of fish poisons. – Use of undersize nets – Fishing during the closed season (breeding season)	• Perturbation of the entire food chain • Disturbance to fish breeding and other wildlife. • Disturbance to hydrology. • Toxic damage from poisons.	• **Barrier:** *De facto* open access resource. Almost total lack of control by responsible government agencies. • Ecology of fisheries resource poorly understood. Regulations not based on good science. • Increasing population, lack of alternative livelihoods and large, growing seasonal influx of non-traditional fishermen.	• Reclassification and creation of a community-managed PA with community empowerment to control access and management of fisheries and other resources. • Assessment of fishery resources status, inventory of traditional and modern fisheries management techniques and testing and support to community managers for the testing and development of sustainable fisheries management system using adaptive management approach. • Community NR management fund fed by % of revenues from fisheries • Enforcement of agreed regulation by community managers with support from government/DoF. • Enhanced revenues from improved processing and marketing of fish from managed fisheries (in conjunction with a fisheries management system.
• Conversion to agriculture	• Loss of habitats • Fragmentation and contraction of distribution ranges of wildlife species and loss of movement corridors • Loss of important vegetation types. • Loss of associated animal species. • Changes to hydrology.	• **Barrier: legal status of PA** Conversion of natural areas to agriculture and other land uses is legally permitted within GMA. Land use planning not a viable tool for preventing conversion. • Low level of community responsibility and incentives for conservation. Inadequate returns to communities from wildlife management	• Reclassification as a new category of PA with new boundaries around priority habitats/wildlife management areas within which agriculture is not permitted. • Community empowerment to control, manage and benefit from the wildlife and other natural resources.
		• Slash-and-burn agriculture that destroys the forest for the value of the nutrients in the vegetation. Lack of sustainable, productive agricultural systems • Population growth and over-dependence of rural economy on agriculture • Lack of alternatives for food and income generation.	• Promote the testing and adoption of conservation farming methods • Diversification of sources of rural livelihoods that includes wildlife management (production and sustainable utilization) as a more important source of income and livelihoods than is the case now • Develop community-based income generating activities based on the processing and marketing of natural resource products.

THREAT	BIOLOGICAL IMPACT	ROOT CAUSES	CORRECTIVE MEASURES
• Uncontrolled bush burning	• Degradation of forests and woodlands and loss of species, especially those that are fire sensitive	• Breakdown in the authority of traditional leaders (GMA) • Inadequate staff and lack of fire control programs in PAs (especially GMAs) • Inadequate research and knowledge on the impacts of fire on wildlife and habitat	• Work with traditional authorities to develop/reinstate fire management programs of controlled early burning. • Development of fire control programs as part of NP/GMA management plans • Development of a research program on fire monitoring and impact assessment

ANNEX 3: STAKEHOLDER PARTICIPATION PLAN

SUMMARY

In preparation for the Project Document on the reclassification and sustainable management of Zambia's Protected Area Management, the key stakeholders in protected area buffer zones and the larger protected area support zones were identified and an analysis of their capabilities and potential role in project implementation undertaken. The following table categorises stakeholders in terms of both their *influence* (power over outcomes), and their *importance* (how affected they are by the project outcomes).

Table 15 – Categorisation of influence on, and impact of project outcomes on different stakeholder

	Low influence	**High influence**
High importance	• Communities (inc. tradit. Chiefs) living close to NPs • Forest Department • Fisheries Department	• Communities (inc. tradit. Chiefs) and CRBs in, or close to GMAs, • ZAWA • MTENR
Low importance	• IUCN • WWF • WCS • AWF • Min. of Local Government and Housing • ECZ • NHCC • District Councils • Department of Water Affairs	• Min. of Lands • Min. of Agriculture and Cooperatives • Donors • NRCF

Socio-economic and socio-cultural life in Zambia

Economy

Zambia is a landlocked country in Southern Africa, with a total land area of 752,000 km². It has abundant natural resources and fine wildlife affording the country with significant tourism potential for creating employment and earning foreign exchange earning. It is also endowed with various minerals and precious stones such as copper, emeralds, zinc, lead and cobalt, and was once a single commodity economy dependent on copper. Agricultural potential is high, but the commercial sector and upstream and downstream linkages remain weak. Administratively, the country is divided into 9 provinces, which are further subdivided into 72 districts.

The economy, however, is small, with excessive non-value-adding regulation. Costs are extremely high compared to neighbours. Tax rates are high, as are import tariffs, but perhaps one of the major intangible contributing factors is the high level of transaction costs. This includes a plethora of regulations and permissions, slow legal systems and weak property rights.

Population

The population of Zambia has continued to grow. The 1980, 1990 and 2000 censuses estimated the population for Zambia to be at 5.7 million, 7.8 million and 9.9 million respectively. However, annual population growth rate show a decline from 3.1% between 1969 to 1980 to 2.7% between 1980 and 1990, and most recently 2.4% between 1990 and 2000. Zambia is one of the most urbanized countries in sub-Saharan Africa with about 35% of its population in urban areas. Despite some 72 language groups in Zambia, ethnic conflict is low.

Poverty

Poverty is a serious problem in Zambia. A series of national surveys summarized by Central Statistics Office (CSO) for 1991, 1993, 1996 and 1998 show that poverty remains severe throughout the country, but especially in rural areas (see Table 16).

Table 16 - Overall and Extreme Poverty in Zambia by Residence

Year	Zambia		Rural Area		Urban Area	
	Overall Poverty	Extreme Poverty	Overall Poverty	Extreme Poverty	Overall Poverty	Extreme Poverty
1991	70%	58%	88%	81%	49%	32%
1993	74%	61%	92%	84%	45%	24%
1996	69%	53%	83%	68%	46%	27%
1998	73%	58%	83%	71%	56%	36%

Source: CSO-2000 Census of population and housing

Zambia's economy has since independence in 1964 been dependant on copper mining, and until 1991 was centrally planned. Currently the country is implementing the economic recovery programme, intended to promote economic growth, stabilize the economy, promote the private sector, privatize state owned activities and improve infrastructure and social services delivery systems. Whilst there has been progress since the beginning of the programme, it has been slow. GDP growth has fluctuated from 2.2 % in 1999 to 3.6% in 2000, 4.9% in 2001 and 3.0% in 2002.

Land Tenure

Weak tenure is a serious constraint on economic development in Zambia. It certainly constrains the growth of a commercial wildlife sector. Confusion over land and resource rights also results in open access use regimes, with little internalization of costs and benefits, and therefore low levels of responsibility and re-investment in the resource base. Weak tenure is perhaps the major reason that Zambia remains a land of potential, rather than actualization of this potential.

Political Stability

In Zambia's favour, the country has been stable politically and despite internal conflicts in many neighbouring countries has remained peaceful. Democratic elections are held regularly, and an attempt by the previous President to extend his term of office to a third term was foiled.

Key Stakeholders and a Review of their Capability, Roles and Potential Conflicts in Zambia's Protected Area Management

The key stakeholders relevant to the management of Protected Areas include government, private sector and civil society.

Table 17 – Key stakeholders, their capabilities and interests, and potential sources of conflict

Key Stakeholder	Capabilities/Current Role in Protected Area Management	Interests in Reclassification Project	Potential Conflicts and Mitigation Strategies
Zambia Wildlife Authority (ZAWA)	• Statutory Authority with responsibility for management of National Parks and Wildlife Sanctuaries, • Oversight / management of GMAs (including allocation of concessions and retention/ distribution of revenues) • Enforce rules and regulations; formulate and interpret policies including communities and private sector • To regulate the management and utilization of the protected areas natural resource • Provision of services (guides/guards) to tourism, • Monitoring of wildlife	• Clarification of role/s and PA policy • Assistance with managing some Pas • Assistance with developing private and community models • Potential recipients of PA funding	• ZAWA is both the regulatory and management Authority • ZAWA opposes full fiscal devolution to communities because of impact on ZAWA income • Income generating focus may conflict with conservation objectives MITIGATION: • Quality facilitation of role negotiation process • Source funding for 10-15 years until ZAWA is independently sustainable • Exposure / training / upgrading of leadership to emphasize broader national economic and biodiversity role
Ministry of Tourism, Environment and Natural Resources (MTENR) *Environmental Council of Zambia (ECZ)*	• Initiate policy and legal reforms for PA sector • Overall coordination of National Environmental Action Plans • Statutory Authority with mandate (but limited capacity) to regulate and monitor the management and utilization of natural resources in the PAs.	• Potential source and recipient of project funding • Undertake protected areas legal and policy reforms and establishment of guidelines • Possible recipient of project funding	• Lack of capacity to effectively regulate ZAWA, ZAFCOM etc. MITIGATION: • Quality facilitation in define realistic mandate • Lack of capacity to regulate ZAWA, ZAFCOM etc and to enforce the EPPCA • Conflicts with ZAWA, MTENR over regulation responsibility MITIGATION: • Quality facilitation in define realistic mandate
Traditional Chiefs	• Allocation of land to the locals and investors for settlements, agriculture and other developments • Control of many community activities	• Powerful in local context, so play an important role in communities and GMAs	• Empowerment of communities may threaten chief's monopoly on power MITIGATION: • Clear institutional policies and guidelines (which must be democratic, accountable, transparent and equitable if they are to work)

