



Republic of Zambia

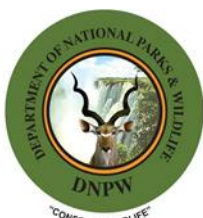
LUKUSUZI NATIONAL PARK NO. 3

GENERAL MANAGEMENT PLAN



2021 – 2031

**Department of National Parks and Wildlife
Private Bag 1
Chilanga**



APPROVAL PAGE

The Government of the Republic of Zambia through the Ministry of Tourism and Arts, Department of National Parks and Wildlife hereby approve implementation of this General Management Plan for Lukusuzi National Park.

Signature.....
Mr. Patrick A. Lungu
Permanent Secretary
Ministry of Tourism and Arts



Signature.....
Dr. Chuma Simukonda
Director
Department of National Parks and Wildlife

Date: 17 May 2021



FOREWORD

This General Management Plan (GMP) for Lukusuzi National Park provides guidelines for the conservation and management of natural resources and tourism development. It provides a framework for the conservation of both natural and cultural resources inside the National Park. It will be in force for 10 years and is subject to review after every five years.

The GMP was generated through a consultative and participatory Planning Process involving key stakeholders with financial support from Deutsche Gesellschaft Fur Internationale Zusammenarbeit (GIZ) Project.

This GMP reflects the DNPW and its partners' determination to preserve the nation's biodiversity and natural heritage, whilst providing investment opportunities through sustainable and responsible tourism development. The GMP has been developed to provide the management and development philosophy of the park and offers an important framework for addressing management problems related to resource protection and management, tourism development, cultural resources management and sustainable use of wildlife resources.

This GMP is a bankable document published in formats that are implementable and suitable for attracting support and investment from stakeholders, private investors, international aid agencies and the Government of the Republic of Zambia as it contains a Strategic Investment Management Action Plan and Budget upon which project proposals could effortlessly be formulated and floated to collaborating partners for possible funding.

My hope and wish is that, this GMP will not just be a document destined to be shelved but treated as a useful and practical document which should be handy to the park management for day-to-day decision making. Pressures facing our National Parks are diverse and increasing in intensity, making park management a difficult and tricky task. This document should provide the framework and direction for management decisions.

Society which provides context in which National Parks exist is dynamic. It requires that this document is not cast in concrete but needs periodic reviews. Minor reviews are set for five (5) years and the major reviews for ten (10) years.

I implore upon managers of Lukusuzi National Park to take this document as their compass for management which will be updated and continually revised. In other words, it should be the most important document on which all those concerned and responsible for Lukusuzi National Park should rely upon.



Chuma Simukonda DSc

DIRECTOR

DEPARTMENT OF NATIONAL PARKS AND WILDLIFE

TABLE OF CONTENTS

APPROVAL PAGE	i
FOREWORD	1
TABLE OF CONTENTS.....	2
LIST OF ABBREVIATIONS AND ACRONYMS.....	6
DEFINITIONS.....	7
EXECUTIVE SUMMARY	9
CHAPTER ONE.....	10
1.0 INTRODUCTION	10
1.1 BACKGROUND	10
1.2 LOCATION, SIZE AND ACCESSIBILITY.....	11
1.2.1 Location and Size.....	11
1.2.2 Accessibility.....	11
CHAPTER TWO	13
2.0PHYSICAL AND BIOPHYSICAL ENVIRONMENT.....	13
2.1 PHYSICAL ENVIRONMENT.....	13
2.1.1 Climate.....	13
2.1.2 Geology and Soils	13
2.1.3 Topography and Hydrology	16
2.2 BIOLOGICAL ENVIRONMENT.....	18
2.2.1 Flora	18
2.2.1.1Miombo Woodland	18
2.2.1.2 Dambo Grasslands	18
2.2.1.3 Mopane Woodlands	18
2.2.1.4 Riparian Woodland	18
2.2.2 Fauna.....	20
2.2.2.1 Mammals.....	20
2.2.2.2 Birds.....	21

2.2.2.3 Reptiles	22
2.2.2.4 Amphibians	22
2.2.2.5 Invertebrates	22
CHAPTER THREE	24
3.0 CULTURAL RESOURCES AND SOCIO-ECONOMIC SCENARIO OF LUKUSUZI NATIONAL PARK	24
3.1 Cultural Heritage	24
3.1.1 Kasangula Cave Rock Art Paintings	24
3.1.2 Kasangula Cave Iron Age Site	25
3.2 Natural Heritage	26
3.2.1 Nyani Falls/ Rapids	26
CHAPTER FOUR	27
4.0 PARK PURPOSE, EXCEPTIONAL RESOURCE VALUES AND SIGNIFICANCE	27
4.1 PARK PURPOSE	27
4.2 EXCEPTIONAL RESOURCES AND VALUES	27
4.3 PARK SIGNIFICANCE STATEMENTS	27
CHAPTER FIVE	29
5.0 MANAGEMENT PROBLEMS AND OBJECTIVES	29
5.1 OVERVIEW	29
CHAPTER SIX	32
6.0 MANAGEMENT ZONE PLAN	32
6.1 OVERVIEW	32
6.2 MANAGEMENT PLAN ZONING CONCEPT	32
6.3 RATIONALE FOR THE ZONING CONCEPT	32
6.4 LIMITS OF ACCEPTABLE USE (LAU)	32
6.5 MANAGEMENT ZONES	33
6.5.1 Zone I - Natural Preservation Zone	33
6.5.2 Zone II- Tourism Development Zone	34
6.5.3 Zone III - Cultural Preservation Zone	35

CHAPTER SEVEN	36
7.0 PROPOSED FUTURE CONDITIONS, TOURISM SITES AND EXPECTED TOURISM VOLUMES	37
7.1 OVERVIEW	37
7.2 PROPOSED FUTURE CONDITIONS	37
7.2.1 Types of Tourism Products	37
7.2.2 Overnight Accommodation Facilities	37
7.2.3 Concession sites and Airstrips	37
7.2.4 Tourist Attraction Sites	38
7.2.5 Potential for Tourism Development.....	38
7.2.6 Proposed Distribution of Site Specific Tourism Facilities in Zones	39
CHAPTER EIGHT	40
8.0 STRATEGIC ENVIRONMENTAL ASSESSMENTS	40
8.1 OVERVIEW	40
8.2 ENVIRONMENTAL IMPACT ASSESSMENT	40
8.3 STRATEGIC ENVIROMENTAL ASSESSMENT	40
8.4 MITIGATION MEASURES FOR POTENTIAL NEGATIVE ENVIRONMENTAL IMPACTS	40
CHAPTER NINE.....	41
9.0 STRATEGIC INVESTMENT MANAGEMENT ACTION PLAN.....	41
9.1 OVERVIEW	41
CHAPTER TEN.....	52
10.0 IMPLEMENTATION PLAN	52
10.1 OVERVIEW	52
10.2 MONITORING AND EVALUATION	52
10.3 FEEDBACK	52
BIBLIOGRAPHY	65

LIST OF TABLES

Table: 2.2.2.1: Mammals sighted in Lukusuzi National Park and estimated population	20
Table: 2.2.2.2: Bird species occurring in Lukusuzi National Park	21
Table 5: Management Problem and objectives	29
Table 9: Options, period and Priority of implementing the SIMAPB	41
Table 9.1: Strategic Investment Action Plan and Budget	42
Table 10: Five year Implementation Plan for Lukusuzi National Park	53

LIST OF FIGURES

Figure 1.2.1: Location of the Lukusuzi National Park.....	11
Figure 2.1.2: Soil types in Lukusuzi National Park	15
Figure 2.1.3: Hydrology and drainage of Lukusuzi National Park.....	17
Figure 2.2.1: Types and distribution of vegetation in Lukusuzi National Park.....	19
Figure 2.2.2: Migratory routes and movement pattern in LNP and surrounding areas	23
Figure 3.1.1: A composite of rock art pictographs at Kasangula cave in Lukusuzi National Park	25
Figure 3.1.2: Pieces of potsherd, sign of Iron Age occupation.....	25
Figure 3.2.1: Dry Season Nyani rapids/waterfalls on Lukuzye river	26
Figure 6.5: Zones of the Lukusuzi National Park	36

LIST OF APPENDICES

Appendix I: Species checklist for Mammals	67
Appendix II: Species Checklist for Birds	68
Appendix III: Checklist for Plant Species	73
Appendix IV: Staff Requirement for Lukusuzi National Park Management	74
Appendix VI: Wildlife outpost required for effective Management of the National Park	76
Appendix VII: List of workshop participants for the first and second workshop for Lukusuzi GMP in Lundazi District.....	77
Appendix VIV: Statutory Instrument for the Gazettement of Lukusuzi National Park.....	85

LIST OF ABBREVIATIONS AND ACRONYMS

AMU	Area Management Unit
CRB	Community Resource Board
DNPW	Department of National Park and Wildlife
EIA	Environmental Impact Assessment
EPB	Environmental Project Brief
EMA	Environmental Management Act N0. 12 of 2011
EPPCA	Environmental Protection & Pollution Control Act No. 12 of 1990
ELAMU	East Luangwa Area Management Unit
GIZ	Deutsche Gesellschaft Fur Internationale Zusammenarbeit
GMA	Game Management Area
GMP	General Management Plan
IUCN	International Union for the Conservation of Nature
LNP	Lukusuzi National Park
LSA	Late Stone Age
PA	Protected Area
PPF	Peace Parks Foundation
SADC	Southern African Development Community
SEA	Strategic Environmental Assessment
SI	Statutory Instrument
SIMAP	Strategic Investment Management Action Plan
SPP	Strategic Planning Process
TFCA	Transfrontier Conservation Area
UNDP	United Nations Development Programme
WIA	Wildlife Impact Assessment
WPO	Wildlife Police Officer

DEFINITIONS

Area Management Unit (AMU) is an administrative geographically delineated area unit under Department of National Parks and Wildlife for wildlife estate in Zambia. An AMU covers one or more National Parks, Game Management Areas and open areas.

Bed-Night Levy is a payment demanded from an operator by Department of National Parks and Wildlife for the nights spent by clients calculated on the basis of the number of beds available.

Bush Camp is a small-scale integration of a site, accommodation units, and minimum equipment to service tourists. The accommodation units are semi-permanent structures.

Lodge is an integration of a site, accommodation units, offices or equipment for either tourism or park management in and around the park. Although the term is comprehensively used, it mainly means the site of accommodation units for tourist (refer to "Lodge") unless an additional word such as "wildlife", "gate" or "staff" is accompanied with it.

Camping Site is a site set aside for campers. Accommodation is mainly Tents, while communal toilets, bathrooms and kitchens are provided.

Developer means any person who, or entity which, proposes to undertake a new project or to repair or extend an existing project which falls within the list of projects provided for in the First Schedule and Second Schedule who, or which, is responsible for obtaining the appropriate authorisation;

Environmental Impact Assessment (EIA) means a systematic examination conducted to determine whether or not a proposed project, or alteration to an existing project, or alternatives, may have significant adverse or beneficial impacts on the environment.

Environmental Impact Statement means the statement described in Regulations 8, 11 and 12 of the EIA Regulations of 1997.

Environmental Mitigation Audit means the systematic, documented, periodic and objective evaluation of the implementation and performance of the impact management plan included in an environmental impact statement and as included in any authorisation licence, permit or permission pertaining to a proposed project or alteration of an existing project.

Miombo is a vernacular word that has been adopted by ecologists to describe those woodland ecosystems dominated by trees in the genera *Brachystegia*, *Julbernardia* and *Isoberlinia* of the family Fabaceae, subfamily Caesalpinioideae (CSA/CCTA 1960; Wild and Fernandes 1967).

Mitigation Measures include engineering works, technological improvements, management measures and other ways and means of preventing, ameliorating or compensating for adverse environmental impacts and losses suffered by individuals and communities and for enhancing benefits.

Outpost is a camp for wildlife police officers set in the periphery of the park in most cases or in the Game Management Area (GMA) to service the outlying areas. Entrance and exit gate camps are also included.

Park Headquarter is an administrative centre for the Lukusuzi National Park, at which there are permanent structures of management facilities and project staff accommodation.

Permanent Structure is a building structure whose base and walls are made of stone or concrete.

Picnic Site is a site provided to day visitors for temporary rest and has sitting facilities to allow visitors take quick meal or snacks. No cooking facilities are provided.

Project Brief means a report made by the developer including preliminary predictions of possible impacts of a proposed project on the environment and constituting the first stage in the environmental impact assessment process;

Project means any plan, operation, undertaking, development, change in the use of land, or extensions and other alterations to any of the above and which cannot be implemented without an authorisation licence, permit or permission from an authorising agency or without approval from a line ministry before entry into a project implementation programme;

Safari Lodge and Safari Camp is an integration of a site, accommodation units, offices and equipment to service tourists. The accommodation units are permanent structures. Safari lodge refers to a large-scale tourist unit with full catering services.

Tourist is a person who enters the park for the purpose of recreation and enjoyment paying appropriate fees.

Visitor is a person who temporarily enters the park legally. This may, for example, be a tourist, government employee on business, etc.

TFCA is an area or component of a large ecological region that straddles the boundaries of two or more countries encompassing one or more protected areas as well as multiple resource use area.

EXECUTIVE SUMMARY

This 10-year (2021-2031) General Management Plan (GMP) has been produced according to the Department of National Parks and Wildlife (DNPW) Strategic Planning Process (SPP). A participatory approach has been adopted to develop the GMP, which has brought together representatives from all the major Lukusuzi National Park stakeholders.

Lukusuzi National Park Purpose and Exceptional Resources

The purpose of Lukusuzi National Park as agreed and defined by the deliberations of the stakeholders through the planning workshop is:-

“To provide for the conservation and protection of diverse wildlife, water catchment and heritage resources, maintenance of ecological connectivity for research and development purposes.”

Zoning Scheme

There are three management zones identified in the Park and these are:-

- a) Natural Preservation Zone
- b) Tourism Development Zone
- c) Cultural Preservation Zone

Proposed Future Conditions

It is hoped that within the ten year period of the GMP, developments to enhance tourism will be considered for Lukusuzi National Park. Proposed developments include among others Safari Lodges, Bush Camps, Picnic Sites, Management Roads, Game Viewing Roads and Loop Roads, Foot Trails and other developmental infrastructure and facilities that may be used for Protected Area (PA) Operations and Management, Research and Education facilities, etc.

The tourism products that have been recommended in this GMP for the Lukusuzi National Park relate to overnight accommodation facilities, game viewing, bird viewing / watching, walking safaris, canoeing, photographing, filming, sound recording, angling, painting and geological, cultural sites, Etc.

However, it should be noted that tourism products are not static and to this effect, DNPW shall encourage innovation and shall be available to include any new tourism products that are environmentally friendly and acceptable in the Park.

Environmental Consideration

The General Management Plan for Lukusuzi National Park provides a formalized approach for dealing with the environmental impacts with a view to providing enough information to enable management make informed decisions on the environmental consequences of developmental proposals in the Park. All developmental projects in Lukusuzi National Park will be subjected to either an Environmental Impact Assessment (EIA) or an Environmental Project Brief (EPB) as

required by the Zambia Wildlife Act No. 14 of 2015 and Environmental Management Act No. 12 of 2011. Whereas EIAs are site specific, the Strategic Environmental Assessment (SEA) addresses issues/impacts at higher level. This is undertaken to evaluate the environmental consequences of proposed policies, plans or programmes associated with the management of the whole Park. These impacts need to be assessed and mitigated in order to ensure that developmental projects are consistent with the objectives of this General Management Plan.

Strategic Investment Management Action Plan and Budget

The Strategic Investment Management Action Plan and Budget (SIMAPB) is developed in respect of the five main themes - Natural Resources, Management and Operations, Local Community, Heritage Resources and Visitor use and experience. This SIMAPB will be subject to review every five years.

The SIMAPB is executed through a “SMART” approach. Based on their significance, urgency and duration required for implementation, the Action Plans are classified into nine options. The time-frame of implementing the SIMAP is based on three scenarios whose implementation is:-

- a) Scenario 1: Within 2 years of ratifying the GMP;
- b) Scenario 2: Within 2 - 4 years of ratifying the GMP;- and
- c) Scenario 3: Beyond 4 years of ratifying the GMP.

Monitoring Plan

A monitoring framework of this GMP makes up the final section of this document. The framework is designed to provide guidance for the regular assessment of the impacts, positive and negative, resulting from the implementation of the major Management targets and actions laid out in this GMP, and a basis for subsequent adaptive management. The framework includes easily assessable measures for measuring these impacts. Monitoring of GMP impacts is a key aspect of the ultimate success of the plan, in ensuring that the overall benefits from the implementation of this GMP are maximized, and that any negative impacts are appropriately mitigated.

