



ENVIRONMENTAL IMPACT ASSESSMENT FOR NKASA LUPALA TENTED LODGE, CAPRIVI REGION, NAMIBIA



Photograph: Simone Micheletti

April 2011

Commissioned by:
Gafil cc
P.O.Box 11470
Windhoek
Namibia

Prepared by:
Namib Hydrosearch cc
P.O. Box 11546
Windhoek
Namibia
Glynis Humphrey (M.Sc)

Contents

Executive Summary	8
Objectives	8
Methodology	8
Summary Of Potential Significant Positive Impacts.....	9
Summary Of Key Mitigation Measures.....	9
key Legislation followed.....	10
1 Introduction	12
1.1 The Project (Nkasa Lupala Tented lodge development).....	12
1.2 Site Location And Description	12
1.2.1 Detailed location of lodge site for Nkasa Lupala.....	12
1.3 Design And Size Of The Project.....	14
1.4 Bulk Services And Associated Infrastructure.....	15
1.4.1 Sewage Disposal	15
1.4.2 Solid and Hazardous Waste Disposal	15
1.4.3 Water Supply	16
1.4.4 Power Supply.....	16
1.5 Proposed Transport and Access Arrangements.....	16
1.5.1 Guest access to the proposed lodge site	16
1.5.2 New entrance tracks	17
1.5.3 Purpose and rationale of the project	19
1.5.4 Current status of the site	20
1.5.5 Intended duration of the development.....	20
1.5.6 Desirability of the project.....	21
1.5.7 Perceived positive benefits of the intended development (potential)	21
1.5.8 Perceived potential detrimental impacts from the Development	21
2 Context of the environmental impact assessment	22
3 Policy, Legal And Administration Framework	23
3.1 Legal and Policy requirements for Environmental Assessments	23
3.1.1 National Legislation.....	23
3.1.3 Local Legislation and Policy	29
3.2 EIA Procedure	30
3.2.1 Objectives.....	30
3.2.2 Environmental Assessment Practitioner.....	30
4 Overview of the baseline environment	31

4.1	The Caprivi region.....	31
4.2	Topgraphy and Hydrology.....	31
4.3	Vegetation	34
4.3.1	Regional Vegetation Composition	34
4.4	Climate	37
4.5	Geology	37
5	Public Participation	38
5.1	Description of the Public Consultation/Participation Process.....	38
5.2	Overview of the Public Consultation Process.....	40
6	Socio – Cultural Baseline	45
6.1	Introduction.....	45
6.2	Historical Occupation of the Area.....	45
6.3	Exisiting uses of land uses natural resources.....	46
6.4	Current infrastructure	47
6.5	Trophy hunting operation	48
6.6	Human –wildlife conflict zones	49
6.7	Methodology	49
6.8	Results.....	50
6.9	Millenium challenge account (MCA).....	56
6.10	Conclusion.....	57
7	Biophysical baseline	58
7.1	Flora assessment.....	58
7.2	Trees And Shrubs.....	58
7.2.1	Methodology	58
7.2.2	Results.....	59
7.3	Grass Diversity	64
7.3.1	Introduction.....	64
7.3.2	Methodology	64
7.3.3	Results.....	65
7.3.4	Conclusion.....	67
7.4	Fauna assessment.....	68
7.5	Avifauna.....	68
7.5.1	Introduction.....	68
7.5.2	Methodology	68
7.5.3	Results.....	69
7.6	Mammal diversity.....	69
7.6.1	Introduction.....	69
7.6.2	Methodology	70

7.6.3	Results.....	70
7.7	Reptile diversity	71
7.7.1	Introduction.....	71
7.7.2	Conclusion.....	74
8	Summary of baseline recommendations	75
8.1	Public participation.....	75
8.2	Socio-cultural recommendations	75
8.3	Flora Recommendations.....	76
8.4	Fauna Recommendations.....	77
9	Environmental Impact Assessment	79
9.1	Rapid Impact Assessment Matrix (RIAM).....	79
9.1.1	Methodology	79
10	Conclusion	106
11	Recommendations	106
	Acknowledgements.....	108
	References	109
	APPENDIX A – Public participation.....	113
	APPENDIX B – social –cultural assessment	144
	APPENDIX C – biophysical assessment.....	149

LIST OF FIGURES

Figure 1: Site location of Nkasa Lupala Tented lodge on the Border of Nkasa Lupala National Park, Caprivi.	13
Figure 2: Site location in proximity to Nkasa Lupala National Park boundary (Google, 2011).	14
Figure 3: Planned lodge layout.....	15
Figure 4: <i>Proposed access routes into the Nkasa Lupala Lodge site from Kongola and Katima Mulilo. The lodge site is highlighted in a red circle</i> (Micheletti, 2011).....	16
Figure 5: Proposed access route on the C49 from Kongola to the proposed lodge site (Micheletti, 2011).	17
Figure 6: Proposed entrance tracks to the lodge site from the Nkasa Lupala Park boundary.	18
Figure 7: Environmental Education unit to be upgraded.....	20
Figure 8: Ablution block.....	20
Figure 9: Draft EIA regulations based on Namibia’s Environmental Assessment procedures (MET, 2008).	23
Figure 10: Overview of the hydrology of the Caprivi region and the location of the proposed lodge site (Sarma, 2011).....	33
Figure 11: Broad vegetation classification of the Caprivi Strip (Mendelsohn & Roberts, 1997).	36
Figure 12: Attendance of Interested and Affected Parties at the first Public Meeting that took place in Sangwali Village on the 24 th March 2011.	41
Figure 13: Second Public Meeting	41
Figure 14: Traditional dwelling of the Mayeyi in the Caprivi Strip.....	46
Figure 15: Wuparo Conservancy Office	47
Figure 16: Sangwali Health Care Centre.....	47
Figure 17: Sangwali Primary School	48
Figure 18: Sangwali Secondary School.....	48
Figure 19: Rupara Community Camp Site Signage.....	48
Figure 20: Livestock on the edges of the wetland areas, Caprivi Strip.....	49
Figure 21: Sheshe Craft Centre, Sangwali Village.....	55
Figure 22: Sheshe Community Craft Shop Staff.....	55
Figure 23: MCA and Sangwali Community Grant Meeting	56
Figure 24: Trees & shrub transects conducted at the proposed development lodge site.	59
Figure 25: Percentage (%) of occurrence of trees and shrubs at the proposed lodge site. ...	61
Figure 26: Photographs of the vegetation transects.	63
Figure 27: Invasive <i>Lantana camara</i>	63
Figure 28: Location of grass transects at the proposed lodge site.....	65
Figure 29: Percentage (%) of occurrence of grass species at the lodge site.	66
Figure 30: Impact histogram for the Nkasa Lupala Tented Lodge Development.....	102
Figure 31: Impact histogram for the No-Action Alternative option.....	105
Figure 32: Option Summary Histogram: Comparison of development activities at the proposed site Vs the No-Action Alternative (OP1 – Nkasa Lupala Tented Lodge Development; OP2 – No Action Alternative).....	106
Figure 33: The Wuparo Conservancy Wardens.....	108

LIST OF TABLES

Table 1: Habitat classes defined for the Caprivi Region by Hines in Mendelsohn & Roberts (1997), with the region in which the lodge site occurs, highlighted (Figure 11). 34

Table 2: Results of the Public Participation Process: Issues & Concerns raised by the Sangwali Community and I&APs (1st and 2nd Public Meetings)..... 42

Table 3: Summary of interviewee’s answers to the Questionnaire survey in Sangwali Village. 50

Table 4: Summary: Nkasa Lupala Lodge site’s dominant grass and woody species. 66

Table 5: Summary of reptile families expected to occur in the study area. 71

Table 6: Summary of amphibian families expected to occur in the study area..... 73

Table 7: RIAM Environmental Components defined as per Pastakia (1998) 79

Table 8: RIAM Matrix Ranking Criteria 80

Table 9: Description of RIAM Environmental Scores (ES) range bands used in the analysis of the impacts..... 81

Table 10: Construction Phase. Identification and assessment of construction phase impacts. 82

Table 11: Operational Phase. Identification and assessment of construction phase impacts. 87

Table 12: Decommissioning Phase. Identification and assessment of construction phase impacts. 93

Table 13: Nkasa Lupala Tented Lodge proposed development Impact Analysis 98

Table 14: No-Action Alternative Impact Analysis 103

Table 15: Names of interviewee’s interviewed with the qualitative questionnaire survey in Sangwali Village..... 145

Table 16: Trees, shrubs and flowering plants identified at the proposed lodge development site. 149

Table 17: Grasses identified in the proposed lodge development site. 150

Table 18: Bird species identified in the proposed lodge development site. 150

LIST OF ACRONYMS

AGM	Annual General Meeting
BID	Background Information Document
BMN	Bwabwata-Mudumu-Nkasa Lupala Complex
CBNRM	Community Based Natural Resource Management
DEA	Directorate of Environmental Affairs
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMA	Environmental Management Act
EMP	Environmental Management Plan
ES	Environmental Score
GPS	Global Positioning System
I&AP	Interested & Affected Parties
IBAs	Important Birds Areas
IEE	Initial Environmental Evaluation
IRDNC	Integrated Rural Development and Nature Conservation
MCA	Millennium Challenge Account
MCC	Millennium Challenge Corporation
MET	Ministry of Environment and Tourism
MSC	Mudumu South Complex
MWAF	Ministry of Agriculture, Water and Forestry
NLTL	Nkasa Lupala Tented Lodge
NOA	Namibian Organic Association
NTB	Namibian Tourism Board
PP	Public Participation
RIAM	Rapid Impact Assessment Matrix
SADC	Southern African Development Community
SGP	Small Grants Programme
SPAN	Strengthening the Protected Areas Network
WCDF	Wildlife and Community Development Fund
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

This document forms the Environmental Impact Statement (EIS) produced during the Environmental Impact Assessment (EIA) for the Nkasa Lupala Tented Lodge (NLTL) development for Gafil cc. The EIA was commissioned by the Proponent, Gafil cc, in line with the EIA Draft regulations of April 2008. The EIA was undertaken by Namib Hydrosearch cc.

OBJECTIVES

The principal objectives of this EIA were to identify, quantify and evaluate any potential detrimental and/or positive environmental impacts of the project concept of the intended NLTL development. An environmental management plan (EMP) for the construction and operational phases of the development is provided to regulate activities and to monitor the impact of these activities. In addition, environmental monitoring procedures are also outlined.

METHODOLOGY

A field site visit was undertaken, which focused on the site-specific current status and intended development area. Information collated through the business plan proposal and through the public participation consultation process was used to identify potential environmental impacts of the intended development.

The software programme, Rapid Impact Assessment Matrix (RIAM) was employed for the quantitative impact analysis. The EIA process is designed to focus on an environmental management approach during the phases of the development (i.e. construction, operation and decommissioning) to prevent any negative impacts of the lodge development, or to ensure that they are reduced and remain as low and controlled as possible.

The key features of this assessment are:

1. Prediction of potential impacts that might be caused by the intended project concept of the tented lodge development.
2. Identifying the relative importance of each impact through a rapid assessment process.
3. Proposition of impact avoidance and/or mitigation measures that should be incorporated into all phases of the project.
4. Proposed environmental management plan.

The EMP was formulated to provide a structure for implementing the mitigation measures. It details the mitigation measures for each specific impact and the person or agency responsible for undertaking the necessary actions, and the remedial procedures that can be followed. In addition, it provides an overview of the aspects of the lodge to be monitored and audited through the life span of the lodge's intended operation.

SUMMARY OF POTENTIAL SIGNIFICANT POSITIVE IMPACTS

- The socio-economic context of the area intended to be developed.
- The expansion of collaborative arrangements of the Wuparo Conservancy as a freehold management unit to include a tourism operator.
- There could be significant financial benefits for the Wuparo Conservancy Community from the operation of the lodge (i.e. employment opportunities; community based tourism projects; educational facilities and skills development).
- Diversification of the tourism market in Wuparo Conservancy and within Caprivi region and associated influx of tourist numbers into the area.
- Tourism presence and associated reduction of illegal poaching in the Wuparo Conservancy and surrounding protected areas.
- Wildlife monitoring by the lodge guides will be of significant benefit to the understanding of the ecological dynamics (i.e. flooding, animal numbers and movement) of the Nkasa Lupala National Park ecosystem.
- Removal of solid waste from the Wuparo Conservancy to the Katima Mulilo Landfill.

SUMMARY OF POTENTIAL NEGATIVE IMPACTS

- A potential clash of activities between the existing Caprivi Hunting Safaris cc, the trophy hunting lodge, and the proposed tented lodge development site.
- Potential soil erosion caused by vegetation removal and infrastructural development
- Potential soil contamination if the septic tank soak-aways are ineffective or poorly maintained.
- Potential removal of vegetation and loss of biodiversity on the northern perimeter of the proposed development site.
- The visual pollution caused initially by construction activities at the site and the damage/disturbance along the access route to the site during the delivery of equipment.
- Fire hazards in the area are a significant risk for wildlife and the lodge development.
- Potential failure of the delivery of funds from the external donor agency (MCA) to the lodge proponent and to the Wuparo Conservancy. This is stated on the premise that the MCA funding is subject to restraining requirements and that the funding allocation is dependent upon the success of the grant application by the Wuparo Conservancy.
- Maintenance of social dynamics such as transparency, trust and loyalty between the lodge proponent and the Wuparo community.

SUMMARY OF KEY MITIGATION MEASURES

- The lodge proponent and the trophy hunting operator devise a communication strategy whilst operating in the Wuparo Conservancy simultaneously (e.g. areas being traversed for hunting and game viewing opportunities).
- Maximise job opportunities for the surrounding communities during construction and on a permanent basis once the proposed lodge is operational.
- Establish lines of communication between the Ministry of Environment and Tourism (MET), the Wuparo Conservancy community, IRDNC, WWF, MCC and Nkasa Lupala Tented Lodge to help maximise community benefits from the lodge's development and minimise conflict situations.