Key Stakeholder	Capabilities/Current Role in Protected Area Management	Interests in Reclassification Project	Potential Conflicts and Mitigation Strategies
Community Resource Boards (CRBs)	• Supposed to lead the management of wildlife sector in GMAs (but lack capacity and institutional definition) • Legal power to prepare and enforce rules and regulations for effective management of NR • Strong tendency towards lack of transparency in management of community affairs	• Interested in funding and technical support. • Could be considerably empowered by proposed role changes, leading to significant subsequent sustainable, community-initiated development • CRB at field sites interested in becoming CCA managers	• Elite capture, lack of transparency is a serious threat • Lack of resources and skills reduce effective participation • Community goals and objectives may not be compatible with conservation needs MITIGATION: • Clear policy and guidelines • Active monitoring of conformance with CBNRM principles • Effective CBNRM support agencies • Effective use of producer forums • Effective dissemination of information, such as revenue earned, disbursed, etc.
Ordinary community members	• *De facto* these are the prime users of natural resources (albeit in a highly disempowered, disorganised and open access framework) • Generally capable when empowered	• Strong interest in empowerment for psychological as well as economic reasons • Can be highly effective managers of natural resources	• At the bottom of the pile, so any empowerment brings conflict with 'higher' authorities MITIGATION: • Clearly defined devolutionary policy supported by guidelines, information, monitoring and access to legal restitution
Private Sector Landholders	• Potentially effective natural resource managers with the capacity to produce both biodiversity and economic benefits • Tend to be disempowered by present regulations, or at least confused by them • Hence sector is much smaller than it should be, but is nevertheless experimenting – the primary crucible of innovation • Employment opportunities to the local communities • Contributing to revenue generation of the PAs through payment of concession fees	• Clarification and liberalization of regulatory environment could release considerable potential	• Income generating focus of business may conflict with conservation goals • Lack of trust between government officials and private sector
District Councils	• Formulation and enforcement of bye-laws • Preparation of land use plans (legal rights but limited capacity and some role confusions) • Coordinating and preparation of district development plans and projects	• Securing benefits for members	• May be threatened by empowerment of communities
Forest Department	• Statutory mandate to establish, protect and manage national forests, ecosystems and biodiversity • Undertaking inventories and monitoring of forest resources • Responsible for all forest reserves in the country • Legal mandate to regulate management and use of forest resources • Extract revenues from legal use of timber (but currently only collect 3% of fees)	• May bring the weakness of this agency into sharper perspective	• Compete with communities over forest-related income • May oppose transparency and role clarification MITIGATION: • Clear roles for FD and communities regarding timber and NTFPs

Key Stakeholder	Capabilities/Current Role in Protected Area Management	Interests in Reclassification Project	Potential Conflicts and Mitigation Strategies
Fisheries Department *NHCC*	• Development of commercial fishing and enforcement of fishing regulations and laws (i.e. fish ban) • Regulate use and management of fisheries in the country as well as registration of fishermen and their boats • Statutory agencies that regulates use and management of all national heritage sites • Protect and conserve all heritage sites • Promotion and interpreting of cultural and heritage site	• Much potential to initiate effective community based fisheries • Potential role in supporting field demonstration sites • Minor player, although reclassification will affect NHCC • Identification of new heritage sites at field demonstration sites	• Few conflicts, and may welcome community initiatives and possible support of policy formulation needs • Potential for major conflict over use of revenues from Victoria Falls MITIGATION • Clear ruling by MTENR on use of Vic Falls revenues
Department of Water Affairs	• Provide guidelines for protection of watersheds and catchment areas	• Minor players	• Minor
Department of Lands	• Regulate management and use of land	• Could be critical if Project gets to the point of discussing land tenure	• Unclear. A role in resolving the many conflicts over land
Donors	• Funding programs and projects for effective management of the resources such as preparation of general management plans, capacity building, Biodiversity inventories and monitoring.	• Framework for investment in sector • Integration with on-going (and much larger) protected area initiatives • Co-financing of project activities	• Lack of coordination between overlapping project agreement • Project agreements poorly interpreted and applied MITIGATION • Informal coordination through Forum
CBNRM Support Agencies and International NGOs	• Initiating some CBNRM programmes, mainly in wildlife or livelihood (i.e. agricultural sector) • Carry out some conservation programmes in biodiversity conservation (mediocre track record)	• Interest in taking on project management roles, including CBNRM support • More financial support and institutional growth	• Conflict over roles and access to GEF money MITIGATION: • Impose tight field impact performance controls measures and peer review • Consider demand driving support, e.g. communities get vouchers to purchase support of their choice
Local NR NGOs	• Tend to be weak	• Potential to strengthen local NGOs	• Conflict over roles and access to GEF money • Tendency to become pseudo consultancies rather than genuine grass-roots advocacy groups MITIGATION Link grants strongly to performance and long term mandate
CBOs	• Tend to be weak or non-existent	• Much potential to strengthen these as part of civic strengthening	• Tend to be subservient to government and national organizations MITIGATION • Grant clear rights, and make available legal recourse
Natural Resources Consultative Forum	• Envisaged role as formal meeting place for government agencies, NGOs, donors and the private sector • Envisaged role is development of technical assessments and Advisory Notes to Ministers	• Much potential as a vehicle for policy discussions, and for peer-based monitoring systems	• Battles over control of NRCF slowing implementation MITIGATION • Focus on substantive issues

Participation Plan

The following pages outline the stakeholder participation plan for the project.

Legal and policy reforms

Stakeholders from all nine provinces are invited to three *regional stakeholder workshops*, to gather their input on five legal and policy reform processes: policies for reclassification, new PA categories, PA management partnerships, community management structures and the role of traditional leaders. Civil society will debate policy reforms through the project-funded Natural Resources Consultative Forum. A *national stakeholder workshop* then follows, which focuses on validating and amending the draft policies and guidelines.

Improved governance frameworks

NRCF

The *Natural Resources Consultative Forum (NRCF)* will be a national forum which will be established to facilitate civil society input into environmental and PA sector issues. Participants will include representatives of community PA managers, private and civil society PA management partners, private sector tourism operators, environmental NGOs, government and donors. NRCF itself will be a key mechanism for stakeholder participation on legal and policy reforms supported by the project.

Financial management

Local community management institutions (CRB and VAG) and selected community members in all 34 GMA across the country will receive *training in sound financial governance*, to enhance accountability and transparency at local levels. This will empower community managers to know and better defend their rights concerning benefit sharing from ZAWA and will enable VAG and community members to know and defend their rights concerning benefit sharing from the CRBs.

Reclassification

The initial process of *refining reclassification criteria* will be done in conjunction with stakeholder input ranging from local to national levels, supplemented with a literature review of experience outside Zambia. The reclassification plan will be part of the Conservaion Plan for the National System of PA. Its formulation will involve regional and national workshops for stakeholder inputs and validation.

M&E systems

Improved systems for monitoring and evaluating wildlife populations and ecosystem health will be developed. Initial research and design will be done by experts, but the core of the task will be undertaken through extensive field testing and adaptation. A small number of PAs and their local communities will be selected, where the evolving systems will be deployed, using local community members (trained ZAWA and village scouts, as well as other local community members). The results, feedback and experience from the testing will be used to enhance and refine the systems for implementation across the country.

Conservation Plan

Preparation of the overall Conservation Plan will necessitate *four workshops*: three regional and a national-level, designed to draw upon different sources of knowledge and expertise, and to ensure that the plan reflects a multi-stakeholder consensus For each potential priority site for reclassification, field visits will investigate the degree of support for individual site reclassification, at the local level.

Field Demonstration Sites

Overview

IO3 is concerned with demonstrating the potential of the laws, policies and tools developed in IO1 and IO2,

at the two field demonstration sites (FDS) in Bangweulu and Chiawa/Lower Zambezi. The intention at both is to combine a highly participatory reclassification exercise with implementation of new community management structures. To this end they follow similar sets of processes, which will run in parallel at the two sites, though the balance is very different between the two: at Bangweulu, the emphasis is on the reclassification planning of this complex site, while at Chiawa / Lower Zambezi, the emphasis is on the creation and development of a new community-managed conservation area under the new legislation to be developed. The creation of the CCA will involve the nearly full devolution of authority to communities and will enable communities to retain the full benefits from the commercial use of the CCA resources.

As part of the project proposal preparation, local stakeholder groups and community members were invited to workshops at both field sites. The outline of project objectives and proposed mechanisms for participation were presented, and discussed. The intention at these workshops was, as with every activity and process listed below, to gather as much input and feedback as possible, from stakeholders at every level. This input will be incorporated into the project design in a dynamic, adaptive fashion.

Once project implementation begins, the first steps build intensively on the preliminary site workshops: further discussions with traditional leaders, CRB and community representatives, government authorities and NGOs to refine the project objectives. This will be in conjunction with a broad-based awareness-raising process carried out at the community level. Both will operate in two directions: project staff will have an opportunity to present the project framework, while community members will have the opportunity to contribute their knowledge and experience, influencing the outcomes.

These first tentative steps are critical for securing broad support from the community for the project. At this point, the project must neither demand nor promise too much, as both can erode support and develop into cynicism as the project proceeds.

Reclassification at the FDS

Throughout the preparation of reclassification options, there is funding for a small number of community representatives to meet regularly with the consultants undertaking the technical analyses. This is to further the value of exchanges between consultants and local stakeholders: the consultants will be able to benefit from the local knowledge and field expertise of FDS inhabitants, while the stakeholders will benefit from an increased understanding of the techniques employed, resulting in increased understanding and support for technical approaches to conservation and protected area design.

Project staff will influence the reclassification process only as far as ensuring that the reclassification analysis is completed, and a list of options presented, and facilitating discussions of those options. The decision to create, or not create a new PA at Bangweulu will be made by representatives from local communities and national bodies. The final decision will be taken through an extensive series of workshops held at a range of levels, reflecting the importance of securing input and support from all levels of community.