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND

Lukusuzi National Park was gazetted as a National Park on 1st February, 1971 under Statutory Instrument number 44 of 1972 and since then it has been managed on an adhoc basis despite it having a draft management plan which was developed in 1970. The basis for the formulation of this GMP has been the

need to improve management of resources in the park and the fact that the park is part of the Malawi - Zambia Transfrontier Conservation Area forming the Kasungu – Lukusuzi component. This GMP will enhance conservation efforts and income generation through improved sustainable tourism development.

1.2 LOCATION, SIZE AND ACCESSIBILITY

1.2.1 Location and Size

The Lukusuzi National Park is approximately 2,720 Km² in size and is located in Lumezi District of Eastern Province. It lies between 12°27'17.1" S, 032°33'38.5"E and 13°5'24.2" S and 032°30'12.9" E. The Park is surrounded by three National Parks namely; Luambe National Park, South Luangwa National Park and Kasungu National Park in Malawi.

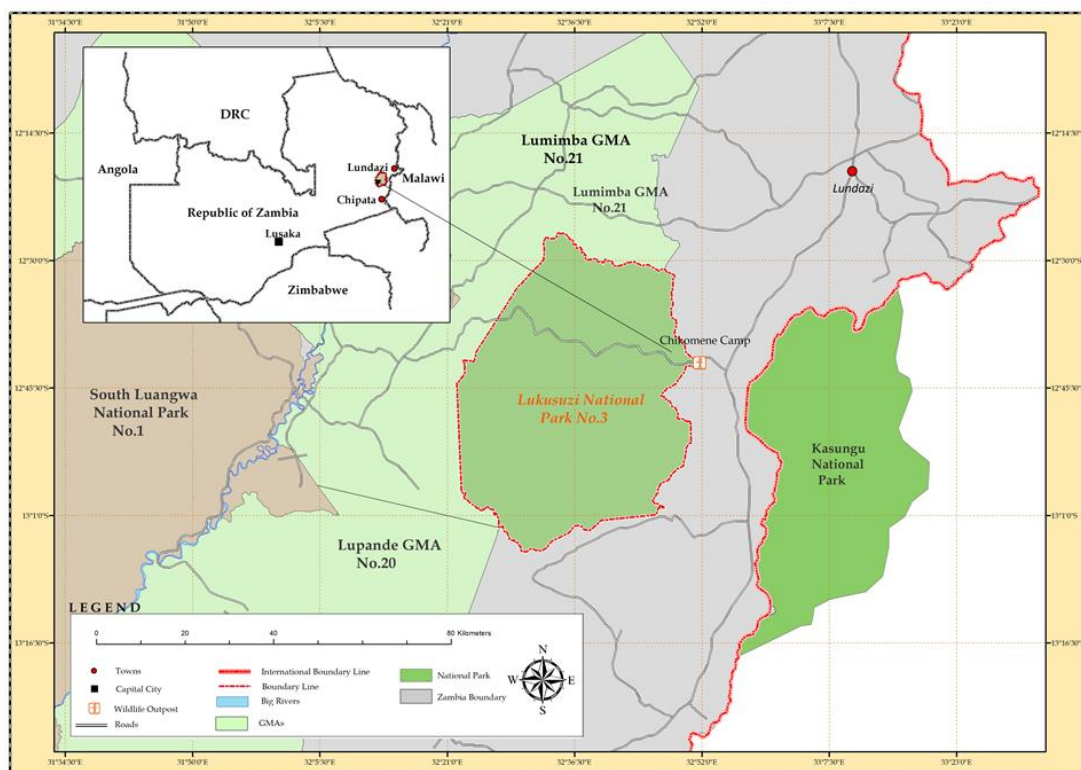


Figure 1.2.1: Location of the Lukusuzi National Park

1.2.2 Accessibility

Lukusuzi National Park can be accessed through the Lundazi-Chipata Road via an 8km gravel road through Chikomeni gate. It is approximately 108 km from Chipata City and 666km from Lusaka City. It can also be accessed from Mambwe District through Changa changa gate in Mwanja Chiefdom of Lumimba GMA.

CHAPTER TWO

2.0 PHYSICAL AND BIOPHYSICAL ENVIRONMENT

2.1 PHYSICAL ENVIRONMENT

2.1.1 Climate

Lukusuzi National Park experiences all the three seasons of Zambia, which include the hot -wet season, cool-dry season and hot- dry season. The hot-wet season is from November to March, the cool-dry season extends from April to August and the hot-dry season is from September to October.

Due to variations in rainfall, soil types and other climatic conditions, Zambia has been sub-divided into three agro-ecological zones of I, II and III. Region I records average annual rainfall of less than 750 mm, region II experiences average annual rainfall of 750 mm to 1000 mm and region III records average annual rainfall of more than 1000 mm. Region II is further divided into Ia and IIa due to soil variations. Lukusuzi National Park lies within region IIa. Average seasonal rainfall of 832.9 mm was recorded for the past 58 years at Lundazi District, which is the nearest station to Lukusuzi National Park.

2.1.2 Geology and Soils

The park is underlain by ancient rocks which have undergone repeated folding and metamorphism and therefore resulting in the total reconstitution of the rocks as the original sedimentary and igneous characteristics have been destroyed. In the west of the park, there are more recent sediments of Karoo age that are only found in this part of the Luangwa Valley.

A large portion of the park is underlain by a variety of gneissic and granitic rocks, which are coarse grained and essentially comprise of quartz, feldspar, and a certain amount of mica and amphibole. The range of hills in the park is composed of original sedimentary sandstone, which was recrystallized to metamorphic quartzite. Other hilly areas are associated with areas underlain by different schists, generally fine grained rocks in which mica is a dominant mineral.

Around the Msidza River and also near the Lukusuzi River, west of the Mburuzi River, minor amounts of recrystallised dolomite and limestone have been recorded. There is a possibility of more dolomite and limestone, but have been less exposed due to thickness of overburden. Dykes of basic igneous rocks also occur in association with any of the above mentioned rocks. Weathering of basic rocks results in localised improvement of the nutritional status of the soil, which translates in improved quality of the vegetation cover (Sayer.1970).

Five major soil types and four mapping units are recognized in the Lukusuzi National Park as follows;

Leptosols cover the largest and central portion of the protected area. These soils are excessively drained to well drained, are dark brown to yellowish brown in colour, friable, stony, gravelly, coarse to fine loamy soils. In these soils the minimum influence of soil forming processes is

typified by the presence of a very shallow soil depth. Leptosols are susceptible to erosion, desiccation, waterlogging though this is dependent on the climate and topography.

Acrisols cover the portion from the central to the east side of the park. These soils are acidic, have a low base saturation and are strongly leached. Within the tropics, acrisols are known to be one of the most infertile soils and become chemically and organically degraded quickly with utilization. Acrisols are well drained, deep to very deep, yellowish red to strong, brown, friable, fine loamy to clayey soils having a clear clay increase with moderately well drained to imperfectly drained, deep to moderately shallow, gravelly clayey soils.

Extending from the central portion to the west of the park, are Luvisols and Vertisols. The colour of these soils is mainly yellowish red to strong brown. These soils are friable to slightly firm, slightly weathered and moderately leached. Content of clayey increases as the depth increases and cracking also occurs in certain places.

Gleysols are found in the south-east of the park. These soils are poorly drained to imperfectly drained, very deep and are brown in colour. They have slightly firm clayey soils.

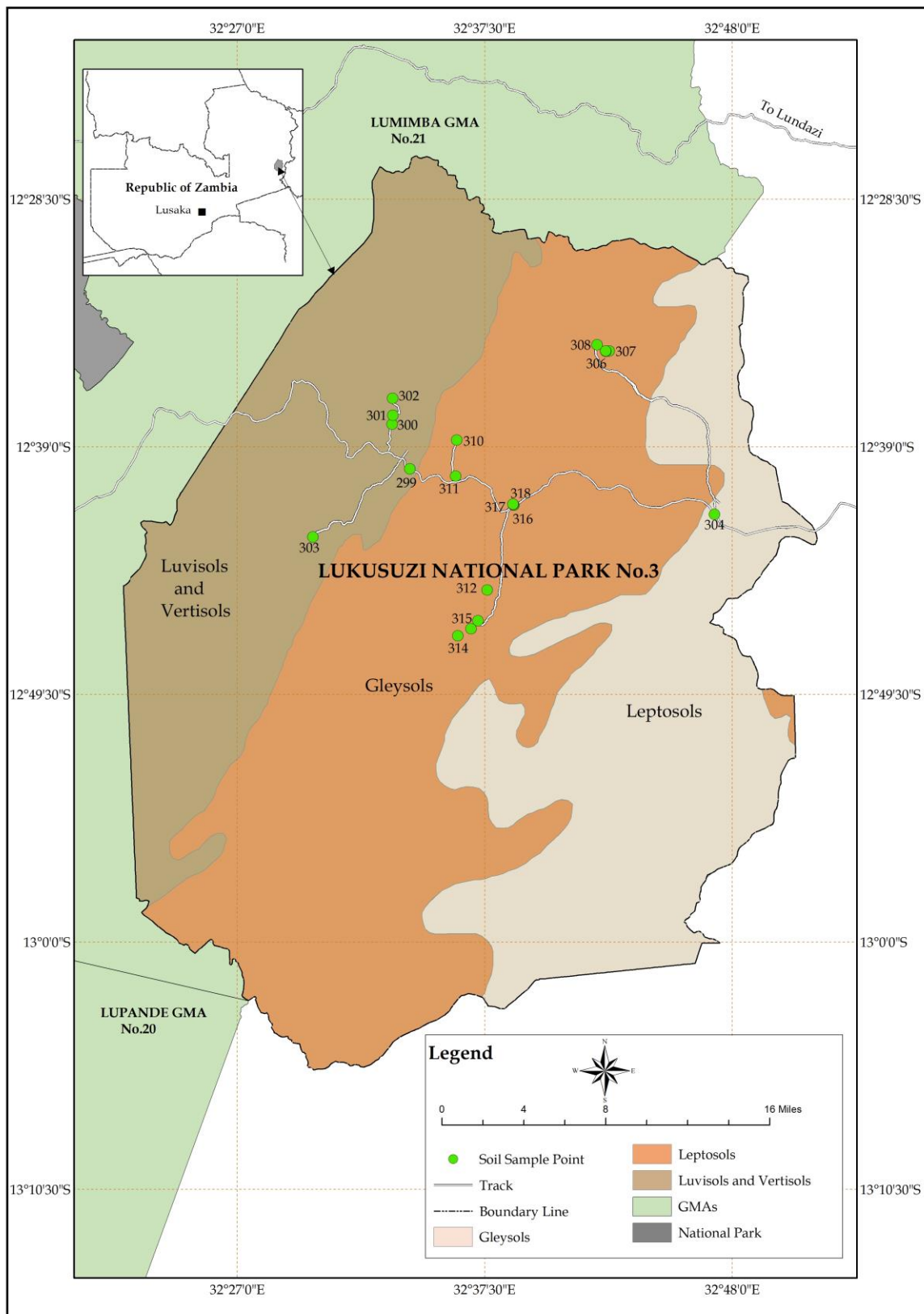


Figure 2.1.2: Soil types in Lukusuzi National Park

2.1.3 Topography and Hydrology

The Lukusuzi National Park has a complex system of steep hills and deeply cut watercourses in the Miombo woodlands found on escarpment hills. Along the rivers and streams, there are narrow fringes. In the dambos, the topography consists of broad shallow drainage depressions of 50 m to 300 m, which form a dendritic network. The land is generally level to slightly undulating on the plateau with Miombo Woodlands.

Lukusuzi National Park forms part of the Luangwa River basin as a number of rivers from the park flow into the Luangwa River. The Lumimba, Lukuzye, Chanje, Munyamadzi and Mwezi rivers are found on the boundary of the park. Within the interior of the park, flows the Kasangula, Lukusuzi, Mburuzi and Lambwe Rivers. Typical of the nature of the Luangwa Valley rivers, the rivers in the Lukusuzi National Park are either seasonal or completely dry up with the cessation of the hot-wet season or break up into pools of water.

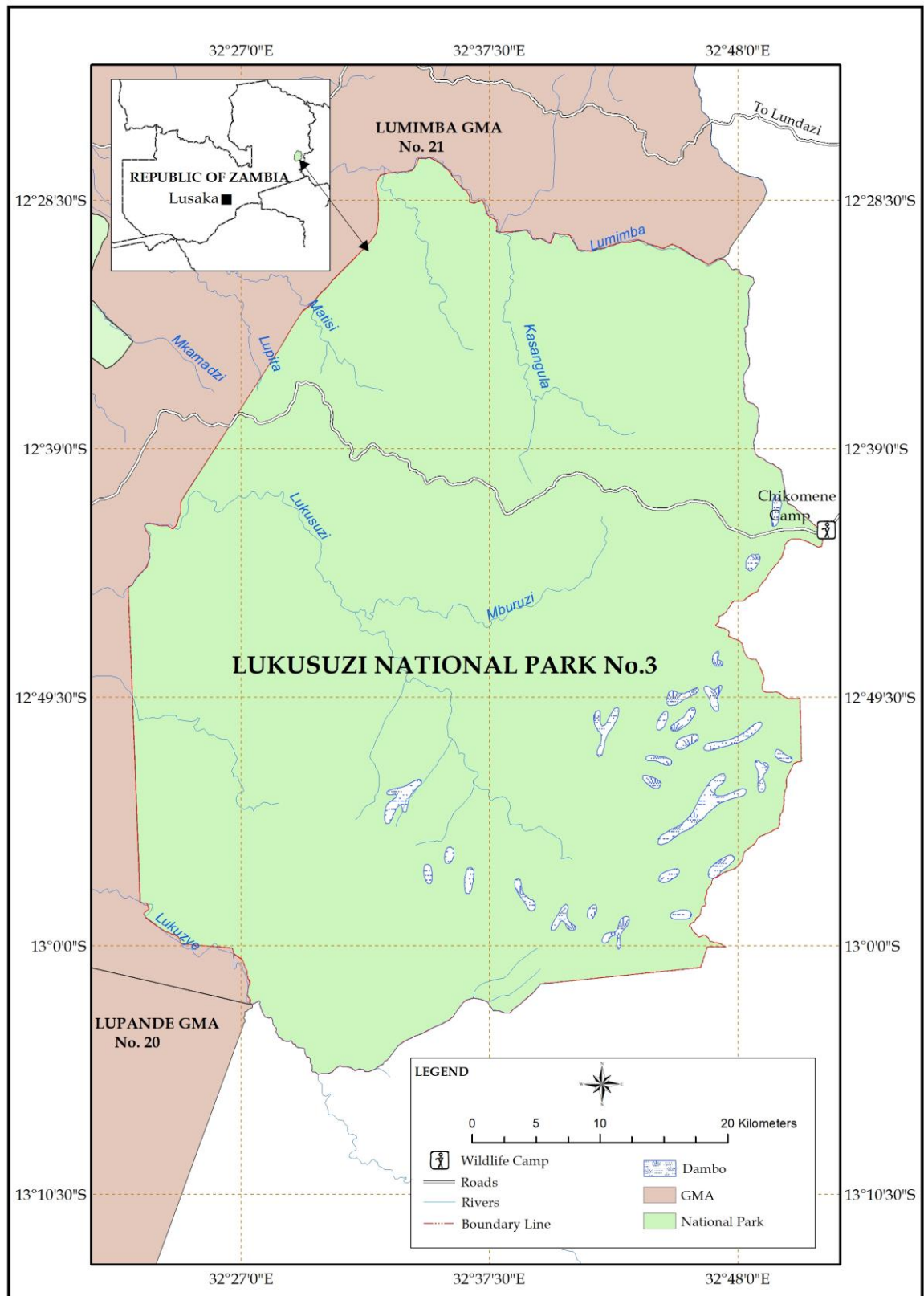


Figure 2.1.3: Hydrology and drainage of Lukusuzi National Park

2.2 BIOLOGICAL ENVIRONMENT

2.2.1 Flora

The flora in the park is dominated by Miombo Woodlands, with patches of dambo grasslands, mopane and riparian vegetation along the rivers and streams.

2.2.1.1 Miombo Woodland

This is the major vegetation type in the park found on the plateau and escarpment. On the escarpment, the Miombo Woodland comprises of *Brachystegia allenii*, *Canthium spp*, *Combretum ghasalense*, *Diospyros kirkii*, *Diplorhynchus condylocarpon* and *Xeromphis obovata*. The grass layer is dominated by *Hyparrhenia spp*. The Miombo Woodland on the plateau consists of *Julbernardia globiflora*, *J.paniculata*, *Brachystegia manga*, *B.spiciformis* and *Terminalia sericea*.