- Involve the Wuparo community in planning and decision making processes.
- Implement an environmental awareness policy for all staff and guests.
- Investigate sewage waste disposal systems for the development and staff housing units to sustain the external load on the system.
- Minimise construction time and thereby reduce disturbance.
- Limit vegetation removal and use natural coloured building materials and finishing features to blend into the surrounding landscape so as to minimise visual pollution.
- To avoid the destruction of vegetation and birdlife along the northern perimeter of the development site; the associated tent infrastructure and walkways should be raised up on platforms. This structure would minimise the loss of biodiversity and also increase the safety of the visitors and staff walking from the main areas to the accommodation units.
- Monitor water quantity and quality and be prepared for the requirement of a borehole in proximity to camp, due to the seasonal fluctuations in the water table and unpredictable drought and flooding regimes.
- Prepare lodge fire and flood contingency plans.
- Maximise green building construction principles (e.g. solar panels, rainwater tanks etc.), landscape design and visual impact.
- Nkasa Lupala Tented Lodge to apply for MET permission to conduct walking and boating safaris to minimise use of vehicles and fuel and enhance the overall guest experience.
- Maximise international marketing opportunities with the Namibian Tourism Board (NTB) so as to co-market the entire Caprivi region destination with the proposed lodge.
- Nkasa Lupala Tented Lodge to share their monitoring data with the local Park Wardens.

KEY LEGISLATION FOLLOWED

The following Acts and National regulations must be adhered to:

- Environmental Management Act, 2007 (Act No. 7 of 2007)
- Draft procedures and guidelines for Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP), No 1 (Draft, April 2008)
- Water Act 54 of 1956
- Water Resources Management Act (No 24 of 2004)
- Namibia Corporate Water Act, 1997
- The Public Health Act 36 of 1919
- Forest Act, 2001
- National Heritage Act (No 27 of 2004)
- Accommodation Establishments and Tourism Ordinance 20 of 1973.
- Namibia Tourism Board Act 21 of 2000.
- Namibia Wildlife Resorts Company Act, 1998
- Environment Investment Fund of Namibia Act, 2001. No. 13 of 2001
- Plant Quarantine Act 7 of 2008.
- Nature Conservation Ordinance 4 of 1975

- Local Authorities Act, 1992. No. 23
- Game Products Trust Fund Act 7 of 1997
- Traditional Authorities Act, 2000
- Labour Act, 2007.
- Foreign Investments Act 27 Of 1990
- Nature Conservation General Amendment Act, No. 31 of 1990
- Communal Land Reform Act, No. 5 of 2002

Local Legislation and Policies:

- Draft Parks and Wildlife Management Bill 2001
- National Policy on Tourism for Namibia
- Namibia's Community Based Tourism Policy
- Pollution Control and Waste Management Bill

ENVIRONMENTAL IMPACT STATEMENT

The proposed Nkasa Lupala Tented Lodge has potential and contains positive impacts linked with the outcome of benefits for the proposed lodge development and the Wuparo Conservancy. The analysis of the EIA impacts revealed that the positive impacts when compared to the No-Action alternative largely benefit the *social-cultural* and *economical-operational* aspects of the proposed development. Possible negative impacts can be avoided or reduced considerably through consultation, proper planning and construction. On this basis, it is recommended that Nkasa Lupala Tented Lodge be granted the appropriate approval to develop the proposed lodge in the Wuparo Conservancy, however, provided that the identified negative impacts be addressed and properly mitigated and all baseline study recommendations are implemented.

1 INTRODUCTION

1.1 THE PROJECT (NKASA LUPALA TENTED LODGE DEVELOPMENT)

Gafil cc intends to develop a new mid-market tented lodge of 10 tents, which can accommodate a maximum of 20 guests. The Wuparo Conservancy has formed a joint venture with Gafil cc to develop the new tented lodge. It is the intention of the proponent to increase the capacity of the tented lodge or to add other facilities in other locations should the lodge development be successful and beneficial to the Wuparo Conservancy in the future.

The Proponent is in the process of applying for the Leasehold Land Rights for a total area of 13,956 ha, situated within the Sangwali Communal Area of the Linyanti Constituency in the Caprivi Land Board area, and is awaiting the final decision.

The Wuparo Conservancy has submitted an application to the Ministry of Environment and Tourism (MET) for the change of the name of Mamili National Park to Nkasa Lupala National Park. Thus, throughout this report, the renowned Mamili National Park will be referred to as Nkasa Lupala National Park.

1.2 SITE LOCATION AND DESCRIPTION

1.2.1 Detailed location of lodge site for Nkasa Lupala

The selected lodge site (GPS location: -18.329582°, 23.670884°) is located approximately 9 km south east of Sangwali Village within the Wuparo Conservancy between Mudumu and Nkasa Rupara National Parks (Figure 1). The northern perimeter of the proposed lodge site is situated close to a water channel, with the southern portion of the proposed area extending into mixed woodland towards the park boundary (Figure 2, Figure 3). The Wuparo Conservancy Officers have granted the lodge Proponent an exclusive traversing right of 6.6 km².

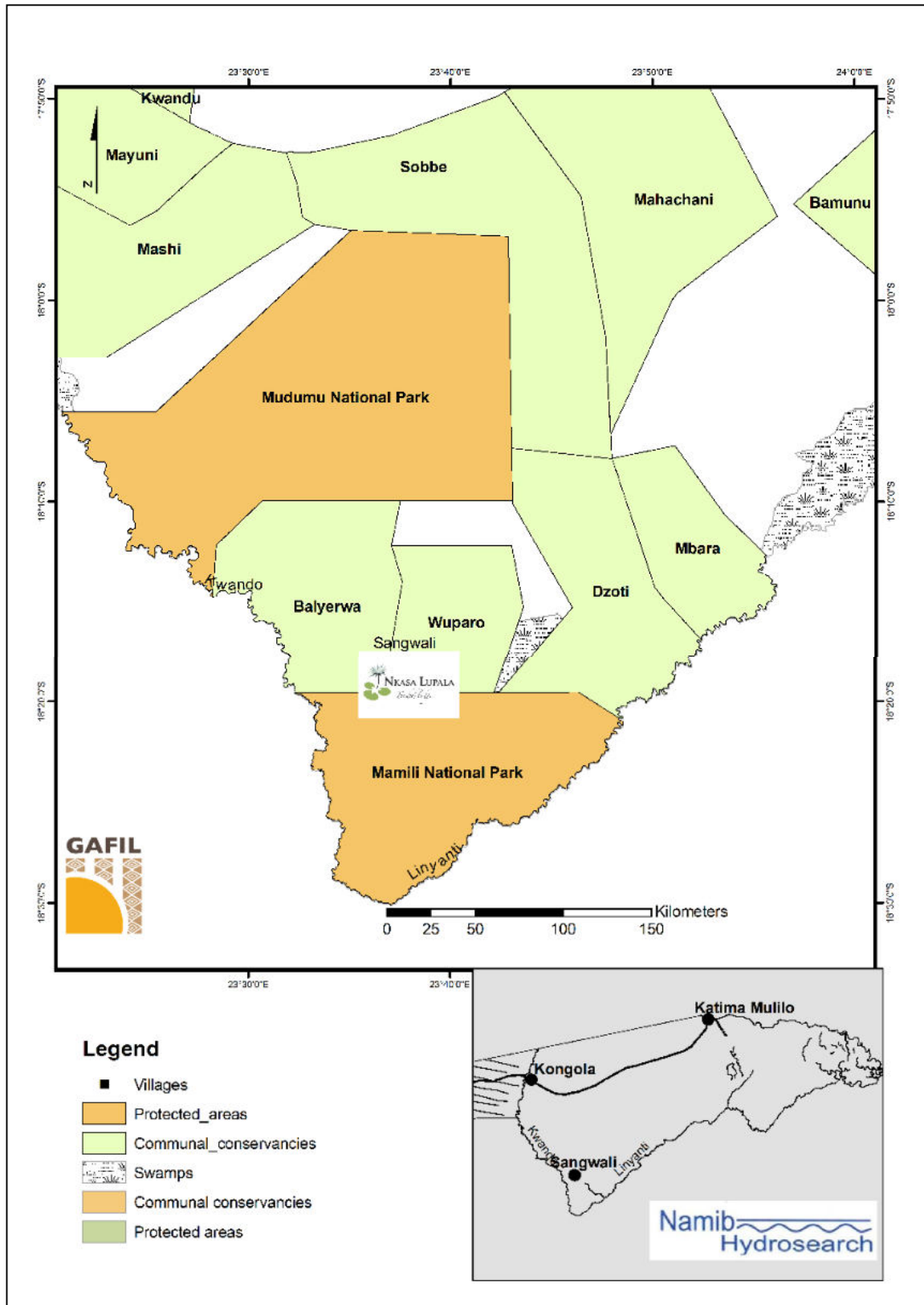


Figure 1: Site location of Nkasa Lupala Tented lodge on the Border of Nkasa Lupala National Park, Caprivi.



Figure 2: Site location in proximity to Nkasa Lupala National Park boundary (Google, 2011).

1.3 DESIGN AND SIZE OF THE PROJECT

The lodge has been designed to fit into the environmental setting on the edge of a water channel. The large trees (Jackleberry and Ordeal trees) on the northern edge of the perimeter of the proposed lodge site will provide adequate shade for the guest tents, the central lodge living area and the back-of-house operations (i.e. kitchen and laundry facilities).

The proposed new tented lodge development design will consist of the following structures Figure 3):

- Ten (10) tents on stilts, constructed of steel, canvas and wood with secure doors and windows and en-suite bathroom facilities;
- Central dining area with an open-air fireplace, lounge and bar facility, which will be linked to the tents through a network of pathways.
- Central storage unit, kitchen and office area;
- Staff (single quarters with shared ablutions) and two management houses;
- Mechanical and maintenance workshops

The tent structures will be built on stilts and must be raised approximately 1 m from the surface of the ground as a flood contingency approach to the design of the camp. The network of pathways linking the tents to the main area will be on the ground. The storage facilities (i.e. containers), kitchens, maintenance workshop, staff ablutions will be built on the ground. Two staff houses will be built close to the lodge facilities for guest safety and security. Single quarters with shared ablution facilities for males and females will be provided.

The lodge will initially be a 20 bed non-permanent camp. The lodge will be built with 9 standard guest units and one family guest unit, accommodating 4 guests. Each of the standard guest units will be approximately 31.5 m² in size (9 m x 3.5 m).



Figure 3: Planned lodge layout

1.4 BULK SERVICES AND ASSOCIATED INFRASTRUCTURE

1.4.1 Sewage Disposal

'Poly-rib' septic tanks based on the Ballam Waterslot (PTY) Limited design will be constructed on site to manage sewage disposal. One septic tank will be provided for every two toilets and the final effluent will be released into soak-aways.

1.4.2 Solid and Hazardous Waste Disposal

Solid waste

Solid waste will be transported to the central landfill in Katima Mulilo. A solid waste container (i.e. secure cage) will be built for the disposal of solid waste. A regular schedule must be drawn up to ensure the routine delivery of waste from the lodge site to the central landfill. The proponent has reached an agreement with the Wuparo Conservancy, and will collect the village's waste en-route to Katima Mulilo. An enclosed organic pit will be dug into the ground and covered with a secure lid to prevent animals from gaining access to the contents of the pit. Birds (e.g. hornbills), baboons, hyaena's and porcupines are regularly attracted to organic waste, which is a safety and hygiene issue for guests and staff.

Hazardous waste removal

Batteries (e.g. camera and vehicle batteries) will be deposited at the hazardous waste disposal site in Katima Mulilo.

1.4.3 Water Supply

The camp's basic water needs (i.e. showers, vehicle wash bays etc) are planned to be met by the use of off-takes from the surrounding water channels in the area. Water for drinking purposes, however, will be potable from bottled water.

1.4.4 Power Supply

Power will be provided by solar panels, which will be erected for the provision of electricity and the camp water heating systems. Thus, the lodge will make use of solar radiation for the electrical and power demands. LED energy saving globes will be used to minimise the demands on electrical energy in the lodge.

1.5 Proposed Transport and Access Arrangements

1.5.1 Guest access to the proposed lodge site

Main access to the lodge site for visitors will be from the west along the Caprivi Strip (B8), to Kongola and thereafter south east (Figure 4) to Sangwali Village. The Trans - Caprivi Tour Route provides the eastern access route from Zambia and Zimbabwe and currently links Victoria Falls to Etosha via the Caprivi Strip and Rundu. This is a good quality tarred road (Jones *et al.* 2009) (Figure 4, Figure 5).

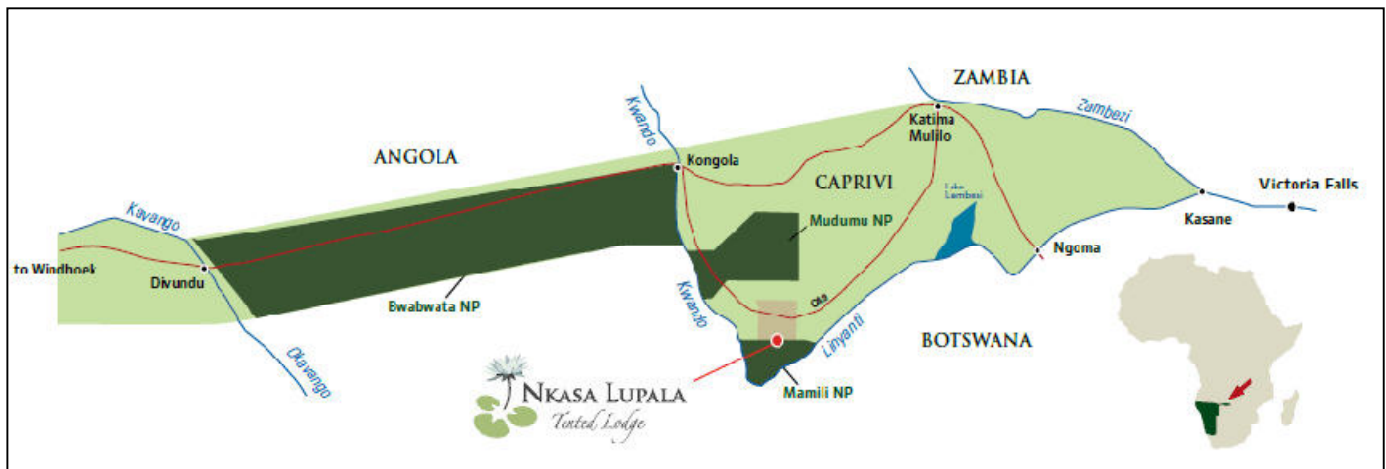


Figure 4: Proposed access routes into the Nkasa Lupala Lodge site from Kongola and Katima Mulilo. The lodge site is highlighted in a red circle (Micheletti, 2011).