Fisheries Management in the Bangweulu Wetlands

Participatory approaches will be used to investigate the complex issues concerning fishery resources in the Bangweulu area. In combination with technical analyses, input from local people will be used to develop management recommendations for fisheries. After a preliminary list of possible options has been identified, the principle of *subsidiarity of decision-making*, should ensure that decisions are made at the lowest possible level of authority.

CCA management

The creation of community-managed PA at Chiawa, and probably at Bangwaelu, will be the most advanced form of participation. As with reclassification, the framework will be set up by the project, while the decision-making will only operate in consultation with local stakeholders. Communities will be given nearly full powers to control access and to manage the lands and resources within the boundaries of the new CCA and to collect and manage the revenues from the use of these resources. Representative community management structures will be based on good governance principles of transparency, equity and accountability.

Capacity building

A major portion of project resources at the field sites will be invested in the development of capacities at the level of communities and the community managers. This will address, where necessary, issues of effective participation, planning, management, recordkeeping, bookkeeping, business management accountability, transparency, involvement of women and minority groups – all of which are important outside of the project in the wider context of democratisation and strengthening of civil society. Further capacity building will take place with the current and potential community wildlife and NR managers, to address the skills needed to manage wildlife effectively: adaptive management, democratic processes, and so on. A key to sustainability will be the development of local CCA/NR management funds to be fed out of a portion of the revenues derived from NR use.

Exchange visits will be organised, to projects and programmes within Zambia and in the wider southern Africa sub-region. The aim is to make best use of the wide range of experiences from other sites, to learn and incorporate those lessons into project implementation.

Enterprise development

The project will support community and user group participation in the development of small to medium income-generating businesses based on NR products, ranging from ecotourism to the sustainable use of NR, and will be addressed under IO3, at the field sites. There is much experience with community-based enterprise development in the wildlife sector in southern Africa, including joint ventures between communities and private sector partners for game viewing/ecotourism and for safari hunting. Other NR-based income generating activities may include such diverse products/activities as mushrooms, beekeeping, fuelwood production from managed forests, etc.

Cross-sectoral issues

Partnerships

Central to this Project is the development of innovative partnerships for PA management, between different combinations of public, private/civil society and community actors. MTENR will develop a new policy framework for PA management partnerships under IO 1. A formal monitoring system for these partnerships will be developed under IO 2 and the modified METT will be used for monitoring the effectiveness of these partnerships. New forms of partnerships, especially civil society/community partnerships, will be tested at developed at the two field sites.

HIV/AIDS

Sub-Saharan Africa is seriously affected by HIV/AIDS – it is home to 70% of people who have been infected, or have developed AIDS[5]. In Zambia, 17% of rural households have experienced an HIV/AIDS-related death[6]. The impacts of the epidemic permeate into all parts of society, including interactions with the environment. The effects are felt particularly strongly with the death and long-term illness of economically and physically active workers, which reduces agricultural labour supply and necessitates a switch to alternative sources of food and income – often harvesting of wild food sources and illegal hunting of wildlife. Livestock may also be sold, to pay for medicines and the care of patients, which reduces long term sustainability of food and income. HIV/AIDS limits development in all parts of society and leads to an overall increase in poverty – this is a self-reinforcing link as poverty can increase the prevalence of AIDS/HIV. Since the links between poverty and environmental degradation are also strong, the epidemic has a strong negative effect on the health of the environment.

Gender

The position of women in Zambian society is improving, but still leaves much room for improvement. All state institutions involved in environmental management and ZAWA in particular need considerable support to improve both their gender sensitivity and community participation approaches. Planning for PA

[5] SIDA (2003) The Environment, Natural Resources and HIV/AIDS
[6] Figure for 1998, in Zambia PRSP (2002)

management should always incorporate gender issues into the development agenda, in order to reduce the gender gap by a) targeting both men and women in its activities and providing sufficient investment funds to assist in improving the gender balance, and b) training community members, civil society in institution staff and government staff in gender sensitive approaches. Overall the project envisages improved gender equity development at community, institutional and civil society levels.

There are differences in the way men and women participate in environmental issues. For example, men place a higher level of trust in scientific information, while women value open discussion. Women in rural areas, such as the demonstration sites, are often busier with domestic work than men, such that they have less time available for participation, so are likely to be underrepresented. These differences should be acknowledged and investigated further at the implementation sites, for better design and implementation of participatory processes.

Participatory Mechanisms

Table 18 – Participatory mechanisms, by immediate outcome

Project Element	Participatory mechanisms
IO1	• Review of lessons learned from stakeholder experience of CBNRM in Zambia and across southern Africa • Regional workshops for stakeholder input • National workshops for stakeholder input • NRCF – a major platform for stakeholder input into legal and policy reforms and other PA sector issues. • Capacity building: in consultation with local people, knowledge and skills gaps will be identified and addressed.
IO2	• Refine criteria for reclassification through stakeholder workshops and input. • Investigate and secure support for reclassification at fieldsites through visits. • Direct participation of CRBs in development of M&E systems • Regional and national workshops for stakeholder input and validation of Conservation Plan
IO3	• PDF-Phase stakeholder meetings to confirm stakeholder approval of project objectives. • Awareness-raising and 2-way dialogue at project implementation to capitalise on support. • Village level capacity-building workshops to build core skills required in reclassification exercise. • Training for CCA managers, with consultation as above. • Exchange visits within and outside Zambia – to share ideas and experience. • Technical and participatory survey to identify best practice for fisheries. • Extensive community surveys using participatory techniques. • Multiple stakeholder-workshops to debate advant ages and disadvantages of reclassification options. • Final, participatory workshop to decide on reclassification option (including no change). • Test/develop science-based monitoring tools. • Annual adaptive management meetings to ensure CCA management is following a sustainable path.

ANNEX 4: MONITORING AND EVALUATION PLAN

Content

This annex contains drafts plans for monitoring and evaluation (M&E) systems for project management. This is followed by *Addendum 1*, a review of the World Bank/WWF Management Effectiveness Tracking Tool (METT) and recommendation for its modification for use in Zambia.

1. Project Level

M&E is an essential tool for measuring project impact and for informing decision-making at the project level. The proposed scheme aims to provide accurate, timely and relevant information to aid implementation at the national level, as well as for the field demonstration sites. Through a process of scheduled and informal reviews, feedback will be drawn on to improve project delivery. These processes, augmented by financial auditing will ensure that project implementation exhibits the attributes of accountability and transparency. The M&E system is composed of three components: monitoring, reporting, and adapting. The project will be implemented through an adaptive framework which feeds the findings of monitoring into operational planning, enabling management strategies to be modified to reflect the evolving situation. The recommendations emerging from the reports should be evaluated and incorporated into management wherever required as part of an on-going adaptive process. The plan laid out below is split into reporting and monitoring – the systematic adoption of recommendations arising is assumed to take place at every stage.

a) Responsible agencies/offices

The following agencies and offices will be involved either in monitoring, evaluating or reporting on the project.

Steering committee (SC)

Composed of the Permanent Secretaries from four Ministries and a representative of UNDP Zambia, the SC will have the highest policy-level responsibility for oversight, guidance and monitoring. The four ministries are: Tourism, Environment, Natural Resources; Agriculture and Cooperatives; Lands; and Finance and National Planning. The SC will meet twice a year during the period of intensive work or legal and policy reform during the first two years and will meet once per year after that. The SC will provide oversight and guidance for the project from a policy and programmatic perspective, will ensure the full integration and support of their ministries and will address problems and constraints, and propose solutions where appropriate.

Technical Advisory Group (TAG)

The TAG will be a group of 10 individuals from government and civil society who will be selected based on their competence in their fields. It membership will include individuals from private sector safari hunting and tourism operators, as well as private and civil society sector operators involved in PA management (such as African Parks and Frankfurt Zoological Society). Bi-annually it will review and provide advice on all technical and organisational issues related to project management, especially related to the new tools, strategies and policies.

Ministry of Tourism, Environment and Natural Resource (MTENR)

MTENR has responsibility for developing PA legislation and policies and oversight of ZAWA. As the executing agency for the project, they will carry out routine, weekly monitoring of the project. Through their Project Implementation Unit, they will have daily responsibilities for project inputs and monitoring. Monitoring by the MTENR of the field demonstration sites will be especially important,

as these field level experiences will be used to enrich the policy and legal reform process. MTENR will also closely monitor the findings and recommendations of the results of the civil society inputs/debates through the NRCF. MTENR will integrate these inputs into project monitoring and into legal and policy reforms.

UNDP/GEF Regional Technical Coordinator (RTC)

The RTC will monitor the project through the APR and through communications with the UNDP CO. The RTC act as the principle conduit between UNDP Lusaka, UNDP/GEF New York, and GEF.

Zambia Wildlife Authority (ZAWA)

ZAWA will play the lead role in the monitoring and coordination of field sites and field implementation partners. ZAWA HQ and the PIU will conduct quarterly field site visits (sometimes accompanied by representatives of MTENR and/or UNDP) to monitor progress, identify problems and take measures to resolve them.

Project Implementation Unit (PIU)

The PIU is charged with day-to-day of management of all local contracts and for coordinating the inputs of international consultants The PIU will have responsibility for the preparing/synthesizing quarterly and annual reports using the quarterly and annual reports of all the implementing agencies for the project. The PIU has specific responsibility for monitoring the indicators specified as their responsibility in Table 19 below and will monitor the timeliness of the execution of the project workplan.

Natural Resources Consultative Forum (NRCF)

NRCF will be a national forum established to facilitate civil society input into environmental and PA sector issues. Membership of the forum will include representatives of community PA managers, private and civil society PA management partners, private sector tourism operators, environmental NGOs, government and donors. Key legal and policy reforms supported by the project will be addressed by NRCF, as well as other PA sector issues identified by the project. Civil society will thus play an indirect role in project monitoring through the NRCF.

b) Periodic reporting mechanisms

Quarterly

Reporting on implementation progress will take place on a quarterly basis. Each implementing agency will prepare their own quarterly report in time for the PIU to use them to prepare an overall quarterly report for the project. Quarterly reports will allow for routine and frequent problem-identification and problem-solving, to ensure smooth implementation.