2.2.1.2 Dambo Grasslands

The tree *Syzigium guineense* is commonly associated with the dambos. Main grass species consist of *Acrophalus spp*, *Sphaeranthus spp*, *Echinochloa colonum*, *Eragrostis spp*, *Hyparrhenia spp*, *Loudetia spp*, *Sacciolepis spp* and *Cyperaceae spp*. *Loudetia spp* and *Echinochloa colonum* grow in the drier peripheral areas.

2.2.1.3 Mopane Woodlands

Mopane woodland covers a small portion on the northern part of the Park. It is associated with clay soils. *Mopane Colophospermum* is a very distinctive species, it forms extensive pure stands on the valley floor and lower escarpment slopes.

2.2.1.4 Riparian Woodland

This vegetation type occurs as a fringe along rivers and streams of the park. Trees are evergreen comprising of *Acacia albida*, *Diospyros mespiliformis*, *Khaya nyasica*, *Kigelia pinnata*, *Tamarindus indica* and *Trichilia emetica*.



Figure 2.2.1: Types and distribution of vegetation in Lukusuzi National Park

2.2.2 Fauna

2.2.2.1 Mammals

The group of mammals has probably been more inventorised than any other group in the Lukusuzi National Park. During the baseline survey, twelve (12) species were observed either directly or indirectly. A comparison of information on the composition in the early seventies and recent surveys clearly shows that the number of mammal species has declined in the park. Mammals like impala, puku, cookson wildebeest, oribi, klipspringer and common waterbuck which once existed in the park have become extirpated. As the case is in other parts of the Luangwa Valley, black rhinoceros have been equally exterminated in the Lukusuzi National Park due to illegal off-take.

However, despite the extermination of certain species, it is worthwhile to note that the park still has remnants of other species. A number of large carnivores like spotted hyena, wild dog, and leopard still roam the protected area and even the African lion though rarely seen is heard in the park. The Cheetah which was once resident in the Park is no longer sighted due to unknown reasons. Notably, the park still has a number of charismatic antelope species like eland, roan antelope, sable antelope, hartebeest and kudu which are sighted both on patrols and during aerial surveys.

Table: 2.2.2.1: Mammals sighted in Lukusuzi National Park and estimated population

Species	Estimated population of mammals			
	2009	2012	2013	2015
Buffalo		631	47	
Bushbuck			337	
Bushpig		210		
Common duiker	497		1036	167
Eland			35	
Ground Hornbill			9	
Grysbok		140		
Hartebeest			682	130
Klipspringer			207	
Kudu			902	149
Roan Antelope	1325		2309	167
Sable Antelope		420	125	
Warthog	124	105	889	
Waterbuck			73	

Zebra	124	175	717	
--------------	-----	-----	-----	--

The population of mammals is low in the park (Table 2.2). Past surveys have indicated that the number of observations were low to determine reliable estimates of mammals (GRZ 2015, Howard 2012; 2009). Nevertheless, the park is the only protected area in the Luangwa ecosystem where sable antelope is usually sighted.

Using the IUCN redlist the following species of the park are listed as follows; wild dog is listed as endangered, leopard is listed as near threatened, while elephant, hippopotamus and African lion are listed as vulnerable.

2.2.2.2 Birds

Limited field works have been undertaken in the LNP on birds, but to date 210 species have been recorded. The park is known to have two globally threatened species, twenty-one biome-restricted species and four species of regional conservation concern (Leonard, 2005). Lesser Kestrel (*Falco naumanni*) is one of the globally threatened species, which occasionally passes through the park on its migration and is considered vulnerable, while the other is Olive-headed Weaver (*Ploceus olivaceiceps*), a localised resident. For the biome-restricted species, there are twelve (12) that are categorised as Zambeian endemic and the other nine (9) are considered as Zambeian near-endemic (Table 2.2.2.2).

Within the category of species of regional conservation concern, the Bateleur (*Terathopius ecaudatus*) and Southern Ground Hornbill (*Bucorvus cafer*) are both considered as fairly common and most likely breed within the park. The Goliath Heron (*Ardea goliath*) is known to occasionally occur in the park. Red-billed Oxpecker (*Buphagus erythrorhynchus*), considered rare in the park is the fourth in this category of species of regional conservation concern though its status is uncertain Leonard (2005).

Table: 2.2.2.2: Bird species occurring in Lukusuzi National Park

No	Species	Common Name	Biome Restricted Status
1	Racket-tailed Roller	<i>Coracias spatulatus</i>	Z
2	Pale-billed Hornbill	<i>Tockus pallidirostris</i>	Z
3	Miombo Pied Barbet	<i>Tricholaema frontata</i>	Z
4	Miombo Rock Thrush	<i>Monticola angolensis</i>	Z
5	Kurrichane Thrush	<i>Turdus libonyana</i>	Z
6	Arnot's Chat	<i>Myrmecocichla arnotti</i>	Z
7	Collared Palm Thrush	<i>Cichladusa arquata</i>	Z
8	Red-capped Crombec	<i>Sylvietta ruficapilla</i>	Z
9	Miombo Barred Warbler	<i>Camaroptera undosa</i>	Z

10	Bohm's Flycatcher	<i>Muscicapa boehmii</i>	Z
11	Rufous-bellied Tit	<i>Parus rufiventris</i>	Z
12	White-bellied Sunbird	<i>Nectarinia talatala</i>	Z
13	Miombo Double-collared Sunbird	<i>Nectarinia manoensis</i>	Z
14	Sousa's Shrike	<i>Lanius souzae</i>	Z
15	White-winged Starling	<i>Neocichla gutturalis</i>	Z
16	Chestnut-mantled Sparrow-weaver	<i>Plocepasser rufoscapulatus</i>	Z
17	Bar-winged Weaver	<i>Ploceus angolensis</i>	Z
18	Olive-headed Weaver	<i>Ploceus olivaceiceps</i>	Z
19	Black-eared Seed-eater	<i>Serinus mennelli</i>	Z
20	Dickinson's Kestrel	<i>Falco dickinsonii</i>	Z
21	Central Bearded Scrub Robin	<i>Erthropygia barbata</i>	Z

Z-Zambezian endemic, z-Zambezian near-endemic, Globally threatened species- The site regularly holds significant numbers of a globally threatened species or other species of global conservation concern, Restricted-range species- The site is known or thought to hold a significant component of a group of species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA), Biome-restricted assemblages-The site is known or thought to hold a significant component of a group of species whose distributions are largely or wholly confined to one biome.

2.2.2.3 Reptiles

Reptiles have been poorly inventorised as limited studies have been conducted in the park. However, the park is known to have Nile crocodile and rock or white throated monitor lizard on the Lukusuzi River. Additionally, the park is host to a number of snakes such as black mamba, puff adder, black-necked spitting cobra and African rock python. In the seventies, the park was known to have the girdle tailed lizard in the rocky outcrops and this will require special investigation to determine if this lizard is still resident in the park.

2.2.2.4 Amphibians

Limited information is available on the amphibians of the park. However, the park most likely has eight species that have been documented throughout the country. Seven of the eight amphibian species have been listed as least concern on the IUCN Redlist.

2.2.2.5 Invertebrates

Little is known about the invertebrates of the Lukusuzi National Park as few or no systematic studies have been conducted on this facet of biodiversity. Nevertheless, the field survey encountered dragonflies, butterflies and beetles which require detailed surveys to compile a comprehensive inventory.



CHAPTER THREE

3.0 CULTURAL RESOURCES AND SOCIO-ECONOMIC SCENARIO OF LUKUSUZI NATIONAL PARK

Overview

Lukusuzi National Park has a number of Cultural and Natural Heritage Resources of significance that have not been explored and documented.

3.1 Cultural Heritage

3.1.1 Kasangula Cave Rock Art Paintings

Kasangula Cave Rock Art paintings are located at the following coordinates S12°40'41.5" and E032°45'20.8" within Lukusuzi National Park. It is about 2km off Chikomeni Mwanya Road and about 7 km from the park main entry gate.

The Kasangula Cave has rich rock art paintings which show a sequential and lengthy period of prehistoric human habitation. The paintings include among other traditions; the Red Animal Tradition, Red Geometric Tradition, White Spread-eagled tradition (the art of Chinamwali) and the White Zoomorph Tradition.

The rock surface panel has different motifs which include red geometric paintings such as grids, circles, concentric circles, lines and many anthropomorphic figures with varying degrees of stylization. The site bears a long calendrical story as could be observed of superimpositions of much later paintings on a more faded type of earlier paintings by earlier inhabitants who were the Late to Later Stone Age (LSA).

Other than the Red Tradition pictographs at Kasangula Cave, there are also White zoomorph motifs, largely superimposed on the much earlier Red tradition (about 10,000 years) ago. The white Zoomorph tradition was executed by the early Iron Age communities who must have replaced the hunter-Gatherer societies who for many years had been residents of Central and Southern Africa prior to the coming of the Bantu migrants. However, some of the motifs or figures were linked with sexual introduction of the female initiates. Such motifs include concentric circles and were ably interpreted by elderly women who adduced meaning to the motifs. Further, some of the motifs were purely about the human beings and the environs around them. Such pictographs included animal drawings like the leopard, stick-like human figures, trees, flowers, rain droplets, sun and others. The site is a memorabilia of human occupation and development at different stages of the calendar of history for a period of over 10,000 years ago.

The prehistoric paintings at Kasangula are not different from many of the other sites within the Eastern province region. They form a part of the regional rock art paintings which stretches into Malawi. For instance they are very similar to the paintings of Kalemba Rock shelter in Chipata

City. Others are Manje, Thandwe, Chaingo and Makwe Rock Art Paintings in various parts of Eastern Province.



Figure 3.1.1: A composite of rock art pictographs at Kasangula cave in Lukusuzi National Park

3.1.2 Kasangula Cave Iron Age Site

The floor of the cave is littered with several broken pieces of pottery associated with the Iron Age communities. The pieces indicate varied uses based on the smoothness, color, lips and form which explain that some of the pottery were from cooking pots while others were for storage.

The potsherds have diverse decorations which are used to determine the archaeological cultures they belong. The pottery assemblages and designs such as dots, interlocking triangles, short and long lines also determine the culture and periodization of the communities which occupied the site.

The site requires enhanced protection from poachers who have been putting fires which have in turn created soot and dust which have adversely affected the paintings and disoriented the context of surface archaeological remains.



Figure 3.1.2: Pieces of potsherd, sign of Iron Age occupation

3.2 Natural Heritage

3.2.1 Nyani Falls/ Rapids

Nyani rapids, locally known as Nyani waterfalls are accessed from Chinunda Chiefdom. The rapids are on the Lukuzye River along the stretch where the river forms the south westerly boundary of the Lukusuzi National Park.

Although the river is seasonal and dries out, it is choked with massive and gigantic rock outcrops which form a definite spectacle during and after the peak of the rain season. The white water manifest into a waterfalls-like scene thereby supplying a visitor with a rare sight of white water rafting scenery and a rumbling natural phenomena which punctuate the season of a largely dry and semi-arid area.

The site offers great beauty during the February-April season when the streams and rivers are flooded and burst their fast cascading waters through the hills into the Lukuzye River.

The Nyani rapids form seasonal waterfalls in that it dries up during the dry season but offers a beautiful rock garden then and keeps portions of lagoons which invite wildlife. At this point, the area is host to several species of animals which come to drink water.



Figure 3.2.1: Dry Season Nyani rapids/waterfalls on Lukuzye river

CHAPTER FOUR

4.0 PARK PURPOSE, EXCEPTIONAL RESOURCE VALUES AND SIGNIFICANCE

4.1 PARK PURPOSE

The following statement represents the purpose of Lukusuzi National Park:-

To provide for the conservation and protection of diverse wildlife, water catchment and heritage resources, maintenance of ecological connectivity for research and economic development.

4.2 EXCEPTIONAL RESOURCES AND VALUES

The following exceptional resources and values were identified for the Lukusuzi National Park:-

- a) Presence of diverse landscape formations (hills, flatland, dambos such as Nyabanda 1, 2 and 3); Availability of intact habitats (Miombo woodlands, Dambo grasslands);
- b) Presence of diverse antelope species (Sable, Roan antelope, Kudu, Hartebeest, Eland);
- c) Abundance of Sable antelope and common duiker;
- d) Presence of waterfalls and rapids such as Nyani Falls;
- e) Availability of water springs;
- f) Presence of unique heritage sites e.g Caves, Iron Age smelter, rock paintings.

4.3 PARK SIGNIFICANCE STATEMENTS

The following are the significance statements for the Lukusuzi National Park:-

- a) Lukusuzi National Park forms part of the watershed for Lukusuzi River, Lukuzye and Lumimba which forms the recharge system for the Luangwa river;
- b) Lukusuzi National Park holds a high number of sable antelope in the Luangwa ecosystem;
- c) The Lukusuzi National Park is an integral part of the Malawi -Zambia Transfrontier Conservation Area as it provides the ecological connectivity to Kasungu National Park in Malawi;
- d) Lukusuzi still has suitable habitat for black rhino re-stocking;
- e) It is also home to important heritage sites such as Nyani falls/ Rapids, Kasangula archaeological caves and rock paintings;
- f) The Miombo woodlands in the park protect the catchment area which in turn improves hydrology and subsequently supports the eco-system;

- g) Lukusuzi NP is a potential area for Carbon business;
- h) It contributes to gene flow in order to avoid biological islands that are susceptible to disease outbreaks.

CHAPTER FIVE

5.0 MANAGEMENT PROBLEMS AND OBJECTIVES

5.1 OVERVIEW

The management problems and management objectives in the National Park are categorized into five themes, namely:-

- a) Natural resources management;
- b) Operations and management;
- c) Visitor use and experience management;
- d) Local community associated management
- e) Heritage resources management

Table 5: Management Problem and objectives

Themes	Management Problems	Management Objectives
Natural Resources	Inadequate information on park biophysical resources	To generate adequate biophysical information for park management
	Occurrence of illegal mining	To prevent the occurrence of illegal mining
	Occurrence of unplanned and uncontrolled fires in the Park	To reduce occurrences of unplanned and uncontrolled fires in the Park
	Limited water points	To ensure availability of adequate water points in the park
	Seasonality of streams and rivers	To promote and regulate activities leading to seasonality of streams
	Illegal off-take of wildlife	To prevent the rate of illegal wildlife off-take
	Illegal fishing in the park	To prevent incidences of illegal fishing in the Park
Operations and Management	Poor working conditions with respect to staff accommodation, field equipment and office facilities	To motivate staff with respect to staff accommodation, field equipment and office facilities
	Inadequate financial support	To improve Park's financial base and attain self-sustenance level
	Inadequate transport, construction gear and other equipment	Acquire adequate and relevant logistical equipment
	Inadequate training for in-service staff to enhance their capacity;	To enhance the performance of in service staff through training
	Inadequate wildlife outposts	To ensure the four closed wildlife outposts are re-opened
	Inadequate and poor road	To open and improve road network in the park

	infrastructure for effective management of the park.	for management operations
	Encroachment	a) To ensure that Park boundary is clearly marked b) To prevent encroachment in the Park.
	Lack of law enforcement radio communication system (VHF) in the Park	To improve radio communication for law enforcement operation.
Visitors Use and Experience	Poor accessibility	To improve and develop road network and airstrips
	Lack of tourism infrastructure such as lodges and campsites	To establish tourist facilities such as lodges, campsites
	Decreased wild animal population	To ensure an increase in wild animal population
	Lack of visitors information centres and website	To establish a visitors information centres and creating a website centres
	Lack of marketing and promotion	To make the park products known to both local and international clients
	Lack of electricity supply energy	To have electric energy in the Park
Local Community Associated Management	Poor conditions of service for Community Scouts resulting into low motivation and low morale;	To boost morale of Community Scouts
	Ad-hoc management regime of the surrounding communities due to absence of GMP	To develop an Integrated Development Plan for the surrounding communities
	Inadequate information and understanding concerning the roles of the community in wildlife management	To avail information to the community on wildlife management.
Heritage Resources	Inadequate information on heritage sites in the area	To gather information on natural and cultural heritage sites.
	Inadequate human resource	To recruit a heritage officer in the district
	Inadequate funding for research and development	To increase funding for heritage research
	No trails and other access infrastructure to heritage resource sites of the park;	To open trails and construct access infrastructure leading to the heritage sites.
	No publicity on heritage resources of the park	To enhance community public awareness and promote sustainable heritage resources management of the park

	Non gazetted state of natural and cultural sites as national monuments;	To declare all heritage sites as national monuments.
--	---	--

CHAPTER SIX

6.0 MANAGEMENT ZONE PLAN

6.1 OVERVIEW

This Chapter presents the Zoning Scheme for Lukusuzi National Park. The scheme is designed to harmonize and reconcile the different land-use options of the National Park. It identifies geographical areas within which similar land-uses shall be practised. Importantly, it defines what can and cannot take place in the different zones with regards to conservation and development effort. The respective delineated zones constitutes the zone description of natural resources status; zone purpose; zone accessibility; zone visitor use and experience; zone permissible activities; zone prohibited activities, zone permissible developments; zone prohibited activities and zone prohibited developments.