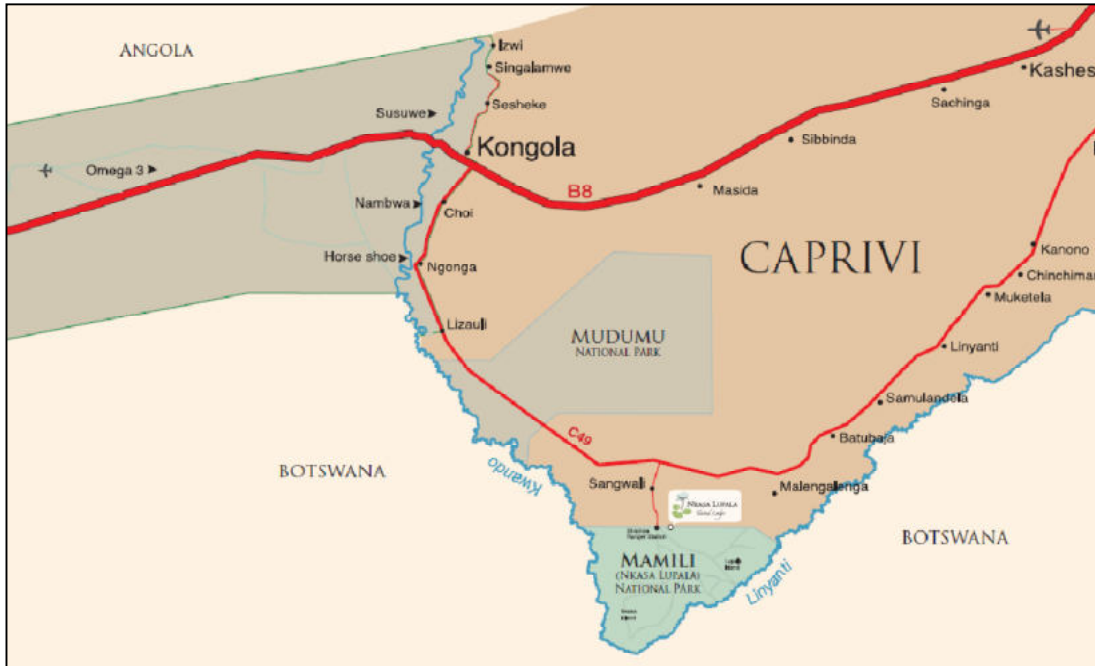


Figure 5: Proposed access route on the C49 from Kongola to the proposed lodge site (Micheletti, 2011).

1.5.2 New entrance tracks

Two tracks are required for access to the proposed lodge site (Figure 6). The eastern access route is an existing track and follows the eastern edge of the demarcated lodge perimeter. This track will serve as the guest entrance to the lodge. A new track is proposed on the western edge of the perimeter, which is to lead to the staff management houses. The two entrance tracks are accessible from the Nkasa Lupala Park boundary on the southern perimeter of the proposed development site. Permission must be requested from MET and the Wuparo Conservancy management committee for the placement of signage on the park boundary for directions to the lodge and staff entrance.

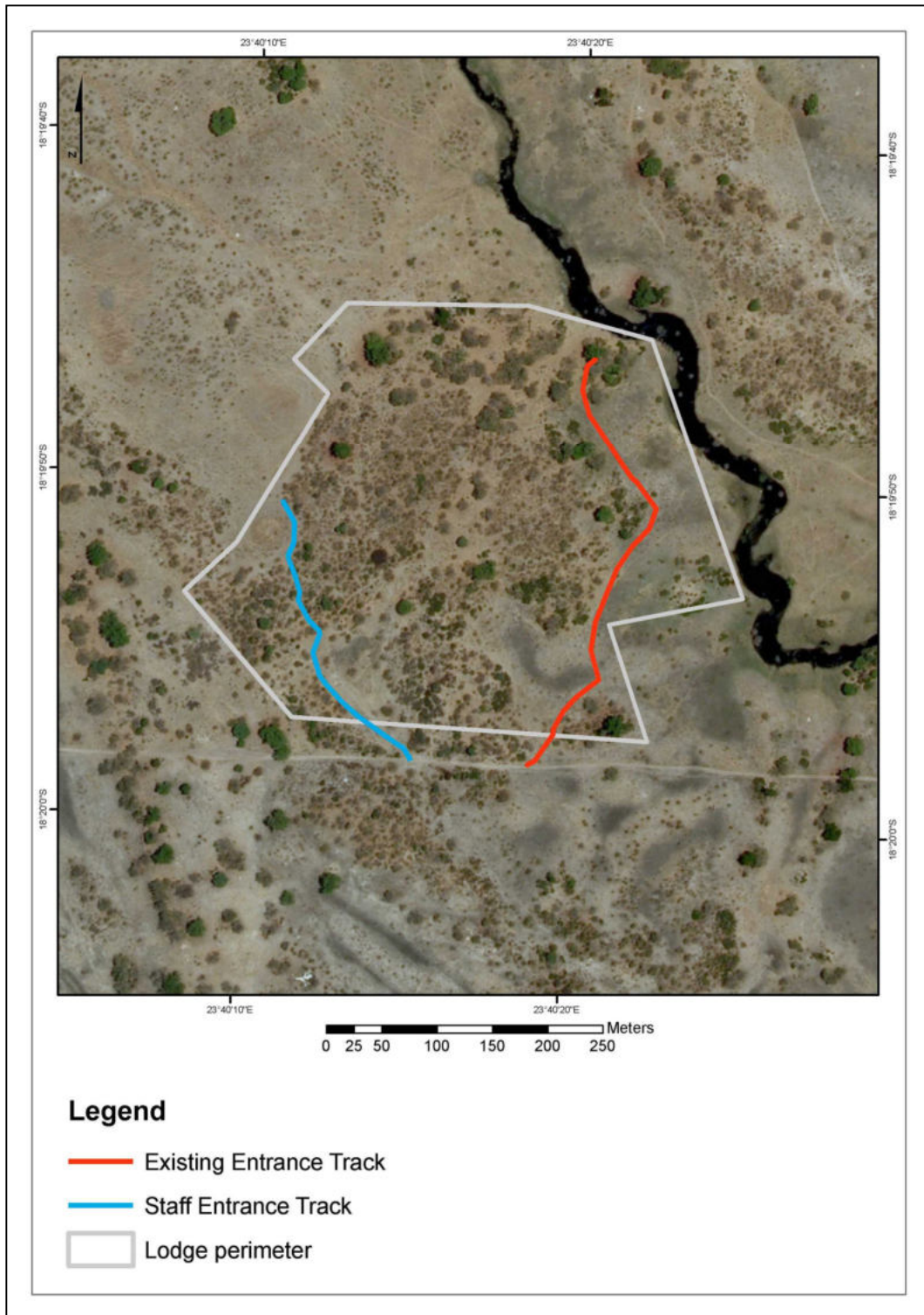


Figure 6: Proposed entrance tracks to the lodge site from the Nkasa Lupala Park boundary.

The minor access routes in the development area and associated infrastructure would be relatively small, which are located in an open passage through the vegetation at the site, and thus have localised negative implications (e.g. habitat destruction/alteration) on the environment and associated fauna in the proposed area.

1.5.3 Purpose and rationale of the project

It is the intention of the developers to develop a tented tourism lodge with tents on raised platforms to accommodate 20 guests and approximately 11- 13 staff. The key elements of the project and objectives of the developers are to advance the area socially, economically and culturally through establishing a profitable mid-market tourism facility in the Wuparo Conservancy. If successful, the project could provide significant benefits to the Mayeyi community in Sangwali above and beyond employing members of the community. Thus, the project presents an opportunity, and motivation for the surrounding villages to expand their traditional customs and handmade craft industry in the area. Therefore, guests visiting the lodge would benefit from close interaction with community members, be it within the Sangwali vicinity or at the lodge site learning about the Mayeyi lifestyle, culture and history.

The initial staff complement that will be employed at the lodge may have to be sourced from the hospitality industry to assist with the training, minimum standards to be achieved, and to develop the lodge product. The proponent intends to train the lodge staff, who will be selected from the Wuparo community with the assistance of the community representatives. In the first 3 years, the proponent will source 60 % of the staff complement from the Wuparo Conservancy, and after the 4th year, 80 %. Guide training will be facilitated by the head-guide of the lodge and the remaining guide team will be selected from the conservancy. Promising staff members (i.e. committed trained lodge employees) will be sponsored by the proponent to attend Namibian Organic Association (NOA) accredited courses. In addition to this, a tourism fund will be established to the value of N\$1000.00 to assist a Wuparo community member to further their studies in the tourism industry.

Thus, on this proposition, the lodge will increase employment opportunities in the Wuparo Conservancy area, with particular reference for the surrounding villages, Sangwali and Samudono. The lodge will therefore help to provide sustainable, long –term economic support to the area.

The proponent intends to socially uplift the community and make provision for a kindergarten school. A non-governmental organisation (NGO) in Italy will facilitate working with the community and the lodge investors on this project.

In addition, the neglected education centre, in proximity to the Rupara camp site will be renovated to re-establish the environmental learning centre for the community and for the Caprivi region (Figure 7, Figure 8). The old establishment consists of cement bases with reed walls, thatch roofing, and includes two ablution blocks.

Furthermore, the proponent envisages the establishment of a community-run vegetable garden and a chicken hatchery (i.e. poultry and vegetable projects) managed by the community, in order to generate local businesses responsible for supplying the lodge with fresh produce.

Building supplies will be sourced from the immediate area (i.e. the Caprivi region), with the provision of labour from local builders and artisans. Items such as thatch, grass, bricks, reeds and poles will be sourced from the Wuparo community with the assistance of the Concessionaire.

The purpose of the NLTTL project is to develop tourism activities for self drive tourists and clients arranged through Tour Operators, who stay at their lodge. Activities envisaged include game drives (and game viewing from camp), walking safaris and boating activities, of which the latter two are dependent on approval from MET. The activities are proposed to take place in the Nkasa Lupala National Park and in the Wuparo Conservancy.

Development of the lodge will help diversify the tourism market in the Caprivi region and will thereby assist and support the stated aims of the Namibia Tourism and Community Based policies, and the tourism and conservancy-based incentives in collaborative arrangements.

The Nkasa Lupala and Mudumu National Parks will benefit from the influx of tourists visiting the lodge in a controlled, sustainable manner, which will generate long-term, reliable, economic benefits for these protected areas.



Figure 7: Environmental Education unit to be upgraded



Figure 8: Ablution block

1.5.4 Current status of the site

The lodge construction is to be undertaken by Trevor Nott. The tenure of the lease being applied for is for 10 years, with the intention of extending the lease for a further 10 years.

1.5.5 Intended duration of the development

The intended project aims to be completed over a 5 month period. There are certain government statutory procedures which have to be completed and adhered to before any construction can begin. The best season to see high densities and a wide variety of game in the Caprivi region is the dry season (May - October), when game concentrates at water channels or filled pans. The opening of the lodge is therefore intended to coincide with this season.

1.5.6 Desirability of the project

The project aims to provide a unique mid-market tourism facility in a specialized environment that will be able to compete with similar camps in the neighbouring area. The NLTL tourism initiative is an agreement between Gafil cc and the Wuparo Conservancy, which represents the Wuparo Community in the surrounding area. This project will diversify Namibia's tourism market with the development of an environmentally sustainable, non-permanent lodge in a marginal area within the Wuparo Conservancy and thereby increase the revenue and work opportunities for the inhabitants of this area.

1.5.7 Perceived positive benefits of the intended development (potential)

- Expansion of the collaborative arrangements of the Wuparo Conservancy as a freehold management unit.
- External input and support of the Wuparo communities by IRDNC and WWF.
- Socio-economic benefits (i.e. employment opportunities) to the Wuparo Conservancy community members in the three main villages.
- Community based tourism projects and skills base development
- Expansion of the protected area on the border of the Nkasa Lupala National Park
- Expansion of community trade (i.e. hand-made crafts)
- Removal of solid waste from the Wuparo Conservancy.
- Monitoring of game populations (i.e. local movements of game) and reporting to the park wardens.
- Diversification of the tourism market in the Caprivi region and partnership conservancy.
- Increase of tourists in the area.
- Tourism presence and associated monitoring of potential illegal poaching in the conservancy and surrounding protected areas.

1.5.8 Perceived potential detrimental impacts from the Development

- Proposed position of the lodge in proximity to Caprivi Hunting Safaris cc, the trophy hunting camp in the Wuparo Conservancy (approx. 2 km).
- The external donor agency (MCA) and associated socio-economic impact to the community in the Wuparo Conservancy.
- Maintenance of transparency, trust and loyalty between the lodge proponent and the Wuparo Conservancy.
- High expectations of the Wuparo community of the proposed lodge development and associated dissatisfaction with the allotted benefits.
- Contractual arrangements between the lodge proponent and the Wuparo Conservancy office members.
- Water abstraction from the surrounding swamps.
- Potential water pollution from solid waste disposal at the lodge site.
- Destruction of vegetation and potential loss of biodiversity at the development site.
- Potential run-away fire from the lodge.