Annual Project Report – APR

The APR meets both UNDP and GEF annual reporting requirements. It is a self-assessment prepared by the PIU and completed by the UNDP CO. It will detail progress achieved in meeting project objectives, especially in relation to the work plan. It will also cover constraints to progress, measures already taken to overcome them, recommendations for tackling future constraints, and lessons learned by the PIU.

UNDP Country Office (UNDP CO) and UNDP/GEF Regional Technical Coordinator will, as appropriate, conduct yearly visits to the project field sites

c) Monitoring

Table 19 lists the principle impact indicators used, along with the justification for their choice and the institutional responsibility for monitoring the indicators.

Table 19 - Principle indicators, rationale and responsibility for monitoring

Level	Indicator	Rationale	Responsibility
Project Objective	The GRZ-approved Conservation Plan for the National System of PA is being implemented. Under the Plan, priority sites for reclassification have been identified as needed to achieve an average of 10% coverage of each ecosystem/vegetation type (Hearns) to ensure conservation of globally important ecosystem biodiversity. The most appropriate category of PA and the most appropriate forms of public/ private/ community management partnerships have been identified for each priority site.	Achievement of 10% coverage is a global target, which will be modified where appropriate. This indicator puts the emphasis on conservation of ecosystem-level biodiversity. An objective analysis of optimal categories and management system for each priority site is a key innovation of this project.	PIU & ZAWA & Final evaluation
	Approved, published Conservation Plan for the National System of PA	The Conservation Plan is essential for defining priorities and measures to achieve optimal conservation with limited resources. Government approval for the Plan is critical.	MTENR & PIU & Final evaluation
	At end-of-project (EOP), there will have been a net movement of 25% of NP and 20% of GMA to a higher category of management effectiveness using the following preliminary definition of METT categories (The METT score is an indicator of management effectiveness. 10 PA were ranked during project preparation. The METT baseline will be established for all NP and GMA during Yr. 1): *60-96* *High* *25-60* *Intermediate* *Less than 25* *Low* All newly created CCA and SHA will have at least an Intermediate ranking.	Improving management effectiveness is the greatest challenge to increasing protection of Zambia's PAs.	Local contract managed by PIU to apply the modified METT in Yr 1, 3 and 6
Outcome 1	At EOP, the following legislation, policies and policy guidelines have been adopted: • New policies for reclassification of PA • A new law for the creation of 2 new categories of PA (CCA and SHA) • A new policy framework for public/private/ community partnerships for NP, CCA, GMA & SHA • A new policy allowing for a single community-level management structure for all renewable natural resources • New policy/guidelines on the roles of traditional leaders in CBNRM.	Each legal / policy reform is targeted to overcome policy barriers to improving PA management effectiveness and biodiversity conservation.	ZAWA & PIU & Final evaluation

Level	Indicator	Rationale	Responsibility
	At least 2 CCA are created and are supported by community-private partnerships.	Lessons learned from community-based wildlife management in southern Africa indicate that maximum devolution of authority and maximisation of revenues are the two most important factors for success. The CCA are based on these principles.	ZAWA & PIU & Final evaluation
	All CRB receive financial statements giving basis of revenue sharing. All CRB/CCA boards and selected community representatves receive training in financial safeguards and accountability.	Lack of transparency in revenue-sharing is considered a key constraint to effective partnerships and reduces incentives for community management and conservation.	Done as part of PIU contract for applying modified METT at MT and EOP
Outcome 2	ZAWA uses business planning as a standard tool for PA management planning. The relative financial cost-effectiveness of the common forms of management partnerships has been quantified and is used in system planning.	Use of business planning for PA management is one of the key innovations for managing PAs on a sustainable basis, and ensuring the efficient use of limited resources.	PIU and part of modified METT at MT and EOP
	The Conservation Plan for the national system of PA is the basic document guiding the reclassification, management and development of priority PA in Zambia. The investment and marketing plans are used to mobilize and direct PA sector investments by private sector investors, donors and GRZ and to identify and mobilize partners for PA management.	The final evaluation will determine that these plans are not just sitting on a shelf, but that they are being used and applied as a key strategy document.	MTENR & PIU & Final evaluation
Outcome 3	Management effectiveness index of all field demonstration site PA are increased as below with a minimum ranking of Intermediate for all sites. • Chiawa GMA: 50 • Bangweulu GMA: 45 • Kafinda GMA:45 • Kasanka NP: 75 • Lavushi Manda NP: 35	Use of the modified METT will provide a measure of how effective the project has been at increasing management effectiveness in each of the target PAs.	PIU contract for applying modified METT at MT and EOP
	All CCA created out of the Chiawa, Bangweulu/Chikuni and Kafinda GMA are legally gazetted and under community management structures certified under the new CCA law. They are supported by private (non-government) partners.	Legal gazetting of the new CCA and registration of community management structures are critical to the sustainability of the CCA beyond the end of the project.	PIU & Final evaluation
	The CCA's M&E systems shows that the populations of large herbivores in the CCA has increased by 50% since the beginning of the project.	Trophy hunting and game viewing will generally be principle economic activities in the CCA, and both are dependent on wildlife populations. An increase in population will demonstrate the capacity of CCA management in protecting wildlife/conserving biodiversity.	CCA M&E system as verified by ZAWA and aerial surveys by lead field partner at each site
	Anti-poaching and basic management costs are covered by CCA NR management funds fed by revenues from the marketing of sustainably managed NR/biodiversity.	The ability to cover management costs out of revenue is essential to the sustainability of the CCA.	Inspection of CCA account books by ZAWA and PIU

d) Independent evaluation

In addition to the reviews and reports compiled by project staff, the project will be subjected to two independent, external evaluations, at the mid-term, and towards completion. Both evaluations will be conducted by mixed teams of international and national consultants.

Mid-term review

This review will evaluate the strengths and weaknesses of project design and the progress made towards the achievement of objectives. It will concentrate on the effectiveness, efficiency and timeliness of project implementation, highlighting analysing key issues, and presenting initial lessons learned about project design, implementation and management. Of principal importance are recommendations for building upon project strengths and for corrective measures to overcome project weaknesses.

Final evaluation

Three months prior to the end of the project, another independent external evaluation will take place, focussing on lessons learned, and evaluating the impacts and sustainability of results, including the contribution made to capacity development and to the achievement of global environmental goals.

e) Audit clause

Auditing is another form of project monitoring. The PIU will provide the Resident Representative with certified periodic financial statements, including an annual audit of financial statements relating to the status of UNDP/GEF funds, according to the established procedures set out in the Programming and Finance Manuals. The audit will be conducted by a legally recognised auditor, engaged by the PIU and will cover all project components.

f) Knowledge Development and Management

The information produced, and knowledge gained from the reporting processes will be made available to as wide an audience as possible. The proposed system for sharing information is planned to operate both internally within the project and externally.

Internal

The outputs from the reporting processes detailed above should provide the input for ongoing adaptation of project implementation, at all levels. The full value of the various reports can only be realised if the information contained within is made available to the widest possible group of interested parties. This is particularly important for this project, as activities will take place at a number of different sites and policy levels: an efficient system for information dissemination is therefore vital to ensure coordination between the dispersed activity sites (both geographical and political) and to eliminate or reduce duplication of efforts.

The system should ensure delivery between the following:

- PIU and site implementation units;
- nationwide workshops;
- ZAWA;
- MTENR;

External

- UNDP/GEF;
- UNEP;
- Ministries, government agencies;

- Across sub-region (southern Africa, SSA);
- Global – relevant projects, programmes and initiatives outside of UNDP/GEF system;
- NGOs;
- Other UN projects (eg Policy project)

Media

Depending on the relevant target audience, any of the following media could be used (in most cases more than one should be used):

- printed media – either photocopied or professionally printed;
- verbal communication – workshops and presentations;
- electronic distribution – floppy disk, CD-ROM or emailed soft-copies of documents;
- website – this should act as a central repository for all other types of media, as well as contact details;
- e-mail distribution lists – to regularly update all interested parties;

g) Adaptation

As recommendations from the above reports and reviews become available, the PIU in conjunction with implementing agencies should make arrangements to put them into practice.

ANNEX 5: REVIEW OF LESSONS LEARNED FROM CBNRM IN SOUTHERN AFRICA

Jones, B.T.B. (2003) *Lessons learned from the philosophy and practice of CBRNM in Southern Africa*. Paper for Southern African workshop in preparation for the WPC, 2003.

Background

Crucial elements for successful CBNRM implementation:

a) economic incentives: benefits must exceed costs to guarantee investment of time, effort and resources by the landholder
b) devolution of rights and tenure over land and resources
c) collective proprietorship
d) appropriate scale (social and ecological)
e) community empowerment

"if a resource is valuable and landholders have the rights to use, benefit from and manage the resource, then sustainable use is likely"

This rests on 3 assumptions:

1) the resource is given a focused value that can be realised by the landholder
2) authority is devolved form central to community bodies
3) collective proprietorship functions

Specific Lessons:

Economic

1. Economic incentives are difficult to apply where income has to be divided between large numbers of people and/or different institutions. However, where income is relatively high, where there are small numbers of people, and where income accrues directly to local residents, then economic incentives can have an impact. Evidence from CAMPFIRE[7] demonstrates that economic instrumentalism can work where income from wildlife is high and the number of beneficiaries is low or especially poor: in this case the success was believed to be due to significant institutional change in those areas.