6.2 MANAGEMENT PLAN ZONING CONCEPT

Management zoning is concerned with what should be done and where. The aim is to zone the area in such a way that the activities to be undertaken in each zone would be responsive to needs for enhancing, the requirements for sustainable natural resources conservation.

6.3 RATIONALE FOR THE ZONING CONCEPT

A number of factors were taken into consideration when developing the zoning scheme for the Protected Areas in order to ensure that it:-

- a) Offers protection to all identified exceptional resources and values;
- b) Takes note of the physical limitations imposed by the landscape and important ecological features;
- c) Provides a diversity of appropriate visitor experience and visitor use levels within the set limits;
- d) Offers dispersal areas and control visitor numbers to ensure quality experience and appropriate numbers, types and placement of tourist facilities within the Protected Areas; and
- e) Provides a better means of surveillance by the Protected Areas Management.

6.4 LIMITS OF ACCEPTABLE USE (LAU)

The regulatory principle for setting parameters of use for different zones of the Protected Area is that tourist's use of the Protected Area will have primary emphasis on the desired conditions of the resources and values rather than the maximum amount of using the Protected Area could possibly endure. This GMP is not attempting to maximize on the use of resources by determining the "carrying capacity" of how much use and development the Protected Area can abide.

Therefore, the planning effort for this GMP promoted the concept of "Limits of Acceptable Use" (LAU) that are agreed for each zone and the entire Protected Area. The LAU system lays primary focus on the conditions desired (both biophysical and social), rather than on the maximum amount of use and development of the Protected Area can endure. The zoning scheme developed for the Protected Area is steered by the LAU concept through defining the desired future conditions, which must be achieved by implementing the different strategies in the plan.

6.5 MANAGEMENT ZONES

There are three (3) management zones that have been identified for Lukusuzi National Park, namely:

- a) Natural Preservation Zone
- b) Tourism Development Zone
- c) Cultural Preservation Zone

6.5.1 Zone I - Natural Preservation Zone

Description: This zone covers an area of approximately 1308.10 km² of Lukusuzi National Park and it comprises of two portions in the northern and southern parts of the park as shown in Figure 6.5. Both portions are hilly and dominated by miombo woodlands with patches of dambos. However, the northern portion of this zone also has patches of mopane woodland. The zone comprises of all the identified heritage resources except the Kasangula caves.

Purpose: To conserve biodiversity and ensure provision of ecosystem services while allowing minimum human activities.

Accessibility: Road and air

Visitor Use and Experience

Photographic Safaris	Birding	Educational Tours	Research
Picnicking	Hiking	Sound recording	Camping

Permissible Activities

Game Viewing	Birding	Management and Operations		Sound Recording	Research	
Photographing	Picnicking	Walking Safaris	Angling	Educational Touring	Filming	Hiking

Permissible Developments

Management and Operations	Infrastructure	Camp Site	Picnic Site	Roads	Game viewing loops
Telecommunication Infra.	Bush Camp	Repeater Stations	Bridges and Culverts	Water point	

Prohibited Activities

Pollution	Logging	Cultivating	Mining	Collecting of forest products
Entry without permit	Removal of beacons	Hunting	Uncontrolled Fires	

Prohibited Developments

Resettlement Scheme	Saw mills	Settlements	Hotels	Farm block
---------------------	-----------	-------------	--------	------------

6.5.2 Zone II- Tourism Development Zone

Description: The Tourism Development Zone is located in the central region of the park covering an area of 1,087.98 km² approximately. The southern and northern boundaries of the zone are marked by the major rivers of the Park and it harbours most of the streams and rivers of the Park. The major vegetation type is miombo woodland interspaced by dambos.

Purpose: To provide for Tourism infrastructure development and the associated activities.

Accessibility: Road

Visitor Use and Experience

Photographic Safaris	Bird Watching	Canoeing
Recreation	Filming and Bird Sound Recording	Research and Education
Camping		

Permissible Activities

Game Viewing	Bird Watching	Canoeing
Photographing	Filming	Research and Education
Picnicking	Walking Safaris	Lodging
Management and Operations	Sound Recording	

Permissible Development

Electricity Installations	Lodges	Water points	Picnic sites
Airstrip	Access Roads	Game viewing loops	Telecommunication Infrastructure
Safari Camp	Bush camps	Campsites	Angling
			Bridges and Culverts

Prohibited Activities

Pollution	Fishing	Setting up fires	Collecting of forest products
Hunting	Deforestation	Mining	

Prohibited Developments:

Farm blocks	Game Ranch	Settlements	Setting up of beehives
-------------	------------	-------------	------------------------

6.5.3 Zone III - Cultural Preservation Zone

Description: The Zone covers an area of approximately 377.68 km². The Kasangula River forms the southern boundary of the zone and it is the only zone currently known to have rock paintings.

Purpose: To provide for the preservation and protection of the Kasangula Cave.

Accessibility: Road

Visitor Use and Experience

Game Viewing	Birding	Research and Education	Walking Safaris
Viewing rock paintings	Filming		

Permissible Activities:-

Birding	Game Viewing	Educational Touring
Photographing	Filming and Bird Sound Recording	Research
Walking Safaris	Management and Operations	

Permissible Development:-

Picnic Sites	Water points	Access road	Bore holes
--------------	--------------	-------------	------------

Prohibited Activities:-

Pollution	Farming	Hunting	Deforestation	Mining	Fishing	Uncontrolled Fires
-----------	---------	---------	---------------	--------	---------	--------------------

Prohibited Developments:-

Farms	Settlements	Game Ranch/Conservancy
-------	-------------	------------------------

“However, it should be noted that tourism products are not static and to this effect, Department of National Parks and Wildlife shall encourage innovation to include any new tourism products that are environmentally friendly and acceptable. Where need be, Department of National Parks and Wildlife and the community shall adjust the GMP to allow the implementation of such innovations and new business strategies”.



Figure 6.5: Zones of the Lukusuzi National Park

CHAPTER SEVEN

7.0 PROPOSED FUTURE CONDITIONS, TOURISM SITES AND EXPECTED TOURISM VOLUMES

7.1 OVERVIEW

Lukusuzi National Park has huge potential for tourism growth due to its ecological connectivity with Luambe National Park and South Luangwa National Park and the Kasungu National Park in Malawi. However, Lukusuzi is the least visited park in the Luangwa Valley among the aforementioned parks.

The Proposed Future Conditions, Tourism Sites and Expected Tourism Volumes of Lukusuzi National Park are inferred in order to provide sustainable management of the PA. The types of tourism products, overnight accommodation facilities and proposed distributions of site specific tourism facilities are outlined below.

7.2 Proposed Future Conditions

The proposed future conditions for Lukusuzi National Park are the proposed developments which ought to be developed within a ten year period when this GMP will be in force. These includes among others Safari Lodges, Bush Camps, Picnic Sites, Management Roads, Game Viewing loops, Foot Trails, Sign Posts, Hides, airstrips and other developmental infrastructure and facilities that may be used for PA Operations and Management.

7.2.1 Types of Tourism Products

The types of tourism products that have been recommended in this GMP for the National Park relate to overnight accommodation facilities, game drives, walking safaris, game viewing, canoeing, photographing, filming, sound recording, angling and cultural sites, Etc. *However, tourism products are not static and to this effect, DNPW shall encourage innovation and shall be available to include any new tourism products that are environmentally friendly and acceptable.*

7.2.2 Overnight Accommodation Facilities

A variety of overnight accommodation facilities, which are proposed for the National Park, includes 2 Lodges; 3 Bush Camps; 2 Tented Camps, 2 Camp sites and 3 Picnic Sites.

7.2.3 Concession sites and Airstrips

Currently, Lukusuzi National Park does not have any site under concession or any existing airstrip. In addition, the park does not have any tourism facilities for visiting tourists. In the last five years the park has not recorded any tourist visits.

7.2.4 Tourist Attraction Sites

Lukusuzi National Park has a number of tourist attraction sites that can commercially improve the park's economic profile and tourism growth. These sites include the following:-

a) Lukuzye Rapids

The Lukuzye Rapids lies on the Lukuzye River. These “whitewater” occur on the rocky portion of the river bed. It is at this section of the river where the head water begins and water runs fast. Due to the aridity of the Luangwa valley, there is no flowing water in Lukuzye River during the dry season except in the rainy season. The rapids are at its peak between January and February when the rainy season is at its helm.

Animal population is high at these rapids; species which roam this area include; wild dogs, Kudu, Lion, Zebra and Warthog.

b) Nyani Falls

Nyani falls is located on Lukuzye River characterized by granite rocks. This portion of the river comprises of huge rock boulders on the opposite end of the river bed creating a narrow passage between the boulders that constricts the flow of headwater into a splash that creates a waterfall. The falls is at its peak between January and April at the helm of the rainy season.

c) Kasangula Cave

Kasangula Cave is a hollow space in a hill that may have been occupied during the Stone Age period. Inside the cave there are various schematic and naturalistic paintings and drawings.

d) Malidonga Spring

The spring is located on the southern portion of the park. It is one of the water points in this portion of the park and has good sightings of animals. The terrain is also good for development of tourism infrastructure.

7.2.5 Potential for Tourism Development

Lukusuzi National Park lies on the plateau area of the Luangwa river basin valley. In comparison to other national parks in the Luangwa ecosystem, it has a relatively cool weather condition which has contributed to the unique characteristic in the combination of its Miombo vegetation community. According to the aerial wildlife surveys conducted in 2013 and 2015, Lukusuzi National Park holds the highest number of Sable antelope due to its plateau Miombo which is ideal habitat for sable antelope.

The park also has very close ecological connectivity with North, South and Luambe National Parks which can enhance tourism growth once management operations are intensified. In addition, the park serves as a link to the entire Luangwa ecosystem with the Kasungu National Park in Malawi. Thus, its location plays a pivotal role as an animal migratory corridor for the Malawi – Zambia Transfrontier area.

7.2.6 Proposed Distribution of Site Specific Tourism Facilities in Zones

Table 4 lists the number of overnight tourist accommodation facilities proposed for the Natural Preservation and Tourism Development zones in the National Park.

Table 7.2.6: Proposed Tourist accommodation and site specific tourist facilities in the Park

Name of the Zone	Type of Facility	Status of Facility	No. of Beds/Tents	No. of Guests
Natural Preservation	Bush Camp	Proposed	8	8
	Camp site	Proposed	10	20
	Camp site	Proposed	10	20
Tourism Development	Lodge	Proposed	20	20
	Lodge	Proposed	20	20
	Bush Camp	Proposed	20	20
	Bush Camp	Proposed	8	8
	Picnic Site	Proposed		8
	Picnic Site	Proposed		10
Totals for Minimum Proposed Overnight Facilities			<u>96</u>	<u>134</u>

CHAPTER EIGHT

8.0 STRATEGIC ENVIRONMENTAL ASSESSMENTS

8.1 OVERVIEW

The environmental considerations of the General Management Plan for Lukusuzi National Park provides a formalized approach for dealing with the environmental impacts of the plan with a view to providing enough information to enable management make informed decisions on the environmental consequences of developmental proposals in the Park. All developments to be implemented are expected to have environmental impact assessment studies undertaken. These impacts need to be assessed and mitigated in order to ensure that developmental projects are consistent with the objectives of this General Management Plan.

8.2 ENVIRONMENTAL IMPACT ASSESSMENT

All developmental projects in the Lukusuzi National Park will be subjected to either an Environmental Impact Assessment (EIA) or an Environmental Project Brief (EPB) as required by the Zambia Wildlife Act No. 14 of 2015 and Environmental Management Act No. 12 of 2011.

8.3 STRATEGIC ENVIROMENTAL ASSESSMENT

Where as EIAs are site specific, the Strategic Environmental Assessment (SEA) addresses issues/impacts at higher level. This is undertaken to evaluate the environmental consequences of proposed policies, plans or programmes associated with the management of the whole Park.

8.4 MITIGATION MEASURES FOR POTENTIAL NEGATIVE ENVIRONMENTAL IMPACTS

Mitigation measures against negative environmental impacts on the environment for each developmental projects shall comply with the appropriate or nearest measures described under the EMA and other relevant legislations in the country. In addition, the Management team for the Park shall enforce any other measures that would further secure the environment as long as such measures are not practically unreasonable and are well communicated to the affected party. Mitigation measures and recommendations are proposed with regard to developmental projects within and around the Lukusuzi National Park include: grading management roads, game viewing loops, construction of a safari lodge, construction of a bush camp, developing a picnic site, constructing an airstrip, constructing camping sites, etc.

CHAPTER NINE

9.0 STRATEGIC INVESTMENT MANAGEMENT ACTION PLAN

9.1 OVERVIEW

The Strategic Investment Management Action Plan (SIMAP) is developed in respect of the five main themes - Natural Resources, Management and Operations, Visitor Use and Experience, Local Community and Heritage Resources. This SIMAP will be subject to review every five years.

The SIMAP is executed through a “SMART” approach. The tasks must be Specific, Measurable, Achievable, Realistic, and Time-bound. Based on their significance, urgency and duration required for implementation, the Action Plans are classified into nine options shown in Table 5 below. The time-frame of implementing the SIMAP is based on three scenarios whose implementation is:-

- a) Scenario 1: Within 2 years of ratifying the GMP;
- b) Scenario 2: Within 2 - 4 years of ratifying the GMP and
- c) Scenario 3: Beyond 4 years of ratifying the GMP.

Table 9: Options, period and Priority of implementing the SIMAPB

No	Options	Priority
1	Short Term	High
2	Short Term	Medium
3	Short Term	Low
4	Medium Term	High
5	Medium Term	Medium
6	Medium Term	Low
7	Long Term	High
8	Long Term	Medium
9	Long Term	Low

Table 9.1: Strategic Investment Action Plan and Budget

Theme	Problem	Objective	Activities	Strategy	Priority	Time Frame	Responsibility Lead & Other Organisations	Estimated Cost (US\$) Per Year	Possible Sources of Funding
Natural Resources	Inadequate information on park biophysical resources	To generate adequate biophysical information for park management	a)Developing biophysical assessment and monitoring protocols for the park b)Conducting biophysical surveys and research in the park	a)Identify key areas of biophysical assessment and research b)Develop biophysical assessment protocols c)Carry out biophysical assessment and research in the park d)Analyse and prepare biophysical assessment and research reports	Long term-High Priority	On-going	DNPW, National Museums, Local and Foreign Universities, individual researchers	25,000.00	GRZ, Cooperating Partners
	Occurrence of illegal mining	To prevent the occurrence of illegal mining	a)Conducting regular monitoring patrols into the park b)Maintaining regular communication with the Mining Department	a)Identify areas prone to illegal mining b)Plan for regular patrols to areas prone to illegal mining c)Plan for quarterly meetings with Mines Department	Short term-Medium Priority	On-going	DNPW, Mines Department,	10,000.00	GRZ, Cooperating partners
	Occurrence of unplanned and uncontrolled fires	To reduce the occurrence of unplanned and uncontrolled fires in the park	a)Developing and implementing a fire management plan for the Protected Area b)Conducting community	a)Gather information for the fire management plan b)Prepare Lukusuzi NP fire management plan	Short term-High Priority	On-going	DNPW,ZFD	4,000.00	GRZ, Cooperating Partners

			sensitization around the park c)Conducting prescribed burning in the Park d)Opening firebreaks	c)Implement the fire management plan for Lukusuzi NP c)Hold sensitization meetings in the communities surrounding the park					
	Limited water points	To ensure availability of adequate water points in the park	a)Identifying sites for water points b)Carrying out assessment of sites for water points	a)Map out sites for water points in the park b)Assess proposed sites for suitability of water points c)Drill boreholes for water points	Medium term-High Priority	2 years upon approval of the plan	DNPW, Water Affairs, Water Resources Management Authority, Lumezi Council	30,000.00	GRZ, Cooperating Partners
	Seasonality of streams and rivers	To regulate activities leading to seasonality of streams	a) Implementing mitigation measures to prevent seasonality of streams and Rivers	a) Conduct a study to identify factors responsible for seasonality of streams/Rivers b) Identifying factors responsible for seasonality of streams & Rivers	Medium term-Medium Priority	On-going	DNPW, Water Affairs, Water Resources Management Authority, Lumezii Council	25,000.00	GRZ, Cooperating Partners
	Illegal off-take of wildlife	To reduce the rate of illegal wildlife off-park take	a) Identifying gaps in law enforcement in the park b)Implementing an effective law enforcement strategy in the park	a)Carry out an assessment to identify gaps in law enforcement b)Design an effective law enforcement strategy for the park	Long term- High Priority	On-going	DNPW, Zambia Police, CRB	36,000.00	GRZ, Cooperating Partners