2 CONTEXT OF THE ENVIRONMENTAL IMPACT ASSESSMENT

The Proponent, Gafil cc, appointed Namib Hydrossearch cc as the environmental practitioner for the EIA in terms of the Environmental Management Act (EMA), No 7 of 2007, and draft EIA regulations of 2008 (April) (Figure 9), and to write this Environmental Impact Statement (EIS). Namib Hydrossearch cc has produced this Baseline Report in accordance with Part VII Section 27 (2) of the EMA and Part II Section 1.4 of the EIA regulations. The public participation of the EIA was also conducted by Namib Hydrossearch cc, and thus fulfils the requirements of Part III Section 3.4 of the EIA regulations for the EA process.

Namibia's Environmental Policy requires that an EIA and an EMP be conducted for development projects where significant environmental impacts have been identified. MET issued Gafil cc, the Proponent, a request for a full EIA and EMP based on the nature of the development (tourism) and its proximity to the National Parks in the area (Appendix A). The Proponent and the environmental consultant agreed that a full EIA be conducted. In this case, the project and its potential impacts were assessed and the EIA was implemented. The scoping phase of the project was not conducted as part of the statutory EA requirements, although a detailed EIA was immediately implemented. The basis of the scoping phase not being conducted was set on the premise that the review period by MET would be reduced, and the travelling costs incurred by the project proponent would be substantially reduced.

During March 2011, an application to undertake an Environmental Impact Assessment (EIA) was submitted to the Directorate of Environmental Affairs (DEA) of the Ministry of Environment and Tourism (MET). MET has since acknowledged receipt of the application and will be the competent authority responsible for the environmental authorisation of the project.

This EIA and EMP are valid for the construction, operational and decommissioning phases of the development of the lodge.

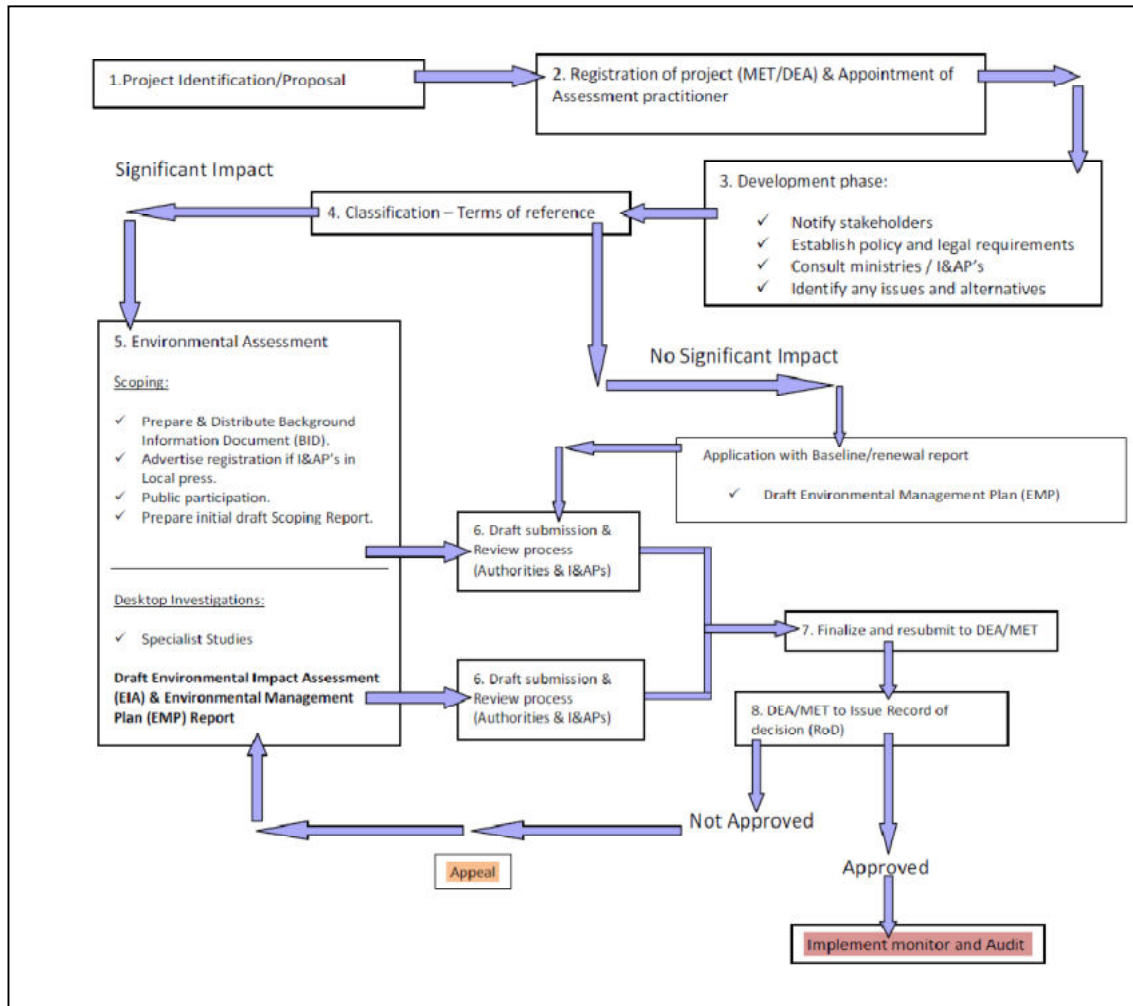


Figure 9: Draft EIA regulations based on Namibia's Environmental Assessment procedures (MET, 2008).

3 POLICY, LEGAL AND ADMINISTRATION FRAMEWORK

3.1 LEGAL AND POLICY REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENTS

A desk top appraisal of all the relevant legislation and policy was conducted to establish the legal framework within which the EIA for this new lodge was prepared. If the developmental and operational goals and objectives of the project are to be supported at the national and regional level it is imperative to ensure cognisance of all relevant policy.

3.1.1 National Legislation

3.1.1.1 Environmental Management Act, No. 7 of 2007

The Environmental Management Act (No.7, 2007) is to promote the sustainable management practices and provide for the assessment and control of activities which may have significant effects on the environment.

The Environmental Management Act's (No 7), 2007, Schedule 1, Part VII Section 27 (2) provides the legislative framework regulating developments/activities that may detrimentally affect the environment. Listed activities, which may not be undertaken without an environmental clearance certificate relevant to this project, are as follows:

- '2. (a) land transformation;
- '2. (b) water use and disposal;
- '2. (c) resource removal, including natural living resources
- '2 (i) waste and sewage disposal; chemical treatment
- '2 (j) recreation

3.1.1.2 Draft Procedures and Guidelines for Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP), No. 1 (Draft, April 2008)

The draft regulations (2008) infer that the primary functions of the EIA include;

- It is an aid to decision making – clarifying the tradeoffs associated with a proposed development by examining the environmental implications of a proposed development before any actions are undertaken.
- It is an aid to the formulation of development actions – indicating areas where the project can be modified to minimise or eliminate adverse impacts on the environment, leading to an environmentally sustainable development, with improved relations between developer and licensing authority and local communities, while also helping to ensure a financial return on the extra expenditure incurred.
- Ensures adequate environmental management – assessed through the life-cycle of the development from construction to decommissioning
- Involves public participation
- It is an instrument for sustainable development – if properly implemented, the EIA can lead to environmentally responsible investment.

The Draft Procedure and Guideline for EIA and EMP (April, 2008) Schedule 1, Part II Section 1.4 considers the activities potentially associated with the proposed development, both during the construction and operational phase. The listed activities that require that a *full Environmental Assessment* be undertaken, relevant to this project have been identified.

The applicable Construction and related activities to this Project proposal are as follows: -

'1 (o) 'The erection and the construction of tourism facilities and associated structures including all wheel drive trails or activities related to tourism that may have a significant effects on the environment'

'1 (p) 'The erection and construction of sewage treatment plants and associated infrastructure'

The applicable 'Land use planning and development activities' are as follows:

'2, (a) The rezoning of land from – (iv) use for nature conservation or zoned open space to any other land-use'

2.(b) Reclamation of land from below or above the high-water mark of the sea or associated inland waters'

3.1.1.3 Water Act 54 of 1956

Aims to consolidate and amend the laws relating to the control, conservation and use of water for domestic, agricultural, urban and industrial purposes; to make provision for the control, in certain respects, of the use of sea water for certain purposes, for the control of certain activities on or in water in certain areas; to make provision for the control of activities which may alter the natural occurrence of certain types of atmospheric precipitation; for the control, in certain respects, of the establishment or the extension of township in certain areas; and for incidental matters.

(d) Prevention of pollution of water

Aims to prevent any person who wilfully or negligently, and where any provision of Section 21 or 22 applies, contrary to that provision, undertakes any act which could pollute any public or private water, including underground water, or sea water in such way to render it less fit:

- (i) For the purpose for which it is or could be ordinary used by other persons
- (ii) For the propagation of fish or other aquatic life
- (iii) For recreational or other legitimate purposes, shall be guilty of an offence.

3.1.1.4 Water Resources Management Act No.24 of 2004

The Water Resource Management (Act 24 of 2004) has been promulgated and is currently applied by the Ministry of Agriculture, Water and Forestry (MAWF) with regard to water utilization and effluent disposal. The objectives (Section 2) of the Act are to ensure that Namibia's water resources are managed, developed, protected, conserved and consistent with or conducive to the principles set out in Part 1 Section 3 of the Act. The Water Management (Act 24 of 2004) is applied during the construction of the waterfront and pertains to the employees, workmen and sub-contractors on site.

Act No. 24 promotes correct waste management procedures through the control of waste storage, collection and transportation to acceptable standards, while promoting recycling and outlining the 'polluter pays principle'.

Subject to this Act:

- (a) ownership of water resources in Namibia and above the surface of the land belongs to the State; and
- (b) the State must ensure that water resources are managed and used to the benefit of all people in furtherance of the objective referred to in Section 2 and compatible with the fundamental principles in Section 3:

3.1.2 Namibia's Water Corporation Act, 1997

The purpose of this act is to aid in the establishment of Namibia Water Corporation Limited. This Act will regulate the powers, duties and functions of the above mentioned Corporation and assist in achieving a more efficient use of and control of Namibia's water resources.

3.1.2.1 The Public Health Act No. 36 of 1919

One of the areas regulated by the multi faceted Public Health Act 1919 is the pertinent issue of sanitation, public health and safety. It is important that there is compliance with the provisions listed below, particularly after the sewage treatment plants are operational. Section 119 of the Act – prohibits the existence of a nuisance on any land so owned or occupied. The terms nuisance is important for the purposes of this EIA in terms of Section 122 in the following regard:

- (a) any dwelling or premises which is or are of such construction or in a state or so situated or so dirty or so verminous as to be dangerous to health or which is or liable to favour the spread of any infectious diseases;
- (b) any stream,, pool...sink, water closet, earth closet, privy, urinal, cesspool, drain, sewer, dung pit, slop tank, ash pit or manure heap so foul or in such a state or so constructed as to be offensive or be injurious or dangerous to human health;
- (c) any well or source of water supply or any cistern or other receptacle for water, whether public or private from which water is used or likely to be used by man for drinking or domestic purposes or in connection with...any food for human consumption, which is polluted or otherwise liable to render any such water injurious or dangerous to health;
- (d) any area or land kept or permitted to remain in such a state as to be offensive, or liable to cause any infectious, communicable or preventable disease or injury or danger to health; or
- (e) any other condition whatever which is offensive, injurious or dangerous to health.

Certain sections of the Act regarding administration are also of importance to the client. Section 10 for instance obliges the client to conform with any additional public health legislation enacted by the authority.

3.1.2.2 Forest Act, 2001

The Act affords protection to any living tree, bush or shrub within 100m from any river, stream or watercourse. The Act also affords protection of certain indigenous trees, shrubs, or any indigenous plants.

3.1.2.3 National Heritage Act No. 27 of 2004

The Act ensures the protection of cultural and archaeological sites. The Act requires the identification of cultural and archaeological sites within the study area, registration and protection thereof.

3.1.2.4 Accommodation Establishments and Tourism Ordinance 20 of 1973.

This Ordinance consolidates the laws on establishing accommodation facilities and recreational areas for tourism purposes. It was extended and applied to the Eastern Caprivi Zipfel by GN 4/2000 (GG 2259). In January of 2000 the Government set out the 'Accommodation establishments and tourism ordinance, 1973: Amendment of regulations'. These amendments set out clear definitions, standards, and regulations for Tourism accommodation, including backpackers, self catering accommodation, guest houses. It also gives guidance for the grading system of these establishments as well as application for registration procedures and minimum requirements.

(The Ordinance was amended by:Ord. 25/1973, Ord. 17/1974, Ord. 12/1975, Ord. 5/1977, Ord. 14/1977, Ord. 4/1978, Ord. 11/1978 Ord. 14/1979).

3.1.2.5 Namibia Tourism Board Act No. 21 of 2000.

In this Act, the Namibia Tourism Board is established and its functions provided for. Registration of businesses, the grading system for establishments created for tourism purposes, and regulations for varying sectors of the tourism industry are also outlined.

3.1.2.6 Namibia Wildlife Resorts Company Act, 1998

This Act establishes a company (Namibian Wildlife Resorts Limited) in order to allow for the transfer to this company, of the State's Wildlife Resorts Enterprise (including National Parks, nature reserves, tourist recreational areas and their staff). The role of the state is that of Stakeholder.

1.1.2.10 Environment Investment Fund of Namibia Act No. 13 of 2001.

The Aim of this Act is to provide for the establishment of an Environmental Investment Fund of Namibia. This is intended to support sustainable environmental and natural resources management in Namibia. It requires that the Board manage and control the Fund transparently and clearly defines its powers and functions within this role.