2. Economic incentives are not sufficient alone, particularly where income to households is relatively small. It is crucial to ensure that strong proprietorship is devolved to local jurisdictions. Local managers need to be able to determine the level of use and the methods of use without requiring quotas and permits from government. A 1999 study of ADMADE and LIRDP[8] concluded that illegal off-take continued at pre-project intervention levels partly because the individual returns from hunting far outweighed a resident's share of the benefits from the projects.

3. Where economic benefits are perceived by residents to be high/useful and devolution reaches the lowest appropriate levels, then CBNRM is at its most effective.

Political

4. Problems with devolution of authority probably represent the biggest single obstacle to CBNRM in Southern Africa. Constraints to devolution include:

    a. Policy change is often limited and conditional compromises, based on existing legislation which is not necessarily ideal of adequate. CBNRM in Southern Africa typically bestows *resource rights*, but not *land rights*

[7] Reference on page 9: Bond, 2001
[8] Luangwa Integrated Resource Development Project (reference on page 9: Gibson, 1999)

b. In Zambia, communities tend to be passive recipients of income, without engaging in active management, partly because state retains high degree of control. For example, hunting ban in 2001 remove the main opportunity for communities to benefit from wildlife.

c. Attempts by government to regain control lost through decentralisation, for example, in Namibia through attempted re-interpretation of new legislation to require conservancies to acquire permits and quotas: this was successfully resisted by communities and NGOs working with them, and this is a highly positive sign.

d. There is a need to address the in-built tendency of bureaucratic hierarchies to seek increased authority from above, while resisting its devolution to levels below.

5. There is a large gap between *new policies*, and the *institutional ethos* of most organisations responsible for its application. Many wildlife officials do not trust local communities, and fear there will be no role for themselves. CBRNM needs to be "mainstreamed" as an acceptable conservation tool.

    a. The Tanzanian National Parks Authority (TANAPA) provides an example of where institutional reform was achieved, by: mainstreaming community conservation; selling the idea to officials as being beneficial to their work and not diminishing their authority; performance evaluated on basis of relationships with neighbours; community conservation applied alongside law enforcement and not as alternative.

6. New institutions for management face challenges in establishing themselves among other competing sources of authority, especially traditional leaders. They must also establish internal legitimacy: this is easier if social units are cohesive and collaboration is voluntary. This is also made easier if the new institutions can deliver benefits that are important to members: whether financial or intangible.

7. Accountability: community wildlife management committees tend to concentrate more on accountability upwards to donors and technical support organisations, rather than downwards to the organisation's members.

8. Security of tenure over land is an important foundation for sustainable management of land and resources by local communities. Without such security of tenure, many attempts to manage individual resources sustainably are undermined.

Practical

9. Putting "collective proprietorship" into practice has proved difficult: in Zimbabwe and Botswana, pre-definition of communities using existing administrative units was simple and quick, but often brings together groups which would not cooperate. But in Namibia, self-definition led to the re-opening of long-standing land, ethnic and tribal disputes. Giving rights to communities represented by committees enables local elites to capture the decision-making process – there is a need to ensure that collective proprietorship is enjoyed by the majority of residents and resource users.

10. From Mozambique[9]: it appears that a combination of regulation and control by game scouts, coupled with wildlife income used for grinding mills, and improvements to schools, village shops etc, has provided incentives for changing behaviour.

11. The ADMADE and LIRDP projects did not adequately exclude those who continued to hunt illegally. This promoted free-riding: individuals benefiting without modifying their resource use activities. This can have an important impact on whether communities opt for public works or household dividend. For example, by building a classroom, a person obeying the rules might be excluded from benefiting because they have no children at school, while a poacher with children will benefit while continuing to hunt.

12. CBNRM programmes in Southern Africa have tended to focus on empowering committees that represent relatively large numbers of people. This creates the danger of a centralisation of decision-making removed from the lowest appropriate levels.

[9] Referenced page 9

13. There is sufficient evidence from Southern Africa to suggest that conservation of wildlife and other natural resource need not be confined to formally proclaimed state-run areas [10].

14. A number of examples are emerging [11] where scaling up is beginning to take place with the lowest levels such as village bodies forming the foundations of accountable natural resource management governance systems.

Strategies to improve performance of community-based approaches:

a) Current policy and legislation should be revised on the basis of the evidence linking sustainable management with strong proprietorship and strong economic incentives.

b) This implies the strengthening of the rights of local communities over their land and natural resources. Governments should give up their hold over crucial areas of decision-making and maintain an overall regulatory/supervisory function rather than a control function.

c) Devolution should be based on the lowest appropriate level of jurisdiction. From there, scaling up should take place, where necessary, through the delegation of authority upwards.

d) Institutional reform of wildlife agencies needs to be promoted and supported so that CBNRM can be "mainstreamed" and accepted by officials. The gap between the philosophy embodied in policy and the philosophy of the implementing institutions needs to be closed.

e) CBNRM practitioners should continue to lobby for secure group tenure over communal land. Group land rights that include rights of exclusion, should be promoted as a fundamental pre-requisite for sustainable management and the establishment of community conserved areas.

f) Models such as those used in South Africa for the restitution of land rights for communities who lost their land under *apartheid* should be developed for protected areas. This would restore proprietorship over the land to communities who were evicted from their land for the establishment of protected areas.

g) In order to increase the impact of economic benefits, income should reach household level. Support agencies need to give more attention to methods of income distribution that promote direct household benefit (e.g. the household distributions pioneered by CAMPFIRE where recipients then return any cash earmarked for community projects)

h) Decision-making about use of income should be taken at village level rather than at the supra committee level, ensuring greater participation by residents

i) Communities should be supported in maximising their income generation opportunities within acceptable environmental and social limits and taking into account tourist carrying capacities.

Martin, R. (2003) *Condition for Effective, Stable and Equitable Conservation at the National Level in Southern Africa.* Paper prepared for a Workshop prior to World Parks Congress 2003.

This paper was prepared for a workshop prior to the World Parks Congress, 2003. As such, it focuses on National Parks, but does make extensive reference to land outside tight state control. The key points are summarised below.

He summarises all the socio-economic research findings on communities and conservation in Southern Africa since 1980 very simply as:

1. **Devolution of authority** to communities or landholders is a 'cardinal input'
2. **Promotion of economic value** for wild resources provides a positive incentive to conserve, *provided it is coupled to the first.*

National Parks are not held to be the pinnacle of conservation, given the many examples of failing state-protected areas, and the many successful conservation examples outside state-protected areas.

[10] Refer page 16
[11] Refer pages 16 and 17

"The soundest strategy for a state wildlife agency is to seek financial self-sufficiency for each protected area under its control and to divest itself of areas which are economically unsustainable" (De La Harpe, 1998)

The current state of community involvement in management is limited: in no southern African country can it be claimed that the first necessary condition for successful conservation outside national parks, that of *devolution of authority for natural resources to landholders*, has been fully met.

The centrality of links between **poverty** and **environmental degradation** are mentioned in the context of Zimbabwe: "simple demography, political instability and economic depression are causing movements of destitute people and forcing them to turn to the environment for the means of survival".

Exclusionary policies for PA management are failing, so the real issues for PA in the future are:

a) how can the full potential of their forest and wildlife resources be harnessed in sustainable national and local economic development ?
b) how can they be integrated into larger landscapes with a wider stakeholder participation in their management ?

The author goes on to suggest 'real world' financial partnerships as a solution, which would provide:

- genuine joint management of the park by government and local stakeholders;
- a channel for investment in the park by concerned supporters;
- a mechanism under which the park could receive its revenues directly, re-invest them in both capital and recurrent costs, and achieve financial self-sufficiency.

"**The devolution of legal authority to landholders to manage and benefit from wildlife on their land is without doubt the single most important factor in successful conservation outside state protected areas**" (Martin, 1993)

The paper ends with comments about the black-hole which is *corruption*. Seeing the potential benefits from conservation, "many bureaucrats seek to position themselves as 'gate-keeper' for any activity which might involve the issue of a permit, license of concession. To achieve this it is often necessary to go against existing provisions of the law, or withdraw rights and powers which had legally been granted to members of the public." The antidote, he concludes, "lies in the proper practice of democracy".

Child, B. (2003?) *Principles, Practice and Results of Community Wildlife Management in Southern Africa*

1. Careful consideration of scale is vital: "meeting under a tree" defines a community at a scale that allows for high levels of transparency, involvement and participatory democracy[12].
2. Innovative tools for spending money generated by wildlife is perhaps the most powerful tool yet available to CBNRM[13].
3. Despite significant investment in diversification, wildlife has been the subject of entrepreneurial activity for four decades, so the product is well developed.

Critical elements for sustainable use of resource: (the **Price – Proprietorship - Subsidiarity** Hypothesis):

PRICE – resource must be valuable
PROPRIETORSHIP – this value must be captured by landholders (not stakeholders)
SUBSIDIARITY – decisions must be taken at the lowest possible level

[12] Refer page 11
[13] Refer page 10

The Fast track – focus is on **devolving property rights**:	The Slow track – focuses on **capacity-building** and hopes communities will demand property rights:
- requires political will, - proven to be extremely effective, - relatively cheap, - relies on adaptive management.	- unproven, - a possible approach where there is limited political will - expensive because of (1) conflicts, (2) difficulty of building capacity where communities have few rights

Murphree, Marshall W. (2000). Boundaries and Borders. Paper presented at the Eighth Biennial Conference of the International Association for the Study of Common Property (IASCP),Bloomington, Indiana, USA 31 May-4 June 2000.