	Illegal fishing in the park	To prevent incidences of illegal fishing in the Park	a) Increasing law enforcement activities in the park b) Promoting aquaculture, Community game ranching and livestock in the surrounding communities of the Park.	a) Conduct sensitization meetings in the communities surrounding the park b) Carry out regular patrols in the park	Short term-Medium Priority	On-going	DNPW, Fisheries Department	100,000.00	GRZ, Cooperating Partners
Operations and Management	Poor working conditions with respect to staff accommodation, office accommodation and office equipment	To motivate staff with respect to staff accommodation, office accommodation and office equipment	Construction of a) decent staff houses b) office accommodation c) Procurement of office equipment	a) Rehabilitate and construct houses at the four closed wildlife outposts at (Lusangazi, Mwasempangwe, Kalindi, Chenche) and existing outposts (Chikomeni and Lumamba) b) Construct offices and entry gates for Lukusuzi National Park (i.e chikomeni and changachanga gates) c) Procurement of office	Long Term and High Priority	On-Going	DNPW, IFAW, GIZ, ZIFLP and other cooperating Partners	826,000	DNPW, DNPW, IFAW, GIZ, ZIFLP and other cooperating Partners
	Inadequate financial support	To improve Park's financial base and attain self-sustenance level	a) Advertising identified tourism sites; b) Establishing camping sites in the Park; c) Encouraging local	1) Place adverts in local and international media. 2) To tender the identified tourism sites.	Short Term – High Priority	On-going	DNPW, IFAW, GIZ, ZIFLP and other Cooperating partners	200,000	DNPW, IFAW, GIZ, ZIFLP and other cooperating partners

			and international tourism through marketing programmes;						
	Inadequate transport, construction gear and other equipment	Acquire adequate and relevant logistical equipment	Sourcing / Mobilizing financial resources to procure all required field equipment.	a) Purchase transport (6 4x4 Land cruisers , 6 (Vehicles, Motor bikes, Tractor), 2 tractors and trailers and a bulldozer b) Purchase field patrol equipment (Uniforms, Camping kits, VHF radios, GPS and repeater)	Short Term – High Priority	On-going	DNPW, IFAW, GIZ, ZIFLP and other Cooperating partners	200,000	DNPW, IFAW, GIZ, ZIFLP and other cooperating partners
	Inadequate training for in-service staff to enhance their capacity;	To enhance the performance of in service staff through training	a) Carrying out an in-service training needs assessment b) Providing scholarships for in-service training c) Holding of workshops for in-service staff	a) Identify and train staff 2)Source for scholarships for in-service training 3)Conducting workshops to enhance capacity among staff	Short term – High Priority	On-going	DNPW, IFAW, GIZ, ZIFLP, SAWC, and other Cooperating partners	100, 000	DNPW, IFAW, GIZ, , ZIFLP, SAWC and cooperating partners
	Inadequate wildlife outposts	To ensure the four closed wildlife outposts are re-opened	Re-opening the closed four wildlife outposts.	a) Re-open four closed wildlife outposts at (Lusangazi, Mwasemphangwe, Kalindi and Chenche).	Short Term - High Priority	On-going	DNPW, IFAW, ZIFLP and other Cooperating partners	5,000	DNPW, IFAW, ZIFLP and other cooperating partners
	Inadequate and	To open and	b) Surveying and	a) Engage RRU	Long	On-going	DNPW, RRU,RDA	80,000	DNPW,Cooperat

	poor road infrastructure for effective management of the park.	improve road network in the park for management operations	constructing management roads.	and RDA to construct the roads. b) Carry out an assessment of the proposed road loops	Term - High Priority				ing partners	
	Unclear portions of park boundary	a) To ensure that Park boundary is clearly marked b) To prevent encroachment in the Park.	a) Inspecting of park boundary using SI. b) Establishing visible beacons and sign posts where the boundary is not clear.	a) Experts to physically inspect the park boundary using SI and establish the beacons. b) Maintain and secure the beacons.	Short term-High priority.	On-going	DNPW, Surveyor General's office	15,000	DNPW, Cooperating partners	
	Lack of VHF law enforcement radio communication system in the Park	To improve radio communication for law enforcement operation.	a) Installing radio transceiver (repeater) and VHF base stations (control rooms) b) Procure base and hand held radios	Hire contractors to install the communication system	Short term- High priority		DNPW, GIZ, IFAW and other Cooperating partners	20,000	DNPW, GIZ, IFAW and other Cooperating partners	
Visitors Use and Experience	Poor accessibility	To improve and develop road network and airstrip	a) Address issue of access to the park b) Constructing access roads and loops within the park. c) Constructing an airstrip in the park d) Erecting signage in the park	a) Identify and survey possible roads and loops to sites b) Conduct assessment for a suitable site for an airstrip	Short term – High priority	On-going	RDA, DNPW, CAA	720,000	GRZ, Cooperating Partners	
	Lack of tourism infrastructure such as lodges and campsite	To facilitate the establishment of tourist facilities such as lodges,	a) Identifying sites for investments b) Conduct a feasibility study to assess the economic viability of the	a) Advertise sites for tourism investments	Short – term high priority	On-going	ZTB, DNPW	40,000	Cooperating partners and DNPW	

		campsites							
	Decreased wild animal population	To ensure an increase in wild animal population	a) Restocking the park with animals b) Increasing anti-poaching patrols c) Reducing human activities in the park.	a) Identify and translocate species of significance to tourism b) Conduct systematic reconnaissance flights over the park	Medium term – Medium priority	On going	DNPW, MAL	100,000	DNPW, Cooperating partners
	Lack of visitors information centers	To establish a visitors information Centre for the park	a) Constructing a visitors information centre b) Compiling information for display in the information centre	a) Construct a visitors information centre for the park b) Review available literature on the resources of the Park.	Medium term – Low priority		DNPW	50,000	DNPW, Cooperating partners
	Lack of marketing and promotion	To make the park products known to both local and international clients	a) Marketing and promoting tourism products of the park b) Developing website for the park c) Developing tourism products for Lukusuzi National Park.	1) Engage media to develop a communication strategy. 2) ZTA to market the park at different tourism shows. 3) Identify local brand ambassadors to market	Short term – High priority	On going	DNPW, ZTB, ZNBC, Local radio stations	50,000	DNPW, Cooperating partners,
	Lack of power	To have power in the park	a) Connecting the park to the main National power grid	a) Engage ZESCO, REA to connect power to the Park	Medium term priority	On-going	DNPW, ZESCO Private developers in the park.,	20,000	DNPW, ZESCO, Private developers in the park and cooperating partners
Local	Poor conditions	To boost	a) CRBs to review	a) Improve	Long	On-going	DNPW, Private	120,000	DNPW, Private

Community Associated Management	of service for Community Scouts resulting into low motivation and low morale;	morale of Community Scouts	scouts conditions with their partners b) Improving remuneration where possible c) Improving the open and transparent staff appraisal system to be done on quarterly basis and CRB, DNPW and partners to be involved. d) Provision of field equipment and uniform e) CRBs to get a share from hunting Concession fees (80%-20%)	remuneration for Community scouts b) Improve Community scout working conditions and safety. 3) Diversify revenue resource base 4) Sharing of concession fees 5) Engaging other conservation partners	Term - High Priority		Sector and CRB		sector, MTA, GRZ and CRB
	Ad-hoc management regime of the surrounding communities due to absence of GMP	To develop and enforce General Management Plan for the surrounding communities	a) Implementing the GMP for Lumimba GMA b) Developing land use lands for chiefdoms in the open area surrounding the Park	a) Sensitize communities and other stakeholders on the management Zone Plan of the Lumimba GMA. b) Carry out periodic monitoring of the implementation of the GMP c) Engage experts to collect and develop land use plans.	Long Term and Medium Priority	On-going	DNPW, government departments, Communities & other stakeholders.	36,000	GRZ, Cooperating Partners
	High poverty	Facilitate the	1) To promote and	1 Training on	Long	Ongoing	DNPW, GRZ and	500,000	GRZ, Private

	levels within the communities surrounding the National Park	alleviation of poverty among the communities surrounding the Park	support alternative livelihood income generating activities 2) Promote and support smart agriculture in communities surrounding the National Park	income generating activities and entrepreneurship 2 Resource Mobilization	term-High priority		Private sector		Sector and DNPW
	Human Wildlife Conflict	Manage Human Wildlife Conflict	1) Conduct sensitization and awareness meetings in the community. 2) Training the communities in different mitigations measures. 3) Allocate adequate resources to DNPW for improved response 4) Adhere to the Chiefdom land use plans	1 Engage the Traditional leaders, CRBs, CFMG, local authorities, DNPW and other stakeholders to conduct sensitization meetings 2. Resource mobilization 3. Enforce the land use plan	Medium term, Short term -High priority	Ongoing	DNPW, CRB, CFMG and Private sector	50,000	GRZ, DNPW, CRB, CFMG and private sectors
	Inadequate information and understanding concerning the roles of the community in wildlife management	To avail information to the community on wildlife management.	Organizing and holding community sensitization meetings and workshops	a) Identify stakeholders associated with the management of the park b) Conduct workshops for local communities c) Identify roles and responsibilities of stakeholders associated with the park	Medium Term - High Priority	On-going	GRZ, MOCTA DNPW, CRBs and Private sector	30,000	DNPW, MTA, GRZ,

				d) Prepare materials for sensitization meetings e) Capacity building to communities in basic wildlife laws and consequences of illegal Natural resources off take					
Heritage Resources	Inadequate information on heritage resources of the park	To gather information on natural and cultural heritage sites.	a) Conducting library archival research b) Conducting systematic field surveys	a) Carry out surveys to collect baseline data b) Establish databases c) Produce information on brochures, leaflets, etc.	Medium Term - High Priority	On-going	NHCC, DNPW	5,000	NHCC, UNESCO, MTA, GRZ
	Inadequate human resource	To recruit a heritage officer in the district	Advertising and conducting interviews	Placing advertisements in the local media	Medium Term - High Priority		NHCC,	2,000	NHCC
	Inadequate funding for research	To increase funding for heritage research	Lobbying for additional funds	Submit research proposals	Long Term and High Priority	On-going	NHCC,DNPW	5,000	NHCC, Cooperating partners
	No trails and other access infrastructure to heritage resource sites of the park;	To open trails and construct access infrastructure leading to the heritage sites.	Opening trails and other access infrastructure to heritage resource sites of the park	Opening trails and other access infrastructure to heritage resource sites of the park	Long Term and High Priority	On-going	NHCC, DNPW	36,000	NHCC, UNESCO, MTA
	No publicity on heritage resources of the park	To enhance awareness and promote sustainable heritage resources	a) Conducting sensitization meetings on the importance and conservation of the heritage site.	a) Gather information, establish a data base, publicise/ disseminate information	Long Term and Medium Priority	On-going	NHCC, DNPW, ZTB	20,000	UNESCO

		management of the park	b) Conducting media education on the heritage sites.						
	Non gazetted state of natural and cultural sites as national monuments;	To declare all heritage sites as national monuments.	Preparing all the necessary documentations leading to the gazettelement of heritage sites as national monuments	Prepare all documentations leading to the gazettelement of heritage sites as national monuments	Medium Term - High Priority	On-going	NHCC, DNPW, MTA, Ministry of Justice	12,000	NHCC, UNESCO, MTA

CHAPTER TEN

10.0 IMPLEMENTATION PLAN

10.1 OVERVIEW

The overarching principle objective of the implementation plan is to guide the mobilization of required resources in order to secure the environment and create a platform for socio-economic development in the Lukusuzi National Park. The implementation plan is based on the SIMAP developed in relation to the respective identified management problems, management objectives and the management zones. In addition, a monitoring and evaluation framework will guide the implementation plan.

10.2 MONITORING AND EVALUATION

Monitoring and Evaluation (M and E) of the implementation of the GMP will be done on a continuous basis. This will be used to assess delivery and identify difficulties to ascertain problem areas in which appropriate remedial actions shall be required.

10.3 FEEDBACK

Results of the evaluation will be fed back to the original plan. This process will provide measures to improve management situations and guide further decisions.

Table 10: Five year Implementation Plan for Lukusuzi National Park

No.	Mgt Problem	Mgt Objectives	Expected Output	Activities	Year 1	Year 2	Year 3	Year 4	Year 5	Measurable Indicator	Means Verification	Important Assumption
Natural Resources Implementation Plans												
1.	Inadequate information on park biophysical resources	To generate adequate biophysical information for park management	a) Protocols for biophysical assessment developed b) Information on biophysical resources generated	a) Developing biophysical assessment and monitoring protocols for the park b) Conducting biophysical surveys and research in the park						a) Number of biophysical protocols developed b) Number of Technical reports and peer reviewed papers prepared	Biophysical protocols and Technical reports	Resources available to undertake biophysical assessment
2.	Occurrence of illegal mining	To prevent the occurrence of illegal mining	No incidences of illegal mining	a) Conducting regular monitoring patrols in the park b) Maintaining regular communication with the Mining Department						a) Number of signs of illegal mining b) Apprehensions of illegal miners c) Number of meetings held with the Mines Department	a) Patrol reports b) Minutes of meetings	Resources available to undertake regular patrols
4.	Occurrence of unplanned and uncontrolled fires	To reduce the occurrence of unplanned and uncontrolled fires in the park	Reduced incidences of unplanned and uncontrolled fires	a) Developing and implementing a fire management plan for the Protected Area b) Conducting community sensitization around the park c) Conducting prescribed burning in the Park d) Opening						a) Fire management plan in place b) Number of community sensitization meetings conducted c) Number of activities implemented in the fire	a) Reports on activities implemented in the Fire Management Plan b) Minutes of community sensitization meetings conducted	a) Resources available to develop and implement Fire Management Plan b) Communities responsive to sensitization meetings conducted

				firebreaks											management plan.		
--	--	--	--	------------	--	--	--	--	--	--	--	--	--	--	------------------	--	--