3.1.2.11 Plant Quarantine Act No. 7 of 2008.

This Act exists to support efforts in the prevention, monitoring, controlling and eradication of plant pests. It also seeks to provide for the regulated and monitored movement of plants, plant products and other relevant articles into and out of Namibia. Certification of the phytosanitary standards of plants and plant products exported from Namibia is also a requirement of this Act.

3.1.2.12 Nature Conservation Ordinance 4 of 1975.

This Document was created to consolidate and amend laws already pertaining to the conservation of nature and the environment. It provides guidance for the establishment of game parks and nature reserves; and sets out appropriate measures for the control of problem animals.

3.1.2.13 Soil Conservation Act No. 76 of 1969

This Act covers all matters pertaining to the prevention and combating of soil erosion. Guidelines for the conservation, improvement and manner of use of the soil and vegetation; and the protection of water sources are also set out in this document.

3.1.2.14 No. 23 of 1992: Local Authorities Act, 1992

The aim of this Act is to facilitate the election and establishment of local authority councils, for purposes of local government, and to clearly define the powers, duties and functions of such local authority councils.

3.1.2.15 Game Products Trust Fund Act No. 7 of 1997

This Act seeks to provide for the establishment of the Game Products Trust Fund. This Fund was established in order to give support to the conservation and management of wildlife resources, and of rural development, in Namibia. It will also assist in the management and control of that Fund by the Game Products Trust Fund Board providing the guidelines and an appropriate framework to do so.

3.1.2.16 Traditional Authorities Act, 2000

The Traditional Authorities Act, 2000 seeks to facilitate the designation, election, appointment and recognition of traditional leaders and assist in the creation of traditional authorities. The powers, duties, responsibilities, and functions of these elected traditional authorities and leaders are also clearly set out in this Act.

3.1.2.17 Labour Act, 2007.

The Namibian Labour Act of 2007 seeks to consolidate and make amendments to the existing labour law in order to establish a comprehensive system for all employers and employees.

Fundamental labour rights and protections are set out; and the framework for the regulation of basic terms and conditions of employment is established. The Act also looks at the health, safety and welfare of employees in order to provide adequate protection to employees against unfair and unjust labour practices. Procedures to regulate the registration of trade unions and employers' organisations are addressed; as well as clear regulation of collective labour relations and the systematic prevention and resolution of labour disputes. The Labour Advisory Council, the Labour Court, the Wages Commission and the labour inspectorate are all established as well as providing for the appointment of the Labour Commissioner and the Deputy Labour Commissioner.

3.1.2.18 Foreign Investments Act No. 27 of 1990

This Act was created for the purpose of providing the appropriate promotion of foreign investments in Namibia. The Act was amended by the Foreign Investment Amendment Act, 1993 in order to provide a law relating to natural resources within Namibia or in fact any authorisation granted there under, for rights of exploitation of these resources in order to provide for more favourable treatment of Namibian citizens.

Outside of Namibia, any certificate holders of Status Investment of payments in foreign currency obtained from goods exported from Namibia shall be subject to the obligations of the Government of Namibia under existing monetary agreements and Law.

3.1.2.19 No. 31 of 1990: Nature Conservation General Amendment Act, 1990.

This is an amendment to the Nature Conservation Ordinance, 1975 (as given in the text above), and the Controlled Game Products Proclamation, 1980, and sets out an increase in a number of penalties which may now be imposed under the existing laws for violation thereof; and to provide for related matters.

3.1.2.20 No. 5 of 2002: Communal Land Reform Act, 2002.

The allocation of rights in regards to communal land, facilitating the creation of communal Land Boards and to provide for the powers and duties of the Local Chiefs and Elected Traditional Authorities and boards.

3.1.3 Local Legislation and Policy

3.1.3.1 Draft Parks and Wildlife Management Bill 2001

The draft Act seeks to protect all indigenous species in Namibia and to control any exploitation of all species. A legal framework is set out to support the maintenance of ecosystems, important ecological processes and the biological diversity of Namibia. It also seeks to facilitate a mutually beneficial co-existence between humans and wildlife.

The basic principles underlying the draft Act is maintaining the biological diversity and the essential biological processes that support life systems. Should this Act come into force, it will supersede the Nature Conservation Ordinance 4 of 1975.

3.1.3.2 National Policy on Tourism for Namibia

The main focus of this policy is Environmental sensitivities and sustainability. It states that, no tourist development should be at the detriment of biodiversity and it requires that a portion of any income obtained be re-invested into natural resource conservation. The policy is intended to put forward a tourism plan for Namibia and a framework for collaboration between key stakeholders, government, private sector and NGOs using strategies and programs.

3.1.3.3 Namibia's Community Based Tourism Policy

The Policy Document is aimed at providing the relevant support to community-run tourism activities as well as encouraging the development of enterprises on communal land. Also provided in this Policy is a set framework for helping to ensure that local communities have sufficient access to opportunities that arise from tourism development and are able to utilise the benefits of tourism activities that take place on communal land.

3.1.3.4 Pollution Control and Waste Management Bill

The NLTL development project is subject to the conditions presented in the Pollution and Waste Management Bill. The Bill aims to promote sustainable development and provides for the establishment of endeavours to control and prevent pollution in Namibia, which in effect regulates the discharge of pollutants to the air, water and land. The Bill furthermore, *inter alia*, regulates noise, dust and odour pollution and establishes a framework for integrated pollution prevention and control.

3.2 EIA PROCEDURE

3.2.1 Objectives

This project is subject to full Environmental Assessment to be approved by the Directorate of Environmental Affairs (Ministry of Environment and Tourism). Pursuant to Part VII Section 27(2) of the Environmental Management Act, No. 7 of 2007, DEA/MET accordingly issued the requirement for an EIA and EMP to be conducted (Appendix A). This Environmental Impact Assessment will review the potential impacts and benefits associated with the development.

The objectives of the EIA study are to:

- (i) Identify the key environmental issues associated with the project concept of the development of the Nkasa Lupala Tented Lodge and;
- (ii) Put forward mitigation measures of key environmental issues identified that need to be considered during the intended development in the Wuparo Conservancy.

3.2.2 Environmental Assessment Practitioner

Namib Hydrosearch cc (The Environmental Consultant) was appointed by Gafil cc (Proponent) to undertake the EIA for the intended lodge development.

Person/Institution	Responsibility
Glynis Humphrey (Namib Hydrosearch cc)	Public Participation and Social-Cultural Impact Analysis
Glynis Humphrey (Namib Hydrosearch cc)	Bio-physical Impact Analysis
Glynis Humphrey (Namib Hydrosearch cc)	Project Coordinator and Client Liaison

4 OVERVIEW OF THE BASELINE ENVIRONMENT

4.1 THE CAPRIVI REGION

The Caprivi region of Namibia is bordered by four countries namely, Angola and Zambia to the north, and Zimbabwe and Botswana to the east and south respectively. It lies approximately half way between the equator and the southern tip of Africa (Mendelsohn, 2007). The Caprivi wetlands account for the largest of Namibia's wetlands, covering an extent of 5000 km (Timberlake & Childes, 2004). The region is bordered in the west by the Okavango River, and in the east by the Chobe and the Zambezi Rivers, and thus forms part of the Zambezi River Basin (Bethune & Ruppel, 2007). The Eastern Caprivi wetlands are divided into 5 zones - upper Kwando River, lower Kwando and Linyanti swamp, Lake Liambezi, Chobe marsh, Zambezi and Chobe floodplains, and in wet years they all join up (Timberlake & Childes, 2004). The Nkasa Lupala National Park (360 km²) lies between the Kwando and Linyanti Rivers and can cover up to 80 % of its surface area in flooded in times of high floods (Rodwell *et al.* 1995).

4.2 TOPGRAPHY AND HYDROLOGY

Topographically, the Caprivi region is particularly flat. From the highest areas in the extreme west (about 1100m above sea level) elevations gradually drop to 930m near Impalila Island in the east.

The West Caprivi Strip is 180km long and 32km wide, forming an area of 5,715 sq km. It is composed of three distinct physiographic features, the perennial Kavango and Kwando Rivers, their floodplains and associated riparian vegetation; a parallel system of drainage lines or omuramba which lie in an east-southeast trend between the perennial rivers; and deep aeolian Kalahari sands, in some places formed into linear dunes 20-60m in height, supporting deciduous woodland savannah.

The only permanent surface water is in the perennial rivers. The omuramba are characterised by numerous seasonal rain filled pans which may hold water for up to five months after the last rains.

The Kwando River has a broad floodplain 2-5km wide with numerous backwaters and oxbow lakes. It joins the Zambezi River via the Linyanti and Chobe Rivers, and in years of flood may become confluent with the Okavango Delta via the Selinda Spillway.

The extensive sand cover and the rivers with their associated floodplains, channels and deposits are the major features that shape the landscape. The processes associated with these features have created six major land types:

- The Okavango, Kwando, Linyanti, Chobe and Zambezi rivers and their deeper channels that make up areas of open water.
- The floodplains associated with the rivers form flat areas dominated by grasslands and old river channels. River waters flood over these areas when good rains in the catchment areas cause river levels to rise.

- Riverine woodlands of the Okavango and Kwando river valleys and the Maningimanzi area on the Zambezi River, east of Katima Mulilo, are characterised by a high diversity of tall trees.
- Mopane woodlands lie in areas of old drainage lines which are being covered by wind-blown sand deposits.
- Kalahari woodlands cover the largest areas of sand dunes and interdune areas in the in the Mukwe area and Caprivi strip, and extensive plains in eastern-Caprivi.
- Impalila woodlands covering the island with the same name make up a small but unique area from the rest of Caprivi. These grow on basaltic rocks rather than wind-blown sands or river systems.

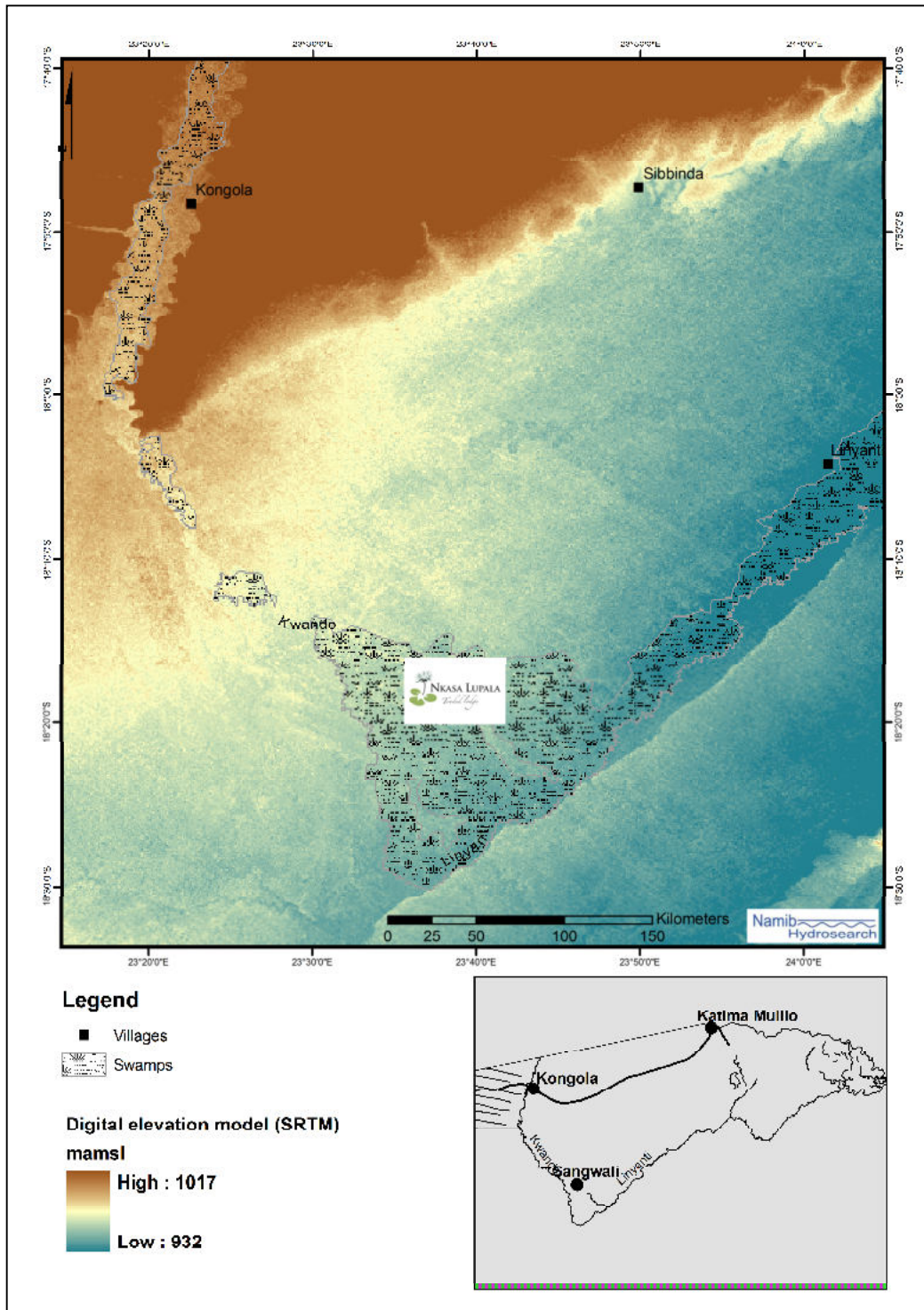


Figure 10: Overview of the hydrology of the Caprivi region and the location of the proposed lodge site (Sarma, 2011)

4.3 VEGETATION

4.3.1 REGIONAL VEGETATION COMPOSITION

The Environmental Profile and Atlas of the Caprivi (Mendelsohn & Roberts, 1997) describes the vegetation units and associated soils for the Caprivi Region. Hines in Mendelsohn & Roberts (1997) classified the vegetation into 5 specific units based on soil factors that can be more generally grouped into a number of principal habitat types (Table 1). The flooded areas are typically characterized by a high content of clay and organic material, and as such are classified as a heavy soil with low drainage potential. Aquatic plants, such as sedges and reeds are generally found in these flooded zones. According to the land use classifications, the major vegetation zone of this study area is categorized as a floodplain (Mendelsohn & Roberts, 1997). Three vegetation units have been identified in the broader study area and include Dry Mamili grassland and Wet Mamili grassland which are bordered to the west by the Kwando-Linyanti grasslands. The proposed development area lies within the centre of the Dry Mamili grassland (Figure 11), which is characterised by intermediate soils (loams, clay-loams and sandy clays (Mendelsohn & Roberts, 1997). Two factors affecting this soil composition are water and wind and the proportion of organic material deposited. The site specific soil type for the proposed development area is classified as clay-loam (Mendelsohn & Roberts, 1997).