The key comments from this seminal article by Murphree (2000) are listed in bullet form:

- Protected areas have generally been uncritically linked with state ownership and management;
- Other IUCN Commissions observe that protected areas address only a fraction of global biodiversity concerns and point out the sense of alienation experienced by local peoples whose land and resources have been expropriated to create national parks;
- These commissions advocate inclusive policies where local people, acting collectively, are provided with incentives to take responsibility for and benefit from the economic development which protected areas can provide;
- Similar policy shifts are occurring in a number of international conservation and development agencies and the old notion of "*fortress conservation*" is being displaced by new ideas of development through community conservation and sustainable use;
- Performance of projects based on these new approaches has generally been well below expectations.
- Amongst the proximate reasons for failure are the following –
  - Cohesive communities have been hard to identify;
  - Incentives for cohesion are absent or do not cover the transaction costs involved in developing or maintaining cohesion;
  - The process requires time frames well beyond the impatient log frames of conventional donor project development; and
  - Conservationists have tended to 'colonise' and capture projects and local actors have diverted projects away from their central objectives.
- The **ultimate and most fundamental reason for failure has been that the critical ingredient for project success, that of devolution of authority and responsibility, has been missing**;
- Governments (and NGO implementing agencies) have continued to retain ultimate power to shape objectives and control benefits;
  - see community involvement as the same thing as "compliance";
  - see participation as the same thing as "co-opting" communities; and
  - are reluctant, as politicians and bureaucrats, to surrender the power and control of access to resources which is essential for robust devolution.

Hence most of the projects involving communities in natural resource management have simply become an exercise in "aborted devolution".

He further stresses the need for alignment of authority, responsibility and incentives:

- Authority without responsibility is meaningless or obstructive;
- Responsibility without authority cannot be effective;
- Without responsibility or authority, there are no incentives to invest, manage or control.

USAID (1998) Assessment of CBNRM in Southern Africa. Prepared by Agricultural Development Consultants, Inc.

1. The dependent users of natural resources on common lands respond positively and effectively to the needs to manage and conserve those resources when they acquire the authority and responsibility to act for enhancement of their benefits.
2. The intent of conservation law or policy is best achieved when the people are motivated to participate with officials to achieve the objectives of that law or policy.
3. CBNRM programs are process oriented and evolutionary in nature; they do not spring fully formed into existence, nor do they mature rapidly. Progress is incremental, building on a series of successive changes as the motivation of the participants increases.
4. The national policy environment within a country allows for replication of CBNRM activities within that country, but differences in the institutional environments among countries makes it impossible to replicate programs from one country to another. Instead, CBNRM principles and lessons are adapted to each country's unique environment.

IUCN (1997) *Community Wildlife Management in Southern African – A Regional Review*. Evaluating Eden Series, Working Paper 11

1. Differential inputs must result in differential benefits: those bearing a higher cost should receive higher benefits.
2. There must be incentive for good management: greater rewards from better management.
3. The unit of proprietorship must be the same as the unit of production, management and benefit.
4. The unit of proprietorship should be as small as possible.

ANNEX 6: RECLASSIFICATION OF ZAMBIA'S PROTECTED AREAS: DRAFT METHODOLOGY AND GUIDELINES

AIM

Reclassification planning is a major element of the project, as detailed under Immediate Objective 2, and Output 2.1 (see extract below, Table 20). This Appendix presents an outline methodology for the reclassification planning exercise. The methodology will be finalised in the first year of the project, and it is intended that this document be used as the basis for that process. It draws principally from two consultant reports: Conservation Needs Analysis (Chi-Chi, 2004) and Conservation Planning for Protected Areas (DSI, 2004), and a seminal article published in Nature, entitled "Systematic Conservation Planning" (Margules and Pressey, 2000).

The GEF Project provides an important opportunity to initiate the reclassification of Zambia's protected area system including:

- Enhanced bio-geographical representativeness of Zambia's ecosystem-level biodiversity;
- Re-categorization linked to specific measurable objectives;
- Re-categorization to create new opportunities for viability, economic growth and local benefit

The section of the project logframe on reclassification planning is presented below:

Table 20 - Extract from Outputs, Output Indicators, Activities, Responsibilities and Annual Targets in main document

Output 2.1 Identification of priority sites for reclassification to complete the National System of PA	PA and open area sites that are in need of reclassification and/ or effective management to ensure representative coverage of Zambia's ecosystems/biodiversity are identified (and are integrated into the Conservation Plan) Reclassification of PA completed at two field demonstration sites. *Baseline:* A preliminary gap analysis was done as part of project preparation but this did not include the identification of candidate sites. *MT:* Synthesis document on identification of reclassification priorities completed. Reclassification planning completed for two field demonstration sites.	**Activity 2.1.1.** Compile spatial data on biodiversity and PA, and refine the draft methodology, including conservation criteria and targets, for reclassification through literature review and stakeholder inputs.
		Activity 2.1.2. Identify candidate sites for reclassification by conducting a gap analysis of the National System of PA, including the following; • Review and update the existing gap analysis conducted by DSI in 2004; • Identify candidate sites for reclassification by analyzing forest cover loss/ecosystem conversion analysis of all NP and GMA and other sites that could potentially fill identified gaps in coverage by priority PA using manual interpretation of satellite imagery;
		Activity 2.1.3. Conduct field-level bio-physical status assessments of the candidate sites identified. • Confirm that the site is accurately classified by vegetation type on the base map. • Determine the level of depletion of wildlife populations and the potential for restoring viable ecosystems; • Analyze the interest of local stakeholders in the creation or upgrading to a priority PA.
		Activity 2.1.4. Conduct final synthesis to produce priority listing of sites for reclassification needed to ensure that an average of 10% of all ecosystem/vegetation types are covered by the National System of PA

Considerations

A system which aims to sustainably protect and conserve biological diversity must:

i) Contain a representative sample of the ecosystems/habitats/natural vegetation types in the country, and

ii) Generate sufficient revenues or enjoy other sustainable financing to ensure its continued protection.

The process of reclassifying the PA system should therefore take into account not only biological and ecological priorities, but also the socio-economic and institutional influences governing what is realistically achievable. The human element should not, however, be viewed solely as a series of limitations (for example stemming from encroachment or poaching), but also as a valuable resource to be employed productively in the conservation of biodiversity.

There is always a possibility of conflict between maximising socio-economic benefits, and having conservation as the principle goal. Rather than viewing them as alternatives, they should be seen as tightly interlinked, feeding from one to the other in a cycle: without conservation there is no wildlife, without wildlife there is no income, without income there is no conservation, and so on.

This reclassification exercise is primarily concerned with conserving biodiversity. Socio-economic and institutional concerns are dealt with extensively in the other outputs under *Immediate Objective 2*. For example, through business planning, effective marketing, and encouraging the spread of benefits to communities, as well as building institutional capacity at both local and central government levels.

Data availability

The DSI report (2004) comments on the weakness of Zambia's database on key habitats, species, their protection, protected areas and major threats (especially settlement) to them. Data are scarce, there are often question marks about methodology and replicability, and for almost every aspect the gaps far out shadow the data.

Theoretical basis

"Systematic conservation planning" (Margules and Pressey, 2000), published in *Nature*, is one of the best analyses and set of guidelines for conservation planning for protected area systems. It was the key reference recently used in the design of *PLANGRAP – Madagascar Protected Area Plan*[14]. Shortly after its completion, PLANGRAP served as the basis for planning World Bank, GEF and other donor funding to Madagascar's protected areas under their Third Environmental Program

The Nature article details 6 iterative stages for the construction of a coherent protected area system. The process is not unidirectional: there will be many feedbacks and reasons altering decisions.

1) *Compile data on the biodiversity of the planning region*
   Review the existing biodiversity data and decide on suitable surrogates for biodiversity. Information on rare or threatened species should also be collected.

2) *Identify conservation goals for the planning region*
   Explicit targets should be set for the intended areas and species to be protected as appropriate, with the proviso that they are re-examined in light of subsequent analysis. Although global targets such as 10% are useful, they should be applied with care.

3) *Review existing conservation areas*
   By comparing the coverage of the current system with what needs to be protected, gaps can be identified, along with the overall level of 'fit'. Filling these gaps will then form the basis of the following stage. It may also necessitate the re-evaluation of the targets set in stage 2.

4) *Select additional conservation areas*
   Through the application of algorithms, a preliminary list of candidate sites can be produced. The list will include current PAs for upgrading, downgrading, or degazetting, as well as open areas for the establishment of completely new PAs.

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5) *Candidate site validation and field data collection*
So far, the stages have involved desk-based analysis of remotely-sensed sources (including of maps). In order to test the validity of the analysis, as well as the suitability for reclassification, field visits should be undertaken. These will investigate bio-physical as well as socio-economic factors to ensure that reclassification would be possible and beneficial. On the basis of field visits, it is likely that the list generated from stage 4 will have to be revised, possibly requiring reanalysis at stage 3.

6) *Maintain the required values of conservation areas*
The final stage involves the reclassif ication of priority sites and the develop. Within this project, only at the field demonstration sites (Bangweulu and Lower Zambezi), will the reclassification planning exercise be taken to this next step and put into practice. The identification of reclassification priorities will be developed into a reclassification plan as an integrated section of the overall conservation plan for the National System of PA (as detailed under Immediate Objective 2).

Guidelines for Zambia

This methodology is to be used for two ends: to help shape the overall conservation plan for Zambia's PA system, and for implementation at the two demonstration sites. The previous stages are all relevant to both ends. For the *conservation plan*, the first five stages will be undertaken in the first three years of the project. The recommendations and outline plan from stage 5 will be incorporated into the overall conservation plan for Zambia's protected areas. For the *field sites*, the planned reclassification will be implemented and tested as per stage 6.