5.	Limited water points	To ensure availability of adequate water up points in the park	Adequate number of water points set up	a) Identifying sites for water points b) Carrying out assessment of sites for water points											a) Number of water point sites identified b) Number of suitability assessments conducted	Reports on the number of water point set up with water.	a) Suitable sites located and assessed b) Funds available to put in water points
6.	Seasonality of streams and rivers	To regulate negative activities leading to seasonality of streams	Negative activities leading to seasonality identified and mitigated	a) Implementing measures to prevent seasonality of streams and Rivers											Negative factors leading to seasonality of streams and rivers identified	a) Technical reports on identified factors leading to seasonality of streams and rivers b) Reports on mitigations measures applied.	a) Funds available to undertake study b) Factors affecting the seasonality of rivers and streams identified
7.	Illegal off-take of wildlife	To reduce the rate of illegal animals off-take	Illegal off-take of animals reduced in the park	a) Identifying gaps in law enforcement in the park b) Implementing an effective law enforcement strategy in the park											a) Number of animals poached per year	Park Law enforcement reports	Funds available to develop and implement the law enforcement strategy
8.	Illegal fishing in the park	To prevent incidences of illegal fishing in the Park	Incidences of illegal fishing prevented in the Park	a) Increasing law enforcement activities in the park b) Promoting aquaculture, Community game ranching and livestock in the											a) Number of signs of illegal fishing b) Apprehensions of illegal miners	a) Patrol reports	Resources available to undertake regular patrols

				surrounding communities of the Park.													
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Operations and Management Implementation Plan																	
1.	Poor working conditions with respect to staff accommodation and office facilities	To motivate staff with respect to staff accommodation and office facilities	Houses and offices constructed and renovated for the staff	Construction of a) decent staff houses b) office accommodation c) Procurement of office equipment											Number of decent houses and office accommodation constructed per year	Works completion certificates of constructed houses and office accommodation	Availability of funds to construct houses and offices.
2.	Inadequate financial support	To improve Park's financial base and attain self-sustenance level	Adequate funding for park operations.	a) Advertising identified tourism sites; b) Establishing camping sites in the Park; c) Encouraging local and international tourism through marketing programmes											a)Number of identified tourism sites per year b)Number of established comping sites per year	Advertisement award reports of identified tourism sites	Availability of funds for the identification of tourism sites
3.	Inadequate transport, construction gear and other equipment.	Acquire adequate and relevant logistical equipment	All transport and construction gear necessary for effective management of Lukusuzi National park procured.	Sourcing / Mobilizing financial resources to procure all required field equipment.											Number of equipment procured per year	Register of equipment procured per year	Availability of funds from partners and GRZ to procure all required operational logistics per year.
4.	Inadequate training for in-service staff to enhance their capacity;	To enhance the performance of in service staff through training	Enhanced performance of staff	a)Carrying out an in-service training needs assessment b) Providing scholarships for in-service training c) holding workshops for in-service											a) Number of staff attending in-service training per year b) Number of staff undergoing tertiary education per year	Human resources training and development reports	Fund available for scholarships

				training														
5.	Inadequate wildlife outposts	To ensure the four closed wildlife outposts are re-opened	Adequate number of wildlife outposts in place	Re-opening the closed four wildlife outposts.												Number of wildlife outposts reopened	Reports on the number of wildlife outposts functioning	a)Availability of funds b)No resistance from the community
6.	Inadequate and poor road infrastructure for effective management of the park.	To open and improve road network in the park for management operations	Road infrastructure developed	a)Surveying and constructing management roads.												Number of roads constructed	Certificate of completion	Availability of funds
7.	Unclear portions of park boundary	a)To ensure that Park boundary is clearly marked b) To prevent encroachment in the Park.	a)Park boundary surveyed, marked, cleared and beacons b) Establishing visible beacons and sign posts were the boundary is not clear.	a)Inspecting of park boundary using SI. b) Establishing visible beacons and sign posts were the boundary is not clear.												a) Number of reports on encroachment b) Number of unclear boundaries section surveyed.	a)Encroachment reports b)Survey reports	Availability of funds to conduct boundary surveys
8.	Lack of radio communication system in the Park	To improve radio communication for law enforcement operation.	Radio communication system is installed in the park and in all wildlife outposts surrounding the park	a)Installing radio transceiver (repeater) and VHF base stations (control rooms) b)Procure base and hand held radios												a) Number of wildlife posts with base radios. b) Number of hand held radios bought for operations.	Works completion certificate of established radio communication system	Availability of funds to establish radio communication system in the park.
Visitor Use and Experience Implementation Plan																		
1.	Poor accessibility	To improve and develop road network and	Park accessible throughout the year	a) Address issue of access to												a) Number of roads and signage	Work completion certificate	Availability of funds

		airstrip		the park											constructed		
				b) Constructing access roads and loops within the park.													
				c) Constructing an airstrip in the park													
				d) Erecting signage in the park													

2.	Lack of tourism infrastructure such as lodges and campsite	To facilitate the establishment of tourist facilities such as lodges, campsites	Tourism infrastructure and visitor facilities constructed in the park	a) Identifyin g sites for tourism investments									a) Number of sites identified b) Number of facilities constructed	a) Sites identification report	Availability of funds
3.	Decreased wild animal population	To ensure an increase in wild animal population	Increase in animal population	a) Identifying and translocating species of significance to tourism b) Conducting systematic Reconnaissance flights over the park									a) Number of animals estimated b) Number of animals translocated	a) Translocation reports b) Aerial survey reports	Availability of funds
4.	Lack of visitors information centres	To establish a visitors information centre for the park	Visitors information centre constructed	a) Constructing a visitor information centre b) Compiling information for display in the visitor information centre									a) Two visitors information centres constructed	a) Certificate of completion of works	Availability of funds
5.	Lack of marketing and promotion	To make the park products known to both local and international clients	Park marketed and its tourism products promoted	a) Marketing and promoting tourism products of the park b) Developing website for the park c) Developing tourism products for Lukusuzi National Park.									a) Number of tourism products advertised b) Operational website	a) Report on products advertised b) Number of people visiting the website	Availability of funds
7.	Lack of	To have power	Park connected to	Connecting the									Number of	Power	Prioritization of

	power	in the Park	the National power grid	park to the main National power grid										facilities with power in the park	connection reports	activity by DNPW
--	-------	-------------	-------------------------	--------------------------------------	--	--	--	--	--	--	--	--	--	-----------------------------------	--------------------	------------------

Local Community Implementation Plan																	
1.	Poor conditions of service for Community Scouts resulting into low motivation and low morale;	To boost morale of Community Scouts	Community Scouts conditions of service improved	a) Forming a committee to review the conditions of service b) Improving remuneration where possible c) Improving the open staff appraisal system, d) Improving Community scout working conditions and safety.											Number of Community Scouts receiving government stipulated minimum wage per year.	Signed and agreed conditions of service	Funds available to improve conditions of service.
2.	Ad-hoc management regime of the surrounding communities due to absence of GMP	To develop and enforce General Management Plan for the surrounding communities	Land use plans developed and the GMP implemented	a)Implementing the GMP for Lumimba GMA b) Developing land use plans for chiefdoms in the open area surrounding the park.											a) Number of land use plans developed	a) Reports on the activities implemented in the management plan.	Availability of funds for developing and implementing the plan
3.	Inadequate information and understanding concerning the roles of the community in wildlife management	To avail information to the community on wildlife management.	Information on wildlife management availed to the community	Organizing and holding community sensitization meetings and workshops											Number of sensitization meetings and workshops held per year	Minutes of meetings	Cooperation among the stakeholders and availability of funds to hold these meetings
Heritage Resources Implementation Plan																	
1.	Inadequate	To gather	Information on all	a)Conduct library											a) Number	a) Cultural	Financial

	information on heritage resources of the park	information on natural and cultural heritage sites.	the heritage sites of the park documented.	archival research b) Conducting systematic field surveys												of heritage sites identified and documented per year. b) Number of cultural values and resource strategy papers developed for the PA	values and Resource strategy papers / manuals developed, b) Reports of baseline data collection	resources mobilised to finance the undertaking of the inventories
2.	Inadequate human resource	To recruit a heritage officer in the district.	Heritage officer recruited	Advertising and conducting interviews												a) Number of adverts placed b) One interview conducted	a) Report on the interviews conducted	Availability of funds
3.	Inadequate funding for research	To increase funding for heritage research	Funds secured	Lobbying for additional funds												a) Number of funding institutions identified b) Number of research proposals submitted	Financial reports	Officer identified to undertake the task
4.	No trails and other access infrastructure to heritage resource sites of the park;	To open trails and construct access infrastructure leading to the heritage sites.	Good and adequate trails leading to the heritage sites identified and created.	Opening trails and other access infrastructure to heritage resource sites of the park												Kms of trails and other access infrastructure to heritage resource sites constructed per year	Works completion certificates of constructed trails and other access infrastructure	Availability of funds to construct trails and other access infrastructure
5.	No publicity on heritage resources of the park	To enhance awareness and promote sustainable heritage resources management of the park.	Heritage resources of the park publicised and disseminated	a) Conducting sensitization meetings on the importance and conservation of the heritage site. b) Conducting media education on the heritage sites.												Number of Programmes on heritage site aired on radio per year Number of different types and kinds of publicity materials	a) Documentaries of aired programmes b) Availability of different types and kinds of publicity materials produced	Availability of funds undertake the prescribed activities

															produced per year		
6.	Non gazetted state of natural and cultural sites as national monuments	To declare all heritage sites as national monuments.	All heritage sites gazetted and declared as national monuments	Preparing all the necessary documentations leading to the gazettelement of heritage sites and national monuments											Number of heritage sites declared as national monuments	S.I declaration orders of the heritage sites as national monuments	Availability of funds to survey and document the heritage sites

BIBLIOGRAPHY

Anderson, M. Carrying the torch from Arkansas to Zambia. The Nature Conservancy Fire Restoration Program.

Climatic Data Publication No. 6, Department of Meteorology, Lusaka, 1963.

Climatological summaries (1951-61). The Federal Meteorological Department, Salisbury, 1963.

Climatic Data Publication No. 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13. Department of Meteorology, Lusaka

Dalal-Clayton, BD, C English, G.J Williams and O.Spaargaren. 1985, A geomorphic

DNPW (2016), Report on the 2015 aerial census of elephants and other large mammals in Zambia: Volume II Population estimates for other large mammals and birds, Department of National Parks and Wildlife, Chilanga, Zambia

Drysdall A.R, Thieme J.G, and Johnson R.L, 1974-1975. Geological Map of the Republic of Zambia, Geological Survey Department, Lusaka.

Edmonds A.C.R. 1976, Vegetation Map of the Republic of Zambia, Forestry Department, Lusaka.

FAO, 1977. Food and Agriculture Organization of the United Nations Guidelines for Soil

Frederick. 2013. Aerial Survey Report, Luangwa Valley 2012. COMACO, Lusaka.

Hollingsworth, L.T., Johnson, D, Sikaundi, G, Siame, S. 2015. Fire Management Assessment of Eastern Province, Zambia. Washington, D.C, USDA Forest Service, International Programs.

Katanekwa M. Nicolas (2011): Zambia's Outstanding Natural and Cultural and Historic Sites: 'A Heritage Legacy for All'

Legend for Zambia. Technical guide No. 15 Soil Survey Unit, Department of Agriculture, Mt Makulu Central Research Station, Chilanga.

Mackel, R, 1972a, The physiographic Regions of Zambia Zambia Geographical Association.

Money N.J. 1972, An outline of the Geology of Western Zambia, Advance of paper to appear in the record of the geology of Zambia Vol. 12, Geological survey of Zambia, Lusaka. NHCC Act (1989): Supplement of the Republic of Zambia, Government Gazette, No. 23 of 1989; Government Printers, Lusaka.

Profile Description, Soil Resources Development and Conservation Service, Land and Water Development Division, Rome.

Renfrew Central (1991): Archaeology, Theories, Methods and Practice, Themes and Hudson, London.

W.B (1994) World Bank Technical Paper No. 139, Environmental Assessment Sourcebook; Policies Procedures and Cross-sectoral issues, Environment Department Washington.

Research Station, Chilanga. Trapnell, C. and Clothier, J N, 1957. The Soils, Vegetatio

Soil Survey Unit, 1991. Exploratory Soil Map of Zambia, Scale 1:1,000,000. Soil Survey

Section, Research Branch, Ministry of Agriculture, Lusaka.

Soil Survey Unit, Department of Agriculture, Mt. Makulu Central Research Station, Chilanga.

Soil Bulletin No. 9. Soil Survey Unit, Department of Agriculture, Mt. Makulu Central Research Station, Chilanga.

Soil Bulletin No. 9. Soil Survey Unit, Department of Agriculture, Mt. Makulu Central Research Station, Chilanga.

Trapnell, C. and Clothier, J N, 1957. The Soils, Vegetation and Agricultural Systems of N.

Verboom W.C. and Brunt M.A. 1970 An Ecological Survey of Western Province of

Veldkamp W.J., 1984. Soil Classification. First Approximation. Technical Guide No. 14.

WCS Flight Programme (2009) “Aerial Survey Report: Luangwa Valley 2009”. Wildlife Conservation Society, New York.

World Bank. (1994) World Bank Technical Paper No. 139, Environmental Assessment Sourcebook; Policies Procedures and Cross-sectoral issues, Environment Department Washington.

W. Rhodesia. Report of the Ecological Survey, Government Printers, Lusaka.

Zambia, with special Reference to Fodder Resources, Study No. 8 D.O.S. Tolworth, L

LIST OF APPENDICES

Appendix I: Species checklist for Mammals

Species		Source of Information			
Common Name	Scientific Name	Baseline 2017	Aerial Survey	Patrol Field Reports	1970
Bushbuck	<i>Tragelaphus scriptus</i>	Σ	*		□
Bushpig	<i>Potamochoerus porcus</i>	Σ	*⊗		□
Common duiker	<i>Cephalophus grimmia</i>	Σ	*⊗	#	□
Eland	<i>Taurotragus oryx</i>	Σ	*	#	□
Hartebeest	<i>Sigmoceros (Alcelaphus) lichtensteinii</i>	Σ	*	#	□
Kudu	<i>Tragelaphus strepsiceros</i>	Σ	*	#	□
Roan antelope	<i>Hippotragus equinus</i>	Σ	*⊗	#	□
Sable Antelope	<i>Hippotragus niger</i>	Σ	*⊗	#	□
Warthog	<i>Phacochoerus aethiopicus</i>		*⊗⊗	#	□
Vervet monkey	<i>Cercopithecus aethiops</i>				□
Yellow-backed Baboon	<i>Papio cynocephalus</i>	Σ		#	□
Wild dog	<i>Lycaon pictus</i>				□
Civet	<i>Viverra civetta</i>				□
Genet	<i>Genetta spp</i>				□
Slender mongoose	<i>Herpestes sanguineus</i>				□
Banded mongoose	<i>Mungos mungo</i>				□
Spotted Hyaena	<i>Crocuta crocuta</i>	Σ			□
Leopard	<i>Panthera pardus</i>	Σ		#	□
Cheetah	<i>Acinonyx jubatus</i>				□
Lion	<i>Panthera leo</i>			#	□
Elephant	<i>Loxodonta africana</i>			#	□
Black Rhinoceros	<i>Diceros bicornis</i>				□
Yellow-spotted Dassie	<i>Dendrohyrax brucei</i> Gray				□
Zebra	<i>Equus burchelli</i>		⊗⊗		□
Hippopotamus	<i>Hippopotamus amphibious</i>			#	□
Common duiker	<i>Cephalophus grimmia</i>				□
Sharpe's Grysbok	<i>Rhaphicerus sharpei</i>		⊗	#	□
Oribi	<i>Ourebia ourebi</i>				□
Klipspringer	<i>Oreotragus oreotragus</i>				□
Reedbuck	<i>Redunca arundinum</i>			#	□
Common Waterbuck	<i>Kobus ellipsirymnus</i>				□
Puku	<i>Kobus vardoni</i>				□
Impala	<i>Aepyceros melampus</i>				□
Cookson Wildebeest	<i>Connochaetes taurinus cooksoni</i>				□
Buffalo	<i>Syncerus caffer</i>		⊗	#	□
Cape Hare	<i>Lepus capensis</i>				□
Red Hare	<i>Pronolagus rupestris</i>				□
Porcupine	<i>Hystrix africae-australis</i>	Σ			□

Key : ⊗-2009, ⊗-2012, *-2015

Appendix II: Species Checklist for Birds

No	Species	Scientific name
1	Racket-tailed Roller	<i>Coracias spatulatus</i>
2	Pale-billed Hornbill	<i>Tockus pallidirostris</i>
3	Miombo Pied Barbet	<i>Tricholaema frontata</i>
4	Miombo Rock Thrush	<i>Monticola angolensis</i>
5	Kurrichane Thrush	<i>Turdus libonyana</i>
6	Arnot's Chat	<i>Myrmecocichla arnotti</i>
7	Collared Palm Thrush	<i>Cichladusa arquata</i>
8	Red-capped Crombec	<i>Sylvietta ruficapilla</i>
9	Miombo Barred Warbler	<i>Camaroptera undosa</i>
10	Bohm's Flycatcher	<i>Muscicapa boehmii</i>
11	Rufous-bellied Tit	<i>Parus rufiventris</i>
12	White-bellied Sunbird	<i>Nectarinia talatala</i>
13	Miombo Double-collared Sunbird	<i>Nectarinia manoensis</i>
14	Sousa's Shrike	<i>Lanius souzae</i>
15	White-winged Starling	<i>Neocichla gutturalis</i>
16	Chestnut-mantled Sparrow-weaver	<i>Plocepasser rufoscapulatus</i>
17	Bar-winged Weaver	<i>Ploceus angolensis</i>
18	Olive-headed Weaver	<i>Ploceus olivaceiceps</i>
19	Black-eared Seed-eater	<i>Serinus mennelli</i>
20	Dickinson's Kestrel	<i>Falco dickinsonii</i>
21	Central Bearded Scrub Robin	<i>Erthropygia barbata</i>
22	African Pygmy Goose	<i>Nettapus auritus</i>
23	Spur-winged Goose	<i>Plectropterus gambensis</i>
24	White-backed Duck	<i>Thalassornis leuconotus</i>
25	White stork	<i>Ciconia ciconia</i>
26	Hamerkop	<i>Scopus umbretta</i>
27	Goliath Heron	<i>Ardea goliath</i>
28	Great White Egret	<i>Egretta alba</i>
29	Little Egret	<i>Egretta garzetta</i>
30	Green-backed Heron	<i>Butorides striata</i>
31	Cattle Egret	<i>Bubulcus ibis</i>
32	Common Squacco Heron	<i>Ardeola ralloides</i>
33	Lesser Kestrel	<i>Falco naumanni</i>
34	Secretary Bird	<i>Sagittarius serpentarius</i>
35	Martial Eagle	<i>Polemaetus bellicosus</i>
36	Crowned Eagle	<i>Stephanoaethus coronatus</i>
37	African Hawk Eagle	<i>Hieraaetus spilogaster</i>
17	Tawny Eagle	<i>Aquila rapax</i>
18	Wahlberg's Eagle	<i>Aquila wahlbergi</i>
19	Lizard Buzzard	<i>Kaupifalco monogrammicus</i>
20	Shikra	<i>Accipiter badius</i>
21	Little Sparrowhawk	<i>Accipiter minullus</i>
22	Dark Chanting Goshawk	<i>Melierax metabates</i>
23	Gymnogene	<i>Polyboroides typus</i>
24	Bateleur	<i>Terathopius ecaudatus</i>
25	Black-breasted Snake Eagle	<i>Circaetus pectoralis</i>
26	White-headed Vulture	<i>Trigonoceps occipitalis</i>
27	African White-backed Vulture	<i>Gyps africanus</i>
28	African Fish Eagle	<i>Haliaeetus vocifer</i>