Table 1: Habitat classes defined for the Caprivi Region by Hines in Mendelsohn & Roberts (1997), with the region in which the lodge site occurs, highlighted (Figure 11).

Vegetation Units	Soil Types	Grass component	Woody component
Dry Nkasa Lupala grassland	Sandy loams	<i>Cymbopogon excavautus</i> , <i>Andropogon schirensis</i> , <i>Setaria sphachelata</i> , <i>Cynodon dactylon</i> <i>Hyparrhenia hirta</i>	<i>Terminalia sericea</i> , <i>Combretum imberbe</i>
Wet Nkasa Lupala grassland	Clay loams	<i>Imperata cylindrical</i> , <i>Hemarthia altissima</i> , <i>Phragmites australis</i> , <i>Sedge sp.</i> <i>Eragrostic cf. Lappula</i> <i>Digitaria brazzae</i> <i>Hyperhenia rufa</i> <i>Ludetia simplex</i> <i>Tristachya superb</i>	<i>Acacia nigrescens</i> , <i>Garcinia livingstonei</i> , <i>Lonchocarpus capassa</i> <i>Philenoptera violacea</i> <i>Diospyros mespiliformis</i> , <i>Euclea divinorum</i> , <i>Diospyros lyciodes</i> , <i>Combretum hereonse</i>
Open Water	Hydromorphic	<i>Phragmites australis</i> <i>Cyperus papyrus</i> <i>Salvenia molesta</i> <i>Nymphia sp.</i> <i>Sedge sp.</i>	None
Floodplains Subunits	Clay loams	<i>Hyparrhenia hirta</i> <i>Cynodon dactylon</i> <i>Imperata cylindrical</i> <i>Hyperthelia dissolute</i> <i>Trachypogon spicatus</i> <i>Eragrostis spp.</i>	<i>Combretum imberbe</i>
Kwando-Linyanti	Sandy clay loams	<i>Miscanthus junceus</i>	None

grassland		<i>Vitiveria nigritana</i> <i>Echinochloa stagnina</i> <i>Vossia cuspidata</i> <i>Phragmites australis</i> <i>Echinochloa pyramidalis</i>	
Liambezi-Linyanti grassland	Loamy clays	<i>Eragrostis cf. lappula</i> <i>Imperata cylindrica</i> <i>Loudetia simplex</i> <i>Hemarthia altissima</i> <i>Cynodon dactylon</i>	None
Linyanti Woodland	Sands/clay-loams	<i>Stipagrostis uniplumis</i> <i>Digitaria eriantha</i> <i>Eragrostis rigidior</i> <i>Schmidtia pappophoroides</i> <i>Panicum maximum</i>	<i>Acacia erioloba</i> <i>Lonchocarpus capassa</i> <i>Combretum imberbe</i> <i>Acacia nigrescence</i> <i>Terminalia sericia</i> <i>Ziziphus mucronata</i> <i>Combretum hereroense</i> <i>Rhus tenuinervis</i> <i>Grewia flavescens</i> <i>Acacia fleckii</i>
Mopane-Aristida woodland	Clay-loams	<i>Aristida adscensionis</i> <i>Aristida rhiniochloa</i> <i>Chloris virgata</i> <i>Urochloa brachyuran</i> <i>Eragrostis viscose</i> <i>Eragrostis rigidior</i> <i>Digitaria eriantha</i> <i>Terminalia sericea</i>	<i>Cholophosperum mopane</i> <i>Acacia erioloba</i> <i>Acacia nigrescens</i> <i>Albizia harveyi</i> <i>Euclea devinorum</i> <i>Diosperos lycioides</i> <i>Ximenia Americana</i> <i>Croton gratissimus</i>
Mopane-Burkea woodland	Clay-loams	<i>Aristida adscensionis</i> <i>Aristida rhiniochloa</i> <i>Astrida stipoides</i> <i>Chloris virgata</i> <i>Melinis repens</i> <i>Eragrostis rigidior</i> <i>Schmidtia pappophoroides</i> <i>Stipagrostis uniplumis</i>	<i>Cholophosperum mopane</i> <i>Burkea Africana</i> <i>Erythrolpheum africanum</i> <i>Combretum collinum</i>
Mopane-Terminalia woodland	Sands/Clay loams	<i>Tricholaena monachne</i> <i>Aristida stipoides</i>	<i>Terminalia sericea</i> <i>Erythrolpheum africanum</i> <i>Burkea Africana</i> <i>Combretum collinum</i> <i>Acacia fleckii</i> <i>Cholophosperum mopane</i>
Mudumu Mulapo woodland	Sands/clay loams	<i>Eragritis pallens</i> <i>Aristida meridionalis</i> <i>Aristida stipitata</i> <i>Andropogon chinensis</i> <i>Manicum kalaharensis</i> <i>Astrida sp.</i> <i>Chloris virgata</i> <i>Eragrostis viscose</i>	<i>Terminalia sericea</i> <i>Burkea Africana</i> <i>Baphia massaiensis</i> <i>Bauhinia petersiana</i> <i>Combretum collinum</i> <i>Cholophosperum mopane</i>

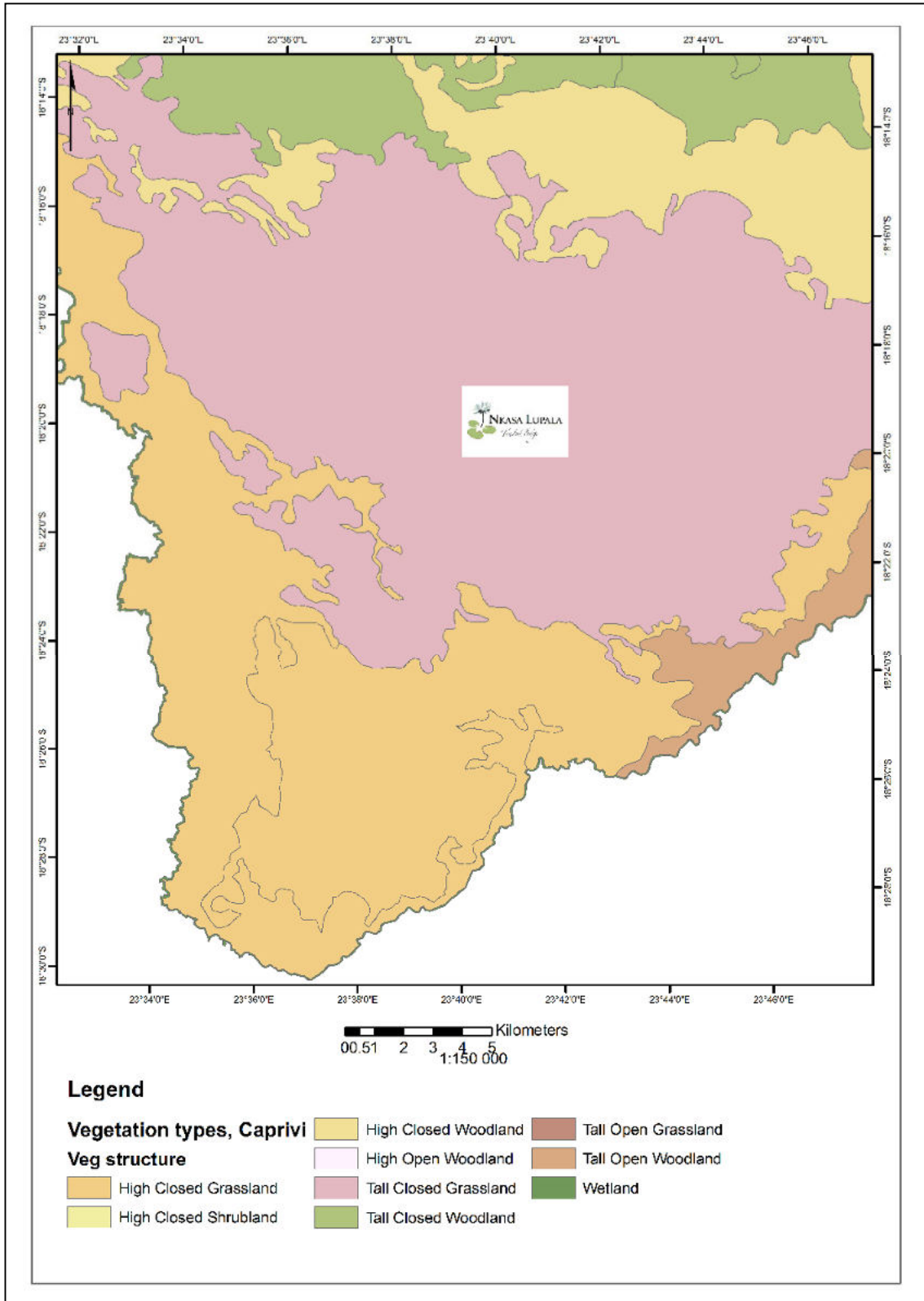


Figure 11: Broad vegetation classification of the Caprivi Strip (Mendelsohn & Roberts, 1997).

4.4 CLIMATE

The climate of the region can be divided into two distinct seasons – a dry season between April and November and a shorter wet season between the months of November to late March (Simmons *et al.* 1991). This area is the wettest place in Namibia with an average rainfall of 740 mm per year, which on occasion exceeds 1,000 mm per year (Simmons *et al.* 1991). The mean monthly average temperature is 30° C.

4.5 GEOLOGY

The Eastern Caprivi is underlain by Kalahari sediments, mostly unconsolidated sands, clays, duricrusts (calcrete, silcrete) and is part of the larger regional Kalahari basin. Underlying the Kalahari sediments are the Mesozoic age Karoo sedimentary rocks that suggest that sedimentation in this basin has been going on for a long period of time.

Underlying the East Caprivi along a northeast trend are Katima-Sibinda, Linyanti-Gomare and Chobe faults. Tectonic activity has continued along these faults to the present day and has been responsible for the formation of recent geomorphological features. In Botswana, related faults such as the Thamalakane Fault (along the Thamalakane River) have blocked the Okavango River course forming the inland Okavango Delta. The Kavango, Kwando/Linyanti and upper Zambezi river courses follow similar fault lines. Most of the Eastern Caprivi is underlain by the relatively low-lying, the northeast trending Caprivi Graben (a fault bounded sedimentary basin).

The northeast trending fault systems that led to the deposition of the Kalahari sediments in the northern Botswana and Caprivi are related to the processes that separated Africa from the rest of Gondwanaland. The tectonic activity caused the development of the east African Rift System and is thought to have led to formation of the continental Kalahari sedimentation.

Karoo basalts form the base of the Kalahari are exposed at the rapids near Katima Mulilo, near Ngoma and on Impalila Island. Below the surface of the sand, calcrete is present in a few areas, such as around Choi, Sachona and between Masida and Sabinda and on the eastern side of the Western Caprivi. Rock salt has also been recorded near Imukusi east of Katima Mulilo. The uppermost layer of the Kalahari succession consists of sand and clayey sand. Lenses of clay are to be found below the sand. The amount of clay in the sand reduces as one travels westwards. The sand is up to 107m thick on the east bank of the Kwando River but thins out to 50m towards the east. The clays have formed an aquitard, 12 to 26m thick, which separates the saline groundwater found in the upper sands of the Eastern Caprivi from a fresh water aquifer in the deeper sands. The aquifer appears to be fed from the Kwando River but becomes more saline towards the Linyanti River.

5 PUBLIC PARTICIPATION

Public participation comprises an important step in the EIA process in identifying probable concerns and issues prior to the inception of the proposed development that may affect the natural, social and economic environment. Public consultation as part of the Environmental Impact Assessment process is a critical component of achieving transparent and public domain decision-making.

The public participation process was done in accordance with the requirements stipulated by the Environmental Management Act, Act 7 of 2007 (Part VII) and Draft regulations (Part III, section 3.4).

5.1 DESCRIPTION OF THE PUBLIC CONSULTATION/PARTICIPATION PROCESS

A comprehensive Public Consultation Process was carried out in order that the concerns of Interested and Affected Parties (IA&P), authorities, and the wider public could be established: The main purpose of the public consultation was to: -

- Introduce and present the project concept;
- Explain the role of an IA&P and the Environmental Assessment procedure;
- Record raised public issues, questions and concerns; and
- Provide opportunities for public input and gathering of local knowledge.

Once the concerns of IA&Ps had been established, the study aimed to address these concerns in the Environmental Assessment process, together with issues raised by the environmental consultant.

The following activities were carried out as part of the public consultation process: -

- 1) The first public meeting was advertised in New Era on the 16th March 2011 and in The Caprivi Vision on the 18th March 2011. The second public meeting, presenting the EIA feedback, was published in The Namibian and in New Era on the 7th April 2011. These advertisements invited people to attend the public meetings, to register as an IA&P and to attend the 2nd public feedback EIA meeting. A copy of these advertisements can be found in Appendix A.
- 2) Invitations to the first and second public meetings were sent via fax and electronic notification (email) where possible to various authorities (e.g. Regional Councillors) within the local area (i.e. Kongola and Katima Mulilo) and various Tourism Operators in the Caprivi region. Please refer to Appendix A for the list of authorities and operators notified of these public meetings.
- 3) All those who contacted Namib Hydrosearch cc, or who attended meetings, were registered as IA&Ps so that they could be kept informed about the progress of the project and any further documentation published on the EIA findings.
- 4) Background Information Document (BID) was distributed together with the Public meeting notification (Appendix A).