Drawing on the Nature article, as well as the two consultant reports[15], the following is an outline of how the above system may be applied in Zambia.

1) Compilation of spatial data on biodiversity and PAs

The reclassification planning should rely on the use of existing maps of ecosystems, habitats and vegetation types. The first step in Zambia must be to select the existing maps that best represent the different types of natural ecosystems of the country. Two candidates are the vegetation maps proposed by Chi-Chi (Edmonds, 1976) and DSI (Hearns et al, 2001). The analysis must establish i) how *accurate* the map is, as well as ii) determining which classification scheme is most *useful* for distinguishing biodiversity differences. The first could be accomplished by spot-testing the maps with ground-truth, and investigating the data used for compilation. The second requires some understanding of what will be required later, but should concentrate at this point on establishing the existence of a strong analogue between mapped vegetation categories and biodiversity in the field.

Compile and analyse data on distribution of critical species – threatened and endangered, especially for mammals and birds.

A review should also be undertaken of the maps and other data available on all of the existing PA categories in Zambia. This data should be analysed to determine how accurate and up-to-date it is. It is likely that up-to-date information is not available, and that older data contains many errors. Without accurate baseline data of this nature, the later stages may prove to be much more difficult.

2) Identification of conservation goals

Following the compilation of reliable baseline data, and in light of it, the next step is to establish targets for the PA system. Common targets such as "10% of the area of a country or of each vegetation type" are useful as a guide, but can be misleading. Principles of 'island biogeography' must be given careful consideration. One key problem occurs when a specific ecosystem covers only a very small area – protecting only 10% of a small area is not sufficient to prevent extinction, particularly if it is possible to protect the whole area. Also, guidelines can be subverted by reserving the least productive and least threatened landscapes, and they can

[15] DSI, 2004 and Chi-Chi, 2004.

be used to deceive people into believing that limited conservation action is adequate. The Nature article[16] describes seven factors which influence the setting of targets:

- *bio-geographical theory:* concentrating on "island biogeography", the essence of which is that 'bigger is better, closer is better, circular in shape is better, and connected by corridors is better';
- *metapopulation dynamics:* local populations periodically become extinct, but with access to other population sources, can be re-established;
- *source-pool effects:* most regions contain areas at various stages along pathways of ecological succession. To comprehensively conserve biodiversity, all successional stages might need to be protected;
- *spatial autecological requirements:* different species require different amounts of space to complete their life cycles, and many species exploit temporal variation by moving between different habitats at different stages of the cycle;
- *source-sink population structures:* the population of species is not uniform across space – some areas act as high reproduction rate 'sources', while others act as high mortality 'sinks', and there are important flows between the two which should be preserved;
- *effects of habitat modification:* especially where reserves are small and isolated from other natural areas by changed land use, targets for off-reserve conservation are particularly important;
- *treating species as evolutionary units:* it has long been argued that species should be treated as evolutionary units rather than as types – the implication being that by understanding the biological processes leading to diversification, it should be possible to set targets for protecting frameworks for evolution.

At this stage, general, broad goals should be set, with the explicit proviso that they are periodically reviewed in light of the analysis from later stages (especially stages 3 and 4). This acknowledges that the targets may be set as an integral part of policies and government processes, and failure to achieve targets is likely. So, using the framework of these general goals, it should be recognised that fine-tuning the balance between different ecosystems is best done using the contextual data available in the stages which follow.

3) Review existing conservation areas

The analysis should concentrate on three areas:

A) update the analysis of how well each category of PA provides legal and effective protection and conservation of biodiversity;
B) a gap analysis to determine the representativeness of the coverage of ecosystem or vegetation types by existing PA;
C) a gap analysis of the coverage of critical species by existing PA;
D) an analysis of settlements and agriculture / converted areas in relation to PA.

These analyses will make intensive use of a GIS: component layers can be created, from which initial candidate sites may be identified. With the analysis split into these three distinct elements, it will be possible to note any specific issues which arise from each, before compounding them.

A) Currently, only the NP category provides a high level of protection, both in principle and in practice. For all categories the protection offered in practice varies widely, while at the same time, the categories available may be insufficient or inappropriate. This stage investigates the fit between the existing categories (and definitions of those categories) and those required for effective PA management.

B) The analysis stage should begin with a 'gap analysis', updating the analysis from DSI (2004), by using data from stage 1 to compare the existing network of protected areas with the ecosystems occurring in Zambia. The preliminary analysis undertaken for the proposal concluded that of the fourteen major vegetation types in Zambia, only four are adequately covered by national parks (using 10% coverage as the threshold), there is moderate coverage of a further three, minor protection of three, and nil coverage of four[17]. This suggests that Zambia's national parks were not designed specifically for the purpose of protecting representative biological communities as defined by 10% coverage. The picture appears better if

[16] Margules and Pressey, 2000: pp. 246-248.
[17] DSI, 2004.

we include GMAs and Forest Reserves in the coverage analysis, but these categories do not provide adequate legal or *de facto* protection. The level of protection varies in principle between PA categories, and it varies enormously between different sites within the same category of protected area.

In Zambia, only NP status offers a high level of protection, but this is certainly not guaranteed in practice. Although difficult to record, it should also be noted that the level of protection within an individual PA varies through space – for example, the zones around a scout post are likely to be the best protected.

C) Following the suggestion of the Chi-Chi report (2004), in order to complement the ecosystem approach of B) attention should also be paid to critical species. Although this exercise may be severely constrained by the limited availability of data, it is an attempt at a safety-net, to check that no critically endangered species is omitted from the coverage. One should examine the distribution of mammals and birds in particular. The Red Data Lists[18] form the criteria for categorising threat level and cause. Again, care should be taken, since the Lists have traditionally been compiled at global level, and use the convention that the species globally takes on the lowest threat category in its range: some degree of country-specific adaptation is therefore necessary if Red Data Lists are to be effectively applied.

D) The final component layer looks at habitat conversion and human pressures on the landscape. One of the biggest unknowns is the extent of deforestation and conversion of natural areas in the PAs and open areas. There has been no such country-wide analysis done for Zambia for at least 30 years. The deforestation rate is very high – FAO estimate it is 2.4% per year. The condition of NPs is relatively well known, but there is very little data on what is left in the GMAs, forest reserves and other PA. Forest Department has started forest cover loss analyis for selected provinces, and their results (and imagery) should be exploited. Satellite imagery offers the most cost-effective means of assessing cover loss and visual interpretation of imagery should be fully adequate. Landsat TM imagery with a 30m pixel size probably offers the most cost-effective option. New images should be purchased to fill in the gaps where existing imagery in country is not available.

4) Select additional conservation areas

Note: Stages 4 and 5 are closely linked, and are likely to form the main iterative process for compiling a realistically workable system of PAs.

This is initially only a preliminary exercise, since the stages which follow are likely to reveal practical impediments that require both revision of the original targets (stage 2), and reanalysis of the GIS (stage 3). Most convenient is to apply a set of explicit rules in the form of an algorithm, to identify notional targets. By altering the algorithm used, different policy options may be investigated, which is particularly relevant to the goal-setting of stage 2. It is at this stage that practical considerations can be introduced: setting the minimum practical size for an area, desired level of road access, calculation of opportunity-cost of other land-uses, and so on. This process can also take into account the possibility and potential value of creating corridors to strengthen existing 'islands' of protected biodiversity. In Zambia, GMAs are often designed as buffers around the core of a national park. A GMA surrounding a NP is therefore more likely to contain good wildlife populations than an isolated GMA.

The output from the sequence of analysis so far, is a preliminary prioritised list covering existing protected areas for which the level of protection should be *upgraded*, *downgraded* or *de-gazetted*, as well as currently unprotected open areas which should be *gazetted*. Where possible, for the protection of each unrepresented vegetation or habitat type, at least two or three possible sites should be identified. This list will be refined by field visits in stage 5.

5) Candidate site validation and field data collection

In conjunction with stage 4, this stage involves physically surveying the proposed sites for suitability, as well as collecting data which is not available from the remote sources used so far. Sending teams in on the ground will address many concerns which arise from the 'remote' perspective used so far.

[18] From IUCN World Conservation Monitoring Centre

While suitable habitats and vegetation may be identified from imagery and photography, and inferences made about the likely presence of certain species, wildlife populations cannot be assessed from remote sources. Ground counting and consulting local people can produce detailed information on both past and present ranges of species. Also, while conversion to agriculture and some forms of degradation may be quite accurately assessed by remote sensing, the field verification is necessary for many essential types of information.

The local socio-economic and institutional conditions can be crucial to the successful conservation of an area. The economic or cultural values already placed on the resource or area could prove problematic, especially if not recognised. The area might already be a site for conflict between different factions. In the case of new areas under community management, it is critical to determine if there is likely to be support for the conservation initiative.

On the basis of the field visits and tests, the preliminary list produced by stage 4 will be revised. The output from stage 5 will be a prioritised list of sites for reclassification, which will be used in the overall conservation plan for Zambia.

6) Management and monitoring

For the two field demonstration sites only: It is intended that the reclassification planning of the two demonstration sites be completed within the first two years of the project. Development of effective management systems of the areas will be refined and adapted over the next four years and their actual reclassification/gazetting will be achieved during this same period. Bangweulu Field Demonstration will be the principal field site for testing and developing reclassification methodologies.

Conclusion

Zambia's system of protected areas currently does not adequately protect the majority of ecosystems or critical species. Through analysis and investigation, the reclassification exercise seeks to close the gap between PA system coverage and the requirements for adequate biodiversity protection.