29	Black/Yellow-billed Kite	<i>Milvus migrans</i>
30	Black-shouldered Kite	<i>Elanus caeruleus</i>
31	Honey Buzzard	<i>Pernis apivorus</i>
32	Dickinson's Kestrel	<i>Falco dickinsoni</i>
33	European Hobby	<i>Falco subbuteo</i>
34	Coqui Francolin	<i>Francolinus coqui</i>
35	Shelley's Francolin	<i>Francolinus shelleyi</i>
36	Red-necked Francolin	<i>Francolinus afer</i>
37	Helmeted Guineafowl	<i>Numida meleagris</i>
38	Kurrichane Buttonquail	<i>Turnix sylvaticus</i>
39	African Crane	<i>Crecopsis egregia</i>
40	Black-bellied Bustard	<i>Eupodotis melanogaster</i>
41	Water Dikkop	<i>Burhinus vermiculatus</i>
42	Bronze-winged Courser	<i>Rhinoptilus chalcopterus</i>
43	Temminck's Courser	<i>Cursorius temminckii</i>
44	Ringed Plover	<i>Charadrius hiaticula</i>
45	Pacific Golden Plover	<i>Pluvialis fulva</i>
46	Common Sandpiper	<i>Actitis hypoleucos</i>
47	Terek Sandpiper	<i>Xenus cinereus</i>
48	Double-banded Sandgrouse	<i>Pterocles bicinctus</i>
49	Laughing Dove	<i>Streptopelia senegalensis</i>
50	Cape Turtle Dove	<i>Streptopelia capicola</i>
51	Red-eyed Dove	<i>Streptopelia semitorquata</i>
52	Emerald-spotted Wood Dove	<i>Turtur chalcospilos</i>
53	Namaqua Dove	<i>Oena capensis</i>
54	Green Pigeon	<i>Treron calvus</i>
55	Brown-necked Parrot	<i>Poicephalus robustus</i>
56	Meyer's Parrot	<i>Poicephalus meyeri</i>
57	Schalow's Turaco	<i>Tauraco schalowi</i>
58	Purple-crested Turaco	<i>Tauraco porphyreolophus</i>
59	Grey Lourie	<i>Corythaixoides concolor</i>
60	Striped Crested Cuckoo	<i>Clamator levaillantii</i>
61	Black Cuckoo	<i>Cuculus clamosus</i>
62	African Grey Cuckoo	<i>Cuculus gularis</i>
63	Senegal Coucal	<i>Centropus senegalensis</i>
64	Barn Owl	<i>Tyto alba</i>
65	African Scops Owl	<i>Otus senegalensis</i>
66	Spotted Eagle Owl	<i>Bubo africanus</i>
67	Barred Owlet	<i>Glaucidium capensis</i>
68	Fiery-necked Nightjar	<i>Caprimulgus pectoralis</i>
69	Pennant-winged Nightjar	<i>Macrodipteryx vexillarius</i>
70	African Palm Swift	<i>Cypsiurus parvus</i>
71	European Swift	<i>Apus apus</i>
72	Little Swift	<i>Apus affinis</i>
73	African White-rumped Swif	<i>Apus caffer</i>
74	Half-collared Kingfisher	<i>Alcedo semitorquata</i>
75	Malachite Kingfisher	<i>Alcedo cristata</i>
76	Brown-headed Kingfisher	<i>Halcyon albiventris</i>
77	Chestnut-bellied Kingfisher	<i>Halcyon leucocephala</i>
78	Senegal Kingfisher	<i>Halcyon senegalensis</i>
79	Striped Kingfisher	<i>Halcyon chelicuti</i>
80	Giant Kingfisher	<i>Megaceryle maxima</i>
81	Pied Kingfisher	<i>Ceryle rudis</i>

82	Little Bee-eater	<i>Merops pusillus</i>
83	Swallow-tailed Bee-eater	<i>Merops hirundineus</i>
84	White-fronted Bee-eater	<i>Merops bullockoides</i>
85	Madagascar Bee-eater	<i>Merops superciliosus</i>
86	European Bee-eater	<i>Merops apiaster</i>
87	Southern Carmine Bee-eater	<i>Merops nubicoides</i>
88	European Roller	<i>Coracias garrulus</i>
89	Lilac-breasted Roller	<i>Coracias caudatus</i>
90	Racket-tailed Roller	<i>Coracias spatulatus</i>
91	Broad-billed Roller	<i>Eurystomus glaucurus</i>
92	Red-billed Wood Hoopoe	<i>Phoeniculus purpureus</i>
93	Scimitarbill	<i>Rhinopomastus cyanomelas</i>
94	Hoopoe	<i>Upupa epops</i>
95	Crowned Hornbill	<i>Tockus albeterminatus</i>
96	Pale-billed Hornbill	<i>Tockus pallidirostris</i>
97	African Grey Hornbill	<i>Tockus nasutus</i>
98	Trumpeter Hornbill	<i>Bycanistes bucinator</i>
99	Southern Ground Hornbill	<i>Bucorvus cafer</i>
100	Yellow-fronted Tinkerbird	<i>Pogoniulus chrysocomus</i>
101	Miombo Pied Barbet	<i>Tricholaema frontata</i>
102	Black-collared Barbet	<i>Lybius torquatus</i>
103	Crested Barbet	<i>Trachyphonus vaillantii</i>
104	Greater Honeyguide	<i>Indicator indicator</i>
105	Lessor Honeyguide	<i>Indicator minor</i>
106	Bennett's Woodpecker	<i>Campethera bennettii</i>
107	Little Spotted Woodpecker	<i>Campethera cailliautii</i>
108	Cardinal Woodpecker	<i>Dendropicos fuscescens</i>
109	Bearded Woodpecker	<i>Thripias namaquus</i>
110	Flappet Lark	<i>Mirafra rufocinnamomea</i>
111	Red-capped Lark	<i>Calandrella cinerea</i>
112	Lesser Striped Swallow	<i>Hirundo abyssinica</i>
113	Greater Striped Swallow	<i>Hirundo cucullata</i>
114	European Swallow	<i>Hirundo rustica</i>
115	African Pied Wagtail	<i>Motacilla aguimp</i>
116	Long-billed Pipit	<i>Anthus similis</i>
117	Yellow-throated Longclaw	<i>Macronyx croceus</i>
118	Black Cuckoo-shrike	<i>Campephaga flava</i>
119	White-breasted Cuckoo-shrike	<i>Coracina pectoralis</i>
120	Common Bulbul	<i>Pycnonotus barbatus</i>
121	Miombo Rock Thrush	<i>Monticola angolensis</i>
122	Kurrichane Thrush	<i>Turdus libonyana</i>
123	Heuglin's Robin	<i>Cossypha heuglini</i>
124	Mocking Chat	<i>Myrmecocichla cinnamomeiventris</i>
125	Arnot's Chat	<i>Myrmecocichla arnotti</i>
126	Stonechat	<i>Saxicola torquatus</i>
127	White-browed Scrub Robin	<i>Erythropygia leucophrys</i>
128	Collared Palm Thrush	<i>Cichladusa arquata</i>
129	Green-capped Eremomela	<i>Eremomela scotops</i>
130	Yellow-bellied Eremomela	<i>Eremomela icteropygialis</i>
131	Red-capped Crombec	<i>Sylvietta ruficapilla</i>
132	Long-billed Crombec	<i>Sylvietta rufescens</i>
133	Yellow-bellied Hyliota	<i>Hyliota flavigaster</i>
134	Fan-tailed Cisticola	<i>Cisticola juncidis</i>

135	Croaking Cisticola	<i>Cisticola natalensis</i>
136	Rattling Cisticola	<i>Cisticola chiniana</i>
137	Short winged Cisticola	<i>Cisticola brachypterus</i>
138	Neddicky	<i>Cisticola fulvicapilla</i>
139	Red-faced Cisticola	<i>Cisticola erythrops</i>
140	Tawny-flanked Prinia	<i>Prinia subflava</i>
141	Miombo Barred Warbler	<i>Camaroptera undosa</i>
142	Southern Black Flycatcher	<i>Melaenornis pammelania</i>
143	Spotted Flycatcher	<i>Muscicapa striata</i>
144	Bohm's Flycatcher	<i>Muscicapa boehmii</i>
145	Chinspot Batis	<i>Batis molitor</i>
146	Paradise Flycatcher	<i>Terpisphone viridis</i>
147	Arrow-marked Babbler	<i>Turdoides jardineii</i>
148	Miombo Grey Tit	<i>Parus griseiventris</i>
149	Rufous-bellied Tit	<i>Parus rufiventris</i>
150	Grey Penduline Tit	<i>Anthoscopus caroli</i>
151	Violet-backed Sunbird	<i>Anthreptes longuemarei</i>
152	Collared Sunbird	<i>Anthreptes collaris</i>
153	White-bellied Sunbird	<i>Nectarinia talatala</i>
154	Yellow-bellied Sunbird	<i>Nectarinia venusta</i>
155	Scarlet-chested Sunbird	<i>Nectarinia senegalensis</i>
156	Amethyst Sunbird	<i>Nectarinia amethystina</i>
157	Miombo Double-collared Sunbird	<i>Nectarinia manoensis</i>
158	Shelley's Sunbird	<i>Nectarinia shelleyi</i>
159	Purple-banded Sunbird	<i>Nectarinia bifasciata</i>
160	Coppery Sunbird	<i>Nectarinia cuprea</i>
161	Yellow White-eye	<i>Zosterops senegalensis</i>
162	European Golden Oriole	<i>Oriolus oriolus</i>
163	African Golden Oriole	<i>Oriolus auratus</i>
164	Eastern Black-headed Oriole	<i>Oriolus larvatus</i>
165	Sousa's Shrike	<i>Lanius souzae</i>
166	Red-backed Shrike	<i>Lanius collurio</i>
167	Lesser Grey Shrike	<i>Lanius minor</i>
168	Fiscal Shrike	<i>Lanius collaris</i>
169	Brubru	<i>Nilaus afer</i>
170	Southern Puffback	<i>Dryoscopus cubla</i>
171	Black-crowned Tchagra	<i>Tchagra senegalus</i>
172	Tropical Boubou	<i>Laniarius aethiopicus</i>
173	Grey-headed Bush Shrike	<i>Malaconotus blanchoti</i>
174	White Helmet Shrike	<i>Prionops plumatus</i>
175	Retz's Red-billed Helmet Shrike	<i>Prionops retzii</i>
176	Fork-tailed Drongo	<i>Dicrurus adsimilis</i>
177	Greater Blue-eared Starling	<i>Lamprotornis chalybaeus</i>
178	Violet-backed Starling	<i>Cinnyricinclus leucogaster</i>
179	White-winged Starling	<i>Neocichla gutturalis</i>
180	Wattled Starling	<i>Creatophora cinerea</i>
181	Red-billed Oxpecker	<i>Buphagus erythrorhynchus</i>
182	House Sparrow	<i>Passer domesticus</i>
183	Grey-headed Sparrow	<i>Passer griseus</i>
184	Yellow-throated Petronia	<i>Petronia superciliaris</i>
185	Chestnut-mantled Sparrow-weaver	<i>P.rufoscapulatus</i>
186	Large Golden Weaver	<i>Ploceus xanthops</i>
187	Bar-winged Weaver	<i>Ploceus angolensis</i>

188	Olive-headed Weaver	<i>Ploceus olivaceiceps</i>
189	Yellow-crowned Bishop	<i>Euplectes afer</i>
190	Red Bishop	<i>Euplectes orix</i>
191	Red-shouldered Whydah	<i>Euplectes axillaris</i>
192	Melba Finch	<i>Pytilia melba</i>
193	Orange-winged Pytilia	<i>Pytilia afra</i>
194	Jameson's Firefinch	<i>Lagonosticta rhodopareia</i>
195	Red-billed Firefinch	<i>Lagonosticta senegala</i>
196	Common Waxbill	<i>Estrilda astrild</i>
197	Blue Waxbill	<i>Uraeginthus angolensis</i>
198	Zebra Waxbill	<i>Amandava subflava</i>
199	Bronze Mannikin	<i>Spermestes cucullata</i>
200	Red-backed Mannikin	<i>Spermestes bicolor</i>
201	Broad-tailed Paradise Widow	<i>Vidua obtusa</i>
202	Long-tailed Paradise Widow	<i>Vidua paradisaea</i>
203	Yellow-fronted Canary	<i>Serinus mozambicus</i>
204	Bully Canary	<i>Serinus sulphuratus</i>
205	Black-eared Seed-eater	<i>Serinus mennelli</i>
206	Stripe-breasted Seed-eater	<i>Serinus reichardi</i>
207	Cinnamon-breasted Rock Bunting	<i>Emberiza tahapisi</i>
208	Golden-breasted Bunting	<i>Emberiza flaviventris</i>
209	Cabanis's Bunting	<i>Emberiza cabanisi</i>
210	Ground hornbil	

Appendix III: Checklist for Plant Species

No	Scientific Name	Local Name
1	Colophospermum mopane	Chanye& mopane
2	Combretum molle	Kalama
3	Pseudolachnostylis maprounefolia	Msolo
4	Pericopsis angolensis	Mubanga
5	Khaya nyasika	Mubaba
6	Lonchocarpus capassa	Chimphakasa
7	Dalbergia nitidula	Kafundula
8	Afzelia quanzensis	Mupapa
9	Screlocarya caffra	Musebe
10	Dalbergia melanoxylon	Kasalusalu
11	Diplorhynchus condylocarpon	Mtowa
12	Terminalia stuhlmannii	Kabesha
13	Xeroderris stuhlmannii	Chitondotondo
14	Diospyros Kirkii	Muchenja
15	Combretum fragrans	Kalama
16	Sterculia quinqueloba	Muzumba
17	Bauhinia petersiana	Mpondo
18	Terminalia mollis	Gonondo
19	Adansonia digitata	Mulambe
20	Julbernadia globiflora	Kamponi
21	Trichilia emetica	Msikizi
22	Kigelia africana	Chizutu
23	Ricinodendron rautanenii	Mukusu
24	Cassia abbreviate	Mkoswe
25	Acacia albida	Musangu
26	Strychnos cocculoides	Kabeza
27	Piliostigma thonningii	Musekese

28	<i>Oncoba spinosa</i>	Mlaza
29	<i>Oxytehnather aabysinnica</i>	Nsungwe
30	<i>Tamarindus indica</i>	Mwembe
31	<i>Brachystegia boehmii</i>	Mfundazinzi
32	<i>Julbernadia paniculata</i>	Mtondo

Appendix IV: Staff Requirement for Lukusuzi National Park Management

Post	Existing No.	Total No. Required	Additional No. Required
Park Ranger	1	0	0
Assistant Ranger	0	1	0
Senior Wildlife Police Officers	1	7	6
Wildlife Police Officers	9	50	41
Driver	1	4	3
Coxswain	0	0	0
Community Scouts	0	40	0