- 5) Public meetings were held to introduce the project concept, and to hear and record public concerns. Mr Simone Micheletti, the project investor, presented the lodge concept with maps to the community (Figure 12). Contact details were also provided for written responses. The public meetings took place at Sangwali Village, outside the Conservancy Office (Figure 12). IA&Ps were invited to submit comments by the 31st March 2011.
- 6) The Environmental Impact Assessment (EIA) presentations delivered at the 1st and 2nd Public Meeting can be found in Appendix A. Mr Hans Matiti Fwelimbi (member of Samudono village community) provided the translation of the public meeting in Sayeie (dominant local language), in order to communicate the project concept and EIA procedures to members of the public community.
- 7) Minutes of the public meeting were circulated to those who attended, and to any other parties who registered as IA&Ps. However, due to the absence of electronic mail and communication with the Sangwali community, the minutes from the first public meeting were delivered at the 2nd public meeting on the 11th April 2011. A summary of the issues and concerns received at the public meetings is contained in Table 2. The community and IA&Ps were invited to send written submissions. A community representative from the Enterprise Office in Sangwali, Mr Romeo Lizumo was elected during the meeting and the community were advised that they could deliver and/or notify Mr Lizumo of any concerns relating to the project. All comments and concerns were collected in Sangwali on the 11th April 2011. The minutes and attendance lists of these meetings are shown in Appendix A.
- 8) The *Draft* EIA and EMP report and Appendices were made available for comment (delivered to Sangwali Village Enterprise Office) to all key stakeholders and IA&Ps on the 18th April 2011.
- 9) The following parties were consulted to gather feedback on potential environmental impacts:
 - Mr Simon Mayes – MET: Strengthening the Protected Areas Network (SPAN): Community Based Natural Resource Management (CBNRM) and Protected Areas Management - for contact persons, for information related to the customary and traditional approach to the Sangwali Community members and other villages in the area and for general project area information.
 - Mr Colin Britz – Caprivi Hunting Safaris cc – Trophy Hunting Lodge Leaseholder: - regarding the potential implementation of mitigation measures to avoid any potential and/or expected conflict between the trophy hunting operation and the tourism operator.

- Richard Diggel – World Wildlife Fund (WWF) CBNRM Specialist: regarding community relations within the Wuparo Conservancy.
- Induna Sangwali – Permission was requested to interact with the Sangwali community members and conduct a questionnaire regarding the impact of tourism on the community. Feedback was presented to Induna Sangwali after the interviews were conducted.

Supporting documents on the Public Participation Process are contained in the Appendix A as follows: -

- Public meeting advertisements in the press (¹New Era, ²The Caprivi Vision, ³Namibian, ⁴New Era)
- List of Stakeholders & IA&Ps notified of the EIA and project inception
- Background Information Document (BID) – Project Concept
- Presentations at public meeting's (1st and 2nd)
- Minutes and attendance lists (I&APs) for Public Meetings

Both public meetings provided relevant insight into the public perception of the intended development. The results from the Public Consultation process are contained in the following section.

5.2 OVERVIEW OF THE PUBLIC CONSULTATION PROCESS

In this section, the outcomes of the PP are presented. This section serves as a record of issues and concerns that were raised by I&APs based on findings from the 1st and 2nd Public Meeting's. It must be emphasized that the issues and concerns raise are presented as the participants raised them. Further, these issues and concerns, as per the public meetings, are described in more detail in the public minutes located in Appendix A.

The purpose of presenting the issues raised by participants in this section is to: -

- Ensure transparency regarding the issues that have been expressed, and
- Provide a list of all issues that need to be considered during the EIA impact analysis.

Attendance figures were high for the Public Meetings held in Sangwali Village. In total 98 people attended the first public meeting and 60 at the second public EIA feedback meeting (Appendix A).



Figure 12: Attendance of Interested and Affected Parties at the first Public Meeting that took place in Sangwali Village on the 24th March 2011.

A summary of the issues/concerns and comments raised by the I&APs during the EIA phase, during the public meetings, as well as the measures taken to address these issues during the EA process is provided in Table 2. Issues that were raised by the consultant are also included in the following summary of issues and concerns from the 1st and 2nd public meetings.



Figure 13: Second Public Meeting

Table 2: Results of the Public Participation Process: Issues & Concerns raised by the Sangwali Community and I&APs (1st and 2nd Public Meetings).

Issues & concerns	Response
<p>Community impacts: There was a query on whether this tourism lodge initiative was linked to the hunting conservancy. The concern rests on the fact that there may be conflict between the hunting operation and the tourism lodge and that this may have an impact on the community members that obtain benefits from the hunting operation and associated community arrangements.</p>	<p>It was declared that this issue had been previously discussed in other meetings and has been resolved. The hunting conservancy and the tourism areas have been zoned. The parties responsible for the hunting area and the proposed lodge development have signed an agreement.</p>
<p>Community benefits: How will the community members benefit from the lodge? If the lodge investors move out of the area, will they leave the lodge and the entire built infrastructure as it is for the community? Is the lodge development a partnership with the community or are community members involved or is it a sole mandate? Is there a development plan?</p>	<p>This was addressed in the community AGM that was held after the public consultation meeting. However, this issue should be addressed in detail between the lodge proponent and the community.</p>
<p>Community - harvesting of natural resources: Will the community be able to gain access to the natural resources (e.g. thatching grass) in the locality of the proposed lodge site?</p>	<p>The community did not question this during the conduction of the social – cultural study interviews.</p>
<p>Lodge name: There was a concern relating to the current name of the lodge, 'Nkasa Lupala Tented Lodge', which in the dominant local language, Sayeyi, is correctly spelt 'Rupara' and not Lupala.</p>	<p>An IRDNC member stated the issue with the naming of the lodge has been addressed to the government. The IRDNC has submitted a written request on behalf of the community for the correction of the name. It was recommended that this issue remain with the IRDNC, which will be dealt with in time. Furthermore, it was stated that the lodge was not the right platform to change the name of the lodge or the park area (in reference to Nkasa Lupala National Park). The name change is a concern for the whole tribal Mayeyi community and not just for Sangwali Village.</p>
<p>Infrastructure and services: A concern was raised regarding the type of material and the quality of the tents that will be placed in the camp. The concern rests on whether the tents will last a long time.</p>	<p>Lodge investor: The land lease hold which is being applied for is for a period of 10 years, and after which we would like to extend it for a further 10 years. On this basis we would purchase quality material to ensure that our investment in the lodge lasts for at least a 10 year period. The extension of the lease is based on a good relationship between the lodge investors and the community. The IRDNC contains</p>

Issues & concerns	Response
	all the details.
<p>What type of sewage system will the lodge use?</p>	<p>The sewage system is based on a "Ballam waterslot"; there will be one septic tank for every two toilets and the soak aways will be the recipient of the purified effluent. SM: the water will be purified, prior to it being released into or nearby the water channels. The waste disposal system will not pollute the nearby water. The EMP report that will be written for the lodge development purposefully presents mitigation (preventative) measure to reduce the possible negative impacts of the lodge.</p>
<p>EA process: There was a concern that the amending the name of the lodge may delay the EA process.</p>	<p>The renaming of Nkasa Lupala National Park should not affect the EA process, the reports will be presented to DEA for a 'Record of Decision' for the potential issuing of an environmental clearance certificate based on the nature of the impacts and the studies conducted as part of the EA study.</p>
<p>Hunting conservancy: There is a concern that the positioning of the tented lodge is not in an appropriate position to operate a tourism lodge. This is due to the fact that there is a hunting conservancy within 2 km of the proposed camp site on the border of the park boundary. In the past gun-shots have been heard in the early hours of the morning. A tour operator in the area has been chased by a wounded buffalo which had been injured by hunters operating in the conservancy.</p>	<p>This issue has been identified as a significant impact on the proposed lodge development.</p>
<p>Community capabilities: There is a concern that the Traditional Authority and the conservancy are weak and unable to solve problems such as theft and poaching. Further, there is concern that any one that has had dealing with the Wuparo Conservancy or the Sangwali Traditional Authority will not be treated fairly. In addition, the investors should note that there could be other problems that could cost them more capital on top of their original investment. However, the idea of the camp is good and a quality tented camp run as a private concern is viable.</p>	<p>It has been identified that there is a need to develop the park infrastructure. This concern forms part of the recommendations of the EIA report. Therefore, It has been recommended to MET that new bridges are built and that a new road network be planned for the future.</p>
<p>Nkasa Lupala National Park facilities (MET): A concern was raised regarding the absence of tourist camping facilities in the park. The tourists are ruining the park, due to the fact that they camp anywhere they like. Further, the road network in the park is poor.</p>	<p>The lodge proponent intends to assess the roads and make recommendations to the Caprivi Parks head quarters (MET) to upgrade the current road network. In addition, there is a desire to provide new maps of the park area.</p>

Issues & concerns	Response
<p>Wuparo Community Camp Sites: There are a large number of tourists that are entering the park and who do not use the available community camp sites. The Wuparo community is losing out on income.</p>	<p>The lodge proponent intends to market the community camp sites on the lodge website, therefore, these camp sites will be marketed at the same time as the lodge is marketed on the world wide web.</p>
<p>Reference to the Sangwali community: The identification of the use of the Sangwali as the main community in the Wuparo Conservancy. It was suggested that in reference to the affected communities and the proposed development, that the Wuparo Conservancy community be used. This is due to the fact that the development will not only affect Sangwali community members but all the communities that are within the Wuparo Conservancy (Samudono and Samalabi).</p>	<p>The recommendation was acknowledged.</p>
<p>Hunting Operation: Due to the fact that the Wuparo community is in control and decides upon the hunting prices (i.e. cost of the hunted animals), which are increased every year, the hunting operation is losing clients. There is a concern that the hunting operator may have to look for another hunting locality.</p>	<p>This issue must be addressed directly to the Wuparo Community Officers.</p>

6 SOCIO – CULTURAL BASELINE

6.1 INTRODUCTION

The lodge site falls within the greater Bwabwata-Mudumu-Nkasa Lupala Complex (BMM) and is therefore one of the 42 conservancies operational in Namibia, and is located alongside protected land and forms a corridor between protected areas in the country (Turpie, *et al.* 2009). The study area is located within the Mudumu South Complex (MSC) (GEF, 2006), which is within the Linyanti Constituency and includes both Mudumu and Nkasa Lupala National Parks and four adjacent conservancies, namely Balyerwa, Wuparo and Dzoti and Shikhaku communal areas (Figure 1). The boundary of Nkasa Lupala National Park is less than a kilometre from the proposed lodge site, and thus, places the proposed lodge site in the centre of collaborative arrangements involving the Wuparo Conservancy, conservation – community base natural resource management focused groups (e.g. IRDNC and WWF, and other NGOs), international funding corporations, such as Millennium Challenge Corporation (MCC) and SGP (Small Grant's Programme) as well as with MET managing the surrounding National parks.

After independence in 1990, MET changed the legislation to incorporate the rights of communities to natural wildlife resources (Massyn *et al.* 2009; de Wet & Gaedke, 2009) and to form communal conservancies. In 1999 the Wuparo Conservancy was formulated. The Wuparo conservancy designation is referred to as 'freehold'. The operation of a freehold conservancy and/or management unit is based on the sustainable wildlife utilization through collaborative arrangements (MET, 2010) and consists of private landowners and incorporates wildlife tourism (i.e. lodges and camps sites), trophy/sport hunting, meat production and the sale of live game and meat (MET, 2010; Jones *et al.* 2009). In this way communal conservancies are benefitting from trophy hunting, own - use meat harvesting, shoot and sale, premium hunting and live game sales, as well as tourism outfitters (Weaver *et al.* 2009). Thus, this complex combination of the aforementioned wildlife utilization methods together forms a collaborative network between communal, state protected areas and private owners to form the MSC as an integrated protected area (MET, 2010). Overall wildlife numbers have increased in communal area conservancies, and eco-tourism ventures and trophy hunting is a valuable source of income for conservancies in the Caprivi (WWF, 2006).

In areas where Conservancies exist, such as in Caprivi, community game guards look after the resources and report offenders to their communities and to MET (Bethune & Ruppel, 2007).

6.2 HISTORICAL OCCUPATION OF THE AREA

The Caprivi region is home to approximately 80 000 people, of which 2 128 reside in Sangwali Village (MET, 2001). The Wuparo Conservancy consists of three villages, namely the central Sangwali village, and the smaller Samuduno and Samalabi villages (H.Matiti pers comms). The dominant ethnic group resident in the village belong to the Mayeyi tribe that speak Sayeyi (H.Matiti pers comms). Further to this, there is a partial amount of Lozi spoken in the village, a language that is remnant from the historical connections with ethnic groups

of Zambia. The Mayeyi have been under the jurisdiction of the Mafwe Traditional Authority for the last 120 years, the largest ethnic group in the Caprivi region (Bethune & Ruppel, 2007; Massyn *et al.* 2009). Ruling of the area by another Traditional Authority, other than Mayeyi for this period of time resulted in the emergence of political tension. An example of the past political tension is evident in the present discrepancy regarding the name of Nkasa Lupala National Park, of which Nkasa Lupala is a Mafwe word, which the Mayeyi are addressing with MET for the correct name change to 'Nkasa Rupara National Park'. Accidentally, the name 'Rupara' was spelt Lupala within the Ministry, and the new name for the park subsequently went through as Nkasa Lupala National Park.

The region's conservancy system has been integrated with the traditional tribal ruling system (de Wet & Gaedke, 2009). Within this system, the Indunas (elders of the community) are responsible for the distribution of the community land, and law-and-order of the village. On this basis any decisions taken by the chief are binding and if there is any discrepancy or disrespect involving any of the traditional rules and regulations in Sangwali Village, the implementation of government policies or external input typically becomes a challenging task (de Wet & Gaedke, 2009), provided that the traditional customary approach is not respected.