The prioritised list of sites for reclassification will be used as essential input to the reclassification and conservation planning process. The use of this systematic conservation planning approach should provide a strong basis for reclassification planning and for its integration into the overall conservation plan for the National System of PA. The overall conservation plan will place heavy emphasis on defining the most appropriate PA category and management type for each individual site. By monitoring the implementation of the Conservation Plan, the new, modified system of PAs will be able to effectively protect a representative sample of Zambia's ecosystems.

ANNEX 7: REPLICATION STRATEGY

The Reclassification and Effective Management project was developed from a detailed identification and analysis of barriers to effective management of the PA estate in Zambia. Strategies for overcoming these barriers include the development of improved legal, policy and governance frameworks, new and more effective forms of PA management partnerships and other tools for effective PA management.

At present, the management of PA in Zambia runs the full gamut of a spectrum ranging from a high level of effective management to low levels of effectiveness. The overall approach of the project is to shift as many PA as possible from the lower positions on this spectrum towards the higher levels of effective management. Improving management effectiveness will involve the development of measures to overcome barriers, testing, adapting and proving this measures and then mobilizing stakeholders and resources for replicating them.

Several activities will be undertaken to ensure that lessons that emerge during and from the project are captured and shared with relevant stakeholders. Measures for identifying and replicating lessons include the following:

1. The very design of this project has been strongly influenced by a half dozen reviews of lessons learned and best practices of community-based wildlife management in southern African. Thus the very basis for the project design is the replication of some of the measures that have been shown to work best across the sub-region;
2. The improved governance framework in Outcome 1 will include a strong knowledge management component. There is no suitable forum at present for exchanges experiences and lessons learned in the PA sector. The creation of the Natural Resources Consultative Forum will fill this gap. Knowledge management will be one of the key functions of the NRCF. NRCF will conduct reviews, assessments, identification of best practices and issues papers and will provide a participatory forum for the presentation and debate of issues by key PA sector stakeholders;
3. The two field demonstration sites (FDS) are key elements of the strategy for replicability. FDS will have a strong focus on community-managed conservation areas (CCA). Nothing is more effective in the replication of CBNRM than having villager-to-villager exchanges. Representatives of all the CRB in the country will be brought to the two FDS in the last two years of the project for awareness raising and direct person-to-person contact with CCA managers and members;
4. Two mid-term reviews at the end of Yrs 2 and 4 and the final evaluation near the end of Yr 6 will play keys roles in identifying project elements that are ready for replication and in developing recommendations/strategies for their effective replications;
5. A key function of the project M&E system is for adaptive management. This includes the identification of what works – and is ready for replication – and the modification of what is not working in order to better achieve project objectives;
6. Other bodies that will play strategic roles in replication will include the Steering Committee, the Technical Advisory Group (TAG) and the Project Coordination Group. The Project Coordination Group will be one of the most effective means of replication because it includes the major donors to the PA sectors and most of the key PA managers/management partners.

The detailed project replication strategy will be based on lessons that emerge from the first phase of the project.

	Strategy	Anticipated Results and impacts	Anticipated Replication strategy/ roll out.
1.	Outcome 1: Appropriate policy, regulatory and governance frameworks are in place providing new tools for public/private/civil society/community PA management partnerships		
1.a	• Improved policy and legal frameworks will include policies for reclassification of PAs and new legislation for two new proposed categories of PA that will provide effective biodiversity conservation. The first will be a community-managed PA where conversion to agriculture or other land uses is not allowed but where communities enjoy full control and benefits from the sustainable, commercial use of wildlife and other NR. A second category of ZAWA-managed safari hunting areas will be created out of sections of national parks that have low potential for photo safaris but where trophy hunting may be a much more financially attractive management option.	At End-of-Project (EOP), the following legislation, policies and policy guidelines have been adopted: ⇒ New policies for reclassification ⇒ A new law for the creation of 2 new categories of PA (CCA and SHA) ⇒ A new policy framework for public/private/ civil society/community partnerships for NP, CCA, GMA & SHA ⇒ A new policy allowing for a single community-level management structure for all renewable natural resources ⇒ New policy/guidelines on the roles of traditional leaders in CBNRM.	⇒ The new policies for reclassification will be based on the on-the-ground, highly participatory approaches developed at the two field demonstration sites. This will make the policies, and their application, as practical, as adapted to Zambian conditions, and, therefore, as replicable as possible; ⇒ The finalization of the CCA policies will be delayed until Yr 4 in order to benefit from the FDS experience, making the new legislation based on real-life field experience. ⇒ Representatives of all the CRBs in Zambia will be brought to the new FDS CCAs for awareness raising and training in CCA benefits and management; ⇒ Funding for the creation of new CCA will be mobilized through the NRCF and the Project Coordination Group. ⇒ New partnerships will be tested at the FDS. The advantages and disadvantages of each form of partnership will be analyzed by all stakeholders through the NRCF, the TAG and the Project Coordination Group. ⇒ The CCA management structures will be empowered to manage all renewable natural resources. This will be replicated in other GMA through modifications of the existing CRB and through the transformation of GMA/CRB into CCA. The Steering Committee and the donors of the Project Coordination Group will ensure that this approach is integrated into the forest and fisheries sectors.
	• Participation in PA sector governance will be improved through the creation of a formal stakeholder platform (Natural Resources Consultative Forum) for civil society inputs into PA sector issues. Improved, transparent financial management systems will be developed for revenue sharing between ZAWA	⇒ PA communities, GMA/CCA managers, tourism investors, private/civil society PA managers, NGOs and other civil society actors participate in open debates on key PA sector issues. Lessons learned	⇒ The advantages and strengths of all these legal and policy reforms will be assessed, presented and debated through the knowledge management function of the NRCF. NRCF stakeholders and donors will invest in the replication of the best practices and successes. (NRCF is funded at $570,000) ⇒ All CRB and representatives of all GMA communities

	Strategy	Anticipated Results and impacts	Anticipated Replication strategy/ roll out.
	and CRB and between CRB and their community constituents.	are documented and diffused.	will receive training in transparent financial management and good governance procedures.
2	**Outcome 2: Institutional capacities for PA system management are strengthened including enhanced capacities for PA representation, monitoring and evaluation, business and investment planning and PA system planning.**		
2a	• A key activity will be the identification of reclassification priorities for improved representativeness of the National PA System. An expanded conservation assessment will include a gap analysis of the coverage of ecosystems by existing PA, identification of candidate PA/sites for filling gaps, forest cover loss analysis of candidate sites followed by bio-physical surveys/status assessments on the ground leading to the final identification of reclassification priorities.	• PA and open area sites that are in need of reclassification and/ or effective management to ensure representative coverage of Zambia's ecosystems/ biodiversity are identified (and are integrated into the Conservation Plan) Reclassification of PA completed at two field demonstration sites.	• Reclassification methodologies are tested/developed at the two FDS for replication elsewhere; • Reclassification priorities will be identified by Yr 3. NRCF and other stakeholders will have participated in their identification. NRCF will mobilize resources for reclassification and for the development of effective management partnerships for the priority sites.
	• New tools for assessing economic efficiency and for PA business planning. One will seek to define cost coefficients and the forms of different public/private/civil society/ community management partnerships that are the most effective and financially sustainable for the priority PA. Investment profiles will be developed for priority unmanaged PA	▪ ZAWA uses business planning as a standard tool for PA management planning. The relative financial cost-effectiveness of the common forms of management partnerships has been quantified and is used in system planning.	• Capacity/human resources for operational use of economic/financial planning tools will be built in ZAWA and PA management partners through short and long-term project-funded training.
	• Improved capacities for monitoring and evaluation will be developed. Particular emphasis will be placed on the monitoring of PA management effectiveness by modifying the WWF/WB METT tracking tool for Zambian conditions. Other foci will be on systems for monitoring of ecosystem health and monitoring of PA management partnerships. Monitoring of wildlife populations for trophy hunting will emphasize local managers monitoring capacities complemented by central level capacities for oversight/spot checking. Testing of improved site level M&E will be	• The METT has been modified for Zambia and is used as a standard tool for all PA managed by, or in partnership with, ZAWA. Monitoring of wildlife for trophy hunting is increasingly accepted as a cost of doing business. Techniques for monitoring ecosystem health have been developed.	• The two mid-term and the final evaluations ($162,000 total) all review the usefulness of the modified METT. These results are disseminated widely; • The usefulness of the modified METT is presented and disseminated to PA sector stakeholders through the NRCF and the Project Coordination Group; • MTENR is encouraged to mandate the use of the METT as a means of government monitoring and oversight of PA management effectiveness; • Donors are encouraged to fund the use of the METT through the NRCF and the Project Coordination Group; • GRZ makes it a policy that monitoring of wildlife

	Strategy	Anticipated Results and impacts	Anticipated Replication strategy/ roll out.
	done at the two demonstration sites.		populations will be required as a standard cost of doing business for CCA and for SHA.
	• All of this will be integrated under a PA System Reclassification and Conservation Plan that will include PA creation, reclassification & declassification, business and marketing planning and M&E. Realistic targets for the total land area of PA will be set. Business planning for the PA system will include the identification of effective management forms for specific PA, investment planning and sustainable financing. This will be complemented by a marketing plan to interest investment partners needed for priority PAs	• The Reclassification and Conservation Plan for the national system of PA is the basic document guiding the reclassification, management and development of priority PA in Zambia. The investment and marketing plans are used to mobilize and direct PA sector investments by private sector investors, donors and GRZ and to identify and mobilize partners for PA management.	• The Conservation Plan, investment plan and marketing plan will be used by GRZ/ZAWA for mobilizing donor funding for the sector and for prioritizing the use of tourism and trophy hunting levies. • These plans and the economic evaluations that support them will be used to convince GRZ of the economic justification for government investments in the PA sector.

ANNEX 8: REFERENCES

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