Appendix V: Transport and Equipment requirements for Lukusuzi National Park

Item	Existing No.	Total No. Required	Additional No. Required
Vehicles			
Operational 4 X 4 MV	1	4	3
Tractor & Trailer	0	1	0
Grader	0	1	0
Motor Bikes	1	3	2
Boats			
Equipment			
Electric Generator	0	2	0
Electric Water Pump	0	2	0
Bore Holes	0	7	0
Water Tanks(2500lits)	0	2	0
Battery Charger	0	4	0
Air Compressor	0	2	0
Solar Panels	2	10	8
Shovels	0	20	0
Hoe	0	20	0
Spade	0	10	0
Slashes	0	30	0
Pick	0	20	0
Weather Screen	0	1	0
Rain Gauge	0	1	0
Communications			
HF Radio Sets	2	0	0
Regulators	1	10	9
VHF Base Stations	1	8	7
VHF Mobile	0	4	0
VHF Hand Held	0	20	0
Hand Held Charges	0	20	0
Fire Arms			
Automatic Rifle	7	30	23
Semi-Automatic Rifles	1	8	7
Sport Rifles	2	7	5
Shotguns	2	7	5
Pistol	0	2	0
Computers			
Desktop Computer	0	4	0
Laptops	1	3	2
Printer	1	2	1
Adapters	0	8	0
Photocopier	0	1	0
GPS Unit	0	8	0
Research Equipment/Tool			
Fire beaters	0	80	0
Field guide books	0	20	0
Preservative (formalin)	0	2	0
Rain gauge	0	1	0
Wind Vain	0	1	0
Stevenson screen	0	1	0
Anemometer	0	1	0

Visitors Information Centre	0	1	0
Chopper	0	1	0
Air Strip	0	1	0
Office Equipment			
Chairs	2	20	18
Tables	3	6	3
Stapler	1	5	4
Hole Punch	1	5	4
Office sofa	0	1	0
Calculator	1	5	4
Box Files	2	15	13
Wastepaper basket	1	6	5
Filing Cabinet	1	5	4
Office File Tray	1	6	5
Scanner	0	1	0
Fax	0	1	0
Fridge	0	1	0
Staff Houses			
Chikomeni	4	15	11
Lumamba	0	8	0
Lusangazi	0	8	0
Kalindi	0	8	0
Mwasempangwe	0	8	0
Chenche	0	8	0

Appendix VI: Wildlife outpost required for effective Management of the National Park

Name of existing, Closed or proposed Outpost	Existing / Closed / new (proposed)	Location of Existing / Closed / New	Remarks
Chikomeni	Existing	Chikomeni	(11) Staff Houses and 1 bigger office block need to be constructed.
Lumamba	Existing	Chikomeni	(8) Staff houses and 1x3 office block need to be constructed
Lusangazi	Closed	Chikomeni	(8) Staff houses and 1x3 Office block need to be constructed.
Chinunda	Proposed	Chinunda	(8) Staff houses and 1x 3 office block
Kalindi	Closed	Mwasempangwe	(8) Staff Houses and 1x3office block need to be constructed.
Chenche	Closed	Chinunda	(8) Houses and 1x3 office block need to be constructed.
Mwasempangwe	Closed	Mwasempangwe	(8) Houses and 1x3 office block need to be constructed.

Appendix VII: List of workshop participants for the first and second workshop for Lukusuzi GMP in Lundazi District

NO.	NAMES	POSITION	ORGANIZATION
1.	HRH Chief Kazembe	Chief	Traditional Authority

2.	HRH Chief Zumwanda	Chief	Traditional Authority
3.	HRH. Lameck Sakala	Chief	Traditional Authority
4.	Mr. David Mwanza	Chief representative Chikomeni	Traditional Authority
5.	Mr. Faidwell Khoza	Chief representative-Chitungulu	Traditional Authority
6.	Mr. Noah Zimba	Chief representative- Mwasemphangwe	Traditional Authority
7.		Chief representative- Mwanya	Traditional Authority
8.	Mr. Phillimon Lungu	District Agriculture Coordinator	Ministry of Agriculture
9.	Mr. Bryan Nyambe	Minerals Expert	Ministry of Mines
10.	Mr. Lackson Mwenya	GIZ Project Coordinator	GIZ Project
11.	Mr. Chaka H. Kaumba	Senior GIS Officer	DNPW
12.	Mr. Blackson Nkhowani	Driver	DNPW
13.	Mr. Musonda Mwela	GIS Officer	DNPW
14.	Mr. Mumba D. Mwango	Ag DPO	Council
15.	Mr. Musiwa N Amukena	Forestry Officer	FD
16.	Mr. Humphrey Nzima	TFCA International Coordinator Malawi	PPF
17.	Mr. Ellas Ngulube	Council Officer	Council Lundazi
18.	Mr. Jacob Sakala	Chief Retainer	Kazembe Chiefdom
19.	Ms. Edith k. Phiri	Secretary	DNPW
20.	Mr. Mwaka Ilwale	Chiefs & Traditional Affairs Officer.	MOCTA
21.	Mr. George Mukuka	Investigation Officer	DNPW
22.	Mr. Isaac Daka	Acting Park Ranger	DNPW
23.	Mr. Twakundine Simpamba	Senior Ecologist	DNPW
24.	Mr. Malama Njovu	Community Liaison Assistant	DNPW
25.	Mr. Timothy John Phiri	Extension Manager	COMACO
26.	Mr. Boniface Kasalwasa	Project Manager	COMACO

27.	Mr. Nemiah Tembo	Conservation Manager.	COMACO
28.	Ms. Mwitwa Mugode	Trainee Planner	DNPW
29.	Mr. Noah Mallenji	Driver	MTA
30.	Mr. Chilenga Nkhoma	SWPO	Chikomeni
31.	Mr. Charles Zimba	Sector in Charge	Chitungulu
32.	Mr. Wilson Mwale	Sector In Charge	Kazembe
33.	Mr. Davies Banda	CRB chairperson	Mwasemphangwe
34.	Mr. Timeyo Mvula	CRB Chairperson	Chikomeni
36.	Mr. Chisoni Phiri	Chief returner	Mwanya
37.	Mr. Moses Zulu	Community Representative	Mwanya
38.	Mr. Sylvester Phiri	Community member	Mwanya
39.	Mr. Ringstone Mwandila	CRB Chairperson	Mwanya
40.	Mr. Musonda Nkhata	Driver	Chitungulu
41.	Mr. Kennedy Mvula	Community Representative	Kazembe
42.	Mr. Nasauka Banda	Councilor	Chikomeni
43.	Mr. Jentu Mwale	Community member	Chitungulu
44.	Mr. Alex Banda	CRB chairperson	Chitungulu
45.	Mr. Andrew Mbewe	Community Representative	Chikomeni
46.	Mr. Mabvuto Banda	Community Representative	Chikomeni
47.	Mr. Nickson Mkandawire	Chief Returner	Chikomeni
48.	Mr. Alick Ndlovu	Driver	Kazembe
49.	Mr. James Nkhata	Community representative	Chikomeni
50.	Mr. Peter Zulu	Community representative	Chikomeni
51.	Mr. Moses Mbewe	Park Ranger	DNPW
52.	Mr. Isaac Nguni	Chief Returner	Chitungulu
53.	Mr. Karum Mvula	CRB Chairperson	Kazembe Chiefdom
54.	Mr. Clifford Munyindei	Officer	Office Of the President

55.	Mr. Frank Mawere	Sector in Charge	Mwanya Chiefdom
56.	Mr. Paul Lupiya	Provincial Planner	DPPH
57.	Mr. John M. Phiri	Community representative	Zumwanda Chiefdom
58.	Mr. Rodwell Nyirongo	Chief Retainer	Zumwanda Chiefdom
59.	Mr. Benard Phiri	Community Representative	Mwasemphangwe Chiefdom
60.	Mr. William Phiri	Community Representative	Mwasemphangwe Chiefdom
61.	Mr. Enock Banda	Chief Retainer	Mwasemphangwe Chiefdom
62.	Mr. Jasiel Phiri		Community member
63.	Mr. Nason Banda	Chief returner	Chinunda Chiefdom
64.	Mr. Innocent Chilupula	Coordinator	CAOFFCHN Organization
65.	Mr. Mukela Banda	District. Administration Officer	Lundazi
66.	Ms. Mervis Kasonga	Accounts Assistant	DNPW
67.	Mr. Madalitso Tembo	Tourism & Research Officer	Ministry of Tourism
68.	Mr. Dominic Kapokola	Senior Conservation Officer	DNPW
69.	Mr. Joseph Bwalya	Park Ranger	DNPW
70.	Ms. Grace Mweemba	Police Officer	POLICE
71.	Mr Alfred Ziba	Coordinator	NPZ
72.	Mr. Victor Siatyoka	Conservation Officer	NHCC
73.	Ms. Prisca Munene	Soil Surveyor	ZARI
74.	Mr. Sydney Tembo	TFCA Desk Officer	DNPW
75.	Ms. Chilufya Chitambala	Fisheries Officer	MFL
76.	Ms. Betty Msimuko	Senior CBNRM	DNPW
77.	Ms. Khuthadzo Malinda	GIS/Planner	PPF
78.	Ms. Sinyala Nyirongo	Planner (Mfuwe)	DNPW
79.	Mr. Christopher Kaoma	Principal Planner	DNPW
80.	Mr. Nelson Muyaba	Planner (Chilanga)	DNPW

81.	Mr. Substone Kumwenda	Radio Reporter	Radio
82.	Mr. Benson Mbewe	Chiefs & Affairs Officers	MOTCA
83.	Mr. Chola Mununga	Driver	Mwanya Chiefdom
84.	Mr. Solomon Mwale	Driver	Zumwanda Chiefdom
85.	Mr. Peter Nkosha	Driver	DNPW
86.	Mr. Samuel Mwamba	Driver	DNPW
87.	Ms. Helga. C. Sakala	SBDO	DNPW
88.	Ms. Clara Mwale	CRB Chairperson	Chikomeni Chiefdom
89.	Mr. Timeyo Mvula	Driver	IFAW
90.	Mr. Mwansa Mumba .D.	Council Secreary	Lundazi Council
91.	Mr. Hilgard Tembo	DMBO	DAO
92.	Mr. Rodgers Manda	Community Member	Mwanya
93.	Mr. Kingstone Nyirongo	CRB	
94.	Mr. Goodson R Nkhata	Community Representative	Kazeembe
95.	Mr. Lyford Zulu	CRB	
96.	Mr. Jasia Phiri	CRB	Chinunda
97.	Ms. Yvonne Banda	CDO	Lumezi District
98.	Mr. Kamela Ntambo	PRO	Lumezi District
99.	Mr. Mukule Banda	DAO	District Administration
100.	Father. Harrison Banda	Priest	St Pauls Parish
101.	Ms. Janet pakulani	District Commissioner	Lundazi
102.	Mr. Clement Mwale	CC Lumezi	Lumezi
103.	Mr. Edward Chilufya	PNRMO	MTA-DNPW
104.	Mr. Patrick Chibesa	AG Forestry	FD
105.	Mr. Alex Banda	CRB Chairperson	
106.	Mr. Harry Twenda	Council	Lumezi
107.	Mr. Erastus Kanchea	Area Warden	DNPW

108.	Mr.Ryson Lungu	Coordinator	IFAW
109.	Mr. Tembwe Lungu	Coordinator	IFAW
110.	Mr. Stackson Lungu	Sector-in-Charge	DNPW
111.	Mr. David Chandala	Projec Manager	COMACO
112.	Mr. Benson Kabungo	GIS	DNPW
113.	Mr. James Hunga	CRB Chairperson	
114.	Ms. Mary Nqumayo	Community Member	CFMG
115.	Mr. Chrispine Zulu	Environmental Planner	LTC
116.	Mr. Simpanje Mulenga	Deputy Director Works	LTC
117.	Mr. Davison Kamuli	DPO	LTC
118.	Mr. Magasu Allan	Project Manager	World Vision
119.	Mr. Kenneth Nyambe	Principal Warden Coservation	DNPW
120.	Mr. Edson Lungu	DPO	Lumezi
121.	Mr. Benson Mbewe	DCTAO	MOCTA
122.	Mr. Alfred Banda	Senior Planner	PPH
123.	M. Angel Makungu	GIS Carbon Project	COMACO
124.	Mr. David Ngwenyama	Provincial Project Cod	ZIFLP
125.	Mr. Masauso Phiri	Officer-in-charge	POLICE
126.	Mr. Malama Njobvu	CLO	DNPW
127.	Mr. Thomas Chisanga	Legal Assistant	DNPW
128.	Mr. Shantanda Shabwela	Snr. Conservation Off	DNPW
129.	Mr. Dominic Kapokola	Snr. Conservation Off	DNPW
130.	Mr. Moses Lupiya	Anti-Corruption	OP
131.	Ms. Alice Banda	Programmes Officer	LOAYP
132.	Mr. Dumisani Zyambo	Programmes Officer	LOAYP
133.	Mr. Gibson Chanda	Park Ranger	DNPW
134.	Mr. Chilufya Chitambala	DFLCO	MFL

135.	Ms. Chisha Moseni-Nawa	Planner	DNPW
136.	Mr. M.N Shibata	Park Ranger	DNPW
137.	Ms. Brenda Y Nachalwe	DCOO	
138.	Mr. Lackson Manda	DSWO	Social Welfare
139.	Mr. Gabriel Banda	Secretary	Mwansemphangwe
140.	Mr. Undani Banda	Reporter	ZANIS
141.	Mr. Musonda Mulenga	Executive Officer	OP
142.	Ms. Marion Mulwanba	Office Assistant	DNPW
143.	Mr. Patrick Nyirenda	CFMG	
144.	Mr. Andrew Wambala	Country Manager	PPF
145.	Mr. Lavaraine Bensher	Planner	PPF
146.	Mr. Heloineda Villiers	Programme Administrator	PPF
147.	Mr. Joseph Bwalya	Park Ranger	DNPW
148.	Mr. George Mukuka	Snr. Investigations	DNPW
149.	Ms. Angela Bwalya Lengwe	SARO	ZARI
150.	Ms. Elle Shamisale	Senior Messenger	DC Office
151.	Mr. Lackson Mwenya	Project Co-ordinator	PPF/GIZ
152.	Ms. Marvis Nyendwa	Assistant Accountant	DNPW
153.	Mr. Gideon Banda	Assistant Account	DNPW

Appendix VIII: Authors and Editorial Team

Authors

- a) Mr. Twakundila Simpamba – Senior Ecologist
- b) Ms. Sinyala Nyirongo Chipasha – Planner
- c) Mr. Nelson Muyaba – Planner
- d) Mr. Moses Mbewe – Park Ranger
- e) Mr. Musonda Mwela – GIS Officer
- f) Ms. Mwitwa Mugode – Trainee Planner

Editorial Team

Mr. Lackson Mwenya – Project Coordinator

Mr. Christopher Kaoma – Principal Planner

Mr. Chaka Kaumba – Senior GIS Officer

Appendix VIV: Statutory Instrument for the Gazettement of Lukusuzi National Park

Government of Zambia Statutory Instrument No. 67 Of 1993

The Zambia Wildlife Act (Act No. 15 Of 2015)

NATIONAL PARK NO. 3: LUKUSUZI

Starting from the confluence of the Chenje Stream with the Rukuzye River, the boundary follows down the left bank of the Rukuzye River to the Nyani Falls; thence in a northerly direction to the confluence of the Pirasi Stream with the Lukusuzi River; thence up the right bank of the Lukusuzi River to its confluence with the Kadianzeze River; thence in anorth by north-easterly direction to the highest point on the Zimwe Hill; thence in anorth-easterly direction to the highest point on the Pandebiri Hill; thence due to north to a beacon erected at a point on the Lumimba River; thence up the right bank of the Lumimba River to its confluence with the Chipanda Stream and up the right bank of the Chipanda Stream to its source; thence in a southerly direction to the source of the Mwezi Stream and down the left bank of the Mwezi Stream to its confluence with the Mburuzi Stream; thence up the right bank of the Mburuzi Stream to a beacon erected at a point immediately north of the Mpangwe Hills; thence in a southerly direction to a beacon erected at the nearest point on the Munyamadzi Stream; thence down the left bank of the Munyamadzi Stream to its confluence with the Lukusuzi River; thence up the right bank of the Lukusuzi River for a distance of approximately 3.2 kilometres to a beacon erected at a point opposite the nearest part of the Kanjenjesi Hills; thence in a south by southwesterly direction for a distance of approximately 6.4 kilometres to a beacon erected at a point on one peak of the Kanjenjesi Hills; thence in a westerly direction to the source of the Chenje Stream; thence down the left bank of the Chenje Stream to the point of starting.

The above-described area, in extent 2,720 square kilometres approximately, is situate in the Lundazi District and is shown bordered in red on Plan No. N.P. 3, deposited in the office of the Surveyor-General and dated the 1st February, 1971.