Photograph: Grant Atkinson

Figure 14: Traditional dwelling of the Mayeyi in the Caprivi Strip.

6.3 EXISTING USES OF LAND USES NATURAL RESOURCES

People in Sangwali and in the greater Caprivi region's economic and livelihood activities are based on subsistence agriculture and stock farming cattle (Mendelsohn & Roberts, 1997). In the past cattle numbers increased rapidly due to the reduction of diseases and reduced flooding events in the area, which produced extensive pastures for grazing. Predominant crops in the area are maize, *Mahungu* (pearl millet) and sorghum. Factors affecting crop farming are drought, intensive flooding and outbreaks of pests (Mendelsohn & Roberts, 1997). Indigenous fruiting trees such as the Mangetti tree and bulbs from the water lilies, and palm fronds are used less frequently but still form an important part of craft production and utensil making trade. Robust trees, such as *mopane* are sold commercially as construction poles. The Mayeyi are largely dependent on natural resources such as thatching grass, reeds and wood for constructing their homes. Relatively recently an additional source of

income has been acquired through the contract between the trophy hunting operation and the community, which includes the provision of meat in the Sangwali community. In 1969 the area around Sangwali was designated as a high risk area for the spread of tsetse fly and was demarcated as an area for spraying in the eastern Caprivi (Veterinary Services Report, 1969), however, the main threat, however, came from the adjacent untreated Botswana Border.

6.4 CURRENT INFRASTRUCTURE

The Wuparo Conservancy has a Conservancy Office (**Figure 15**) which functions as the central meeting place for conservancy meetings within the Sangwali village. The conservancy is equipped with a primary and secondary school (Figure 17, Figure 18) centred in Sangwali village and a primary school situated in the nearby village of Samudono. A medical health care centre (**Figure 16**) offering both medical assistance and social care to the community staffed by two nurses and a visiting doctor who routinely visits every two months, which. The village is equipped with a police outpost, which at present is a tent. Currently, there is no transport infrastructure (e.g. bus or taxi services) available from the village to neighbouring towns, such as Linyanti Village, Kongola or Katima Mulilo. In the past, an independent fire company was based in the village to assist with emergency fires. The company has subsequently left the village and presently, the Sangwali community has no assistance or means to deal with bush fires that are typically prevalent in the dry season in the region. In years of high floods, however, the presence of the water channels in close proximity to the village may assist and form partial protection from local fires. Sangwali village supports three churches, namely the Adventist Church, Dutch Reformed Church and a Catholic Church.



Figure 15: Wuparo Conservancy Office



Figure 16: Sangwali Health Care Centre



Figure 17: Sangwali Primary School



Figure 18: Sangwali Secondary School



Figure 19: Rupara Community Camp Site Signage

6.5 TROPHY HUNTING OPERATION

Caprivi Hunting Safaris cc is the hunting operator within the Wuparo Conservancy and has been active within the area for a period of three years (C, Britz pers comm). A contract was drawn up and signed between the hunting operator, Gafil cc, the Wuparo Conservancy and the Conservancy Office Headman, prior to the inauguration of the proposed lodge development. Hunting is predominantly carried out in the southern and western sections in approximately 2000 – 3000 ha of the Wuparo Conservancy. This area is characterised predominantly by swamps and access by vehicle is challenging. Typically hunting occurs and is favourable between the months of August and September, the driest parts of the year due to the visibility through the vegetation and the lack of surface water. According to the hunting operator the community benefits include a quota of 10 buffalos per season. A total of six members of the Wuparo Conservancy are permanently employed, and in the operating period of Caprivi Hunting Safaris cc there has been no turnover of staff.

6.6 HUMAN –WILDLIFE CONFLICT ZONES

Particularly in the Caprivi region, wildlife - human conflict has caused a negative and hostile approach towards biodiversity conservation (MET, 2010). However, the change in wildlife utilization and the associated benefits to communities has largely altered community perceptions towards the wildlife in communal and protected areas (Weaver, *et al.* 2009). The main causes of human-wildlife conflict in the community are elephants who raid the crops at night, and older mature buffalo bulls within the riparian habitat around in the village. Historically, the Sangwali community experienced conflict with predators, particularly lion preying on the livestock. However, this has not occurred for the past 5 years (Hans Matiti Fwelimba, pers comm).



Photograph: Grant Atkinson

Figure 20: Livestock on the edges of the wetland areas, Caprivi Strip.

6.7 METHODOLOGY

The assessment method used to obtain data on the community perceptions of tourism were based on face to face individual interviews conducted with members of the Sangwali community. Interviews were conducted on the 23rd March 2011. Sampling was conducted by means of a random stratified sampling technique in order to obtain the overall perceptions of the Sangwali community (i.e. interviewees were randomly selected in the community). Observations were made during the interviews. At the public meeting as part of the public consultation process, the overall attitude of the community towards tourism development was observed. Supplementary data obtained by conducting a literature survey was to acquire information on the history, culture, and past and present political conditions of the Sangwali community.

The objective of the interviews was to establish the community's perceptions of tourism and use of nature resources in the Sangwali area. Care was taken not to discuss the proposed development so as not to obtain answers that would inflict a sampling bias on the development. Thus, no questions were asked that were directly related to the development.

The questionnaire covered questions based on the following topics: 1) Existing tourism presence in the Sangwali Community; 2) Existing opinions on tourists; 3) Infrastructure and public services; 4) Use of natural resources in the area by the community; and 5) Stakeholder recommendations.

Community members were asked to supply information on any future plans for tourism development in the Sangwali area. They were also asked what impacts any tourism development would have on the community area. Finally, they were asked if they felt that a decline in natural resources in the area would have an impact on tourism and their benefits as community members in the village.

The questionnaire used for this study and the interviewee's names can be located in Appendix B.

6.8 RESULTS

In total 9 interviews were conducted with a variety of community members and 3 other interviews were conducted with people who have been involved in Community Based Natural Resource Management (CBNRM) and conservancy arrangements in the Sangwali area (Appendix B). For data to be statistically comparable, the number of samples/observations is required to exceed 30 (Fowler, *et al.* 2003). Each interview took approximately between 30 to 40 minutes to complete, and as such, time was a limiting factor during the socio-cultural assessment. Although, the sample size for this socio-cultural assessment is small (9), the respondents answers were summarised and a conclusion drawn based on the overall perception of the community sampled. In addition, the conclusion is based on observations in the community during the week's field work period.

With the use of the key informant interviews conducted, the following results were obtained for the study. The results were analysed by reviewing the respondent's answers in each section and a summary is provided in

Table 3 below.

Table 3: Summary of interviewee's answers to the Questionnaire survey in Sangwali Village.

EXISTING TOURISM PRESENCE IN THE SANGWALI AREA.	
No:	Question:
1.	Does tourism exist in your community?
	<ul style="list-style-type: none"> All interviewee's agreed that tourism existed in the community, although they noticed that the number of tourists in the village is increasing.
2.	Does tourism benefit the social relationships in the area? Why?
	<ul style="list-style-type: none"> 100% of the interviewee's answered positively. Benefits associated with positive social relationships include the following: employment; revenue from park, camp sites and lodge fees; protection of natural resources; eventual employment of children in the village.
	<ul style="list-style-type: none"> 1 interviewee connected positive social relationships with the trophy hunting lodge in the conservancy.
3.	Do you think that tourism benefits the environment in Sangwali Village? Why?

	<ul style="list-style-type: none"> • 100% answered that tourism benefits the environment.
	<ul style="list-style-type: none"> • Litter – the village and the protected areas are kept clean
	<ul style="list-style-type: none"> • Strongly linked to education
	<ul style="list-style-type: none"> • Protection of natural resources
	<ul style="list-style-type: none"> • Strongly linked to sustainable resources
4.	Do you think that tourism benefits the economy of the area? Why?
	<ul style="list-style-type: none"> • 98% answered that tourism benefits the economy.
	<ul style="list-style-type: none"> • Cultural richness
	<ul style="list-style-type: none"> • Production of handmade crafts
	<ul style="list-style-type: none"> • No, as the area is not marketed for tourism and therefore tourists do not know about the area.
5.	Does tourism benefit you personally and/or you're household? Why?
	<ul style="list-style-type: none"> • 100% answered that tourism benefits them personally.
	<ul style="list-style-type: none"> • Learn about different cultures and countries
	<ul style="list-style-type: none"> • Salaries and jobs, and the provision of food
	<ul style="list-style-type: none"> • With exception of the trophy hunting operation providing meat and money – we do not obtain personal benefits from tourism.
EXSITING OPINION ON TOURISTS	
1.	Approximately what percentage of your tourists is local, regional or internationally?
	<ul style="list-style-type: none"> • SADC (60%) and international (40%) and very few local Namibians
2.	Have the number of tourists in the last year increased in the area?
	<ul style="list-style-type: none"> • 100 % of the interviewee's answered positively.
	<ul style="list-style-type: none"> • Tourists decrease in the wet season and increase in the dry season.
3.	Do you enjoy having tourists in your area? Why?
	<ul style="list-style-type: none"> • Enjoy the people
	<ul style="list-style-type: none"> • Visitors support of the craft centre
	<ul style="list-style-type: none"> • Family support through income
	<ul style="list-style-type: none"> • Communication about the park and its wildlife
	<ul style="list-style-type: none"> • Cultural involvement and sharing of ideas and knowledge
	<ul style="list-style-type: none"> • Overall Income
4.	What are the positive impacts of tourism in your community?
	<ul style="list-style-type: none"> • Wildlife protection
	<ul style="list-style-type: none"> • Earn income; creation of employment and family support
	<ul style="list-style-type: none"> • Realize how important wildlife is to the area and the attraction it holds for tourists; illegal poaching causes a loss of animals in the area.
	<ul style="list-style-type: none"> • Tourism creates and awareness of protection of wildlife in the area.
	<ul style="list-style-type: none"> • Tourism – is a presence in the area and it means that there will be more people to search and be on the lookout for illegal poachers in the area.
	<ul style="list-style-type: none"> • Money and meat
	<ul style="list-style-type: none"> • Education and guidance on burning vegetation in the area.
5.	Currently, does your community experience any negative aspects associated with tourism? If so, please explain:
	<ul style="list-style-type: none"> • 100% of the interviewee's stated no.
6.	How do you feel about tourists taking pictures in you village?
	<ul style="list-style-type: none"> • No problem, however, usually there is no reward.
	<ul style="list-style-type: none"> • Positive and negative benefits – if tourists ask permission first and thereafter return the pictures back to the people, but this does not usually happen.
	<ul style="list-style-type: none"> • It is positive as visitors are interested in our houses and yards and other corners of

	the world.
	<ul style="list-style-type: none"> The negative part of tourists taking pictures is that they do not ask and – a person may be in an awkward position and pictures are taken and then they drive off.
	<ul style="list-style-type: none"> There is no problem, but the people of the village are much happier if tourists ask permission first.
7.	Are there any “rules” or cultural customs that you feel tourists should obey in Sangwali? What are they?
	<ul style="list-style-type: none"> Respect of local property; acknowledgement; and personal greetings are very important.
	<ul style="list-style-type: none"> Prior knowledge of the culture of the people living in the community.
	<ul style="list-style-type: none"> Friendliness
	<ul style="list-style-type: none"> Within the conservancy area people are free to move around, however, tourists need to be informed.
	<ul style="list-style-type: none"> It is important to develop a feeling of trust between the community members and tourists, so that when tourists do visit that they feel at home in our community.
	<ul style="list-style-type: none"> Induna Sangwali requested that when visitors pass by they are welcome to visit and ask questions in order to take precautions in the area in order to gain some insight into the Sangwali village culture and behaviour.
8.	Why are tourists attracted to your area? What are your most unique existing attractions?
	<ul style="list-style-type: none"> Wetland vegetation; different and unique mammals in the area
	<ul style="list-style-type: none"> Traditional experience
	<ul style="list-style-type: none"> Protection of the area by parks
	<ul style="list-style-type: none"> Presence of water and birdlife
	<ul style="list-style-type: none"> To see how people live in a village and to see their houses and yards
	<ul style="list-style-type: none"> Landscape
	<ul style="list-style-type: none"> Partnership conservation area
9.	What are your most unique attractions that have yet to be developed for tourism in the Sangwali area?
	<ul style="list-style-type: none"> Tourism needs to be understood in this area – we need to know what tourists require.
	<ul style="list-style-type: none"> Traditional village and restaurant
	<ul style="list-style-type: none"> Roads need to be developed in order for tourists to visit the area; bridges are required to cross the water and to access other parts of the park.
	<ul style="list-style-type: none"> A high standard lodge in order to attract enough tourists to the area.
	<ul style="list-style-type: none"> Large craft shop
	<ul style="list-style-type: none"> Camp sites, and a lodge - development has benefits for this area.
	<ul style="list-style-type: none"> Poster of all the unique attributes of the area.
INFRASTRUCTURE AND PUBLIC SERVICES COMMENTS	
1.	What services are needed in the community to make it more comfortable for residents and visitors?
	<ul style="list-style-type: none"> Shopping centre
	<ul style="list-style-type: none"> Fixed building for the police station staff as they are currently living in tents in the village
	<ul style="list-style-type: none"> New roads in the park to access other areas.
	<ul style="list-style-type: none"> Traditional villages and craft markets for visitors
	<ul style="list-style-type: none"> Protection from HIV and a centre for orphans in the community
	<ul style="list-style-type: none"> Filling station, which help the community as well as tourists wanting to fill up with fuel for extra days in the park
	<ul style="list-style-type: none"> Security
	<ul style="list-style-type: none"> Reliable transport system; and a regular bus to Katima Mulilo
	<ul style="list-style-type: none"> Lodge
	<ul style="list-style-type: none"> House, ablutions and clean water

	<ul style="list-style-type: none"> • A fish pond for tourists to catch and release fish.
2.	Do you have policemen, fireman and medical emergency specialists in the community?
	<ul style="list-style-type: none"> • Medical health care centre with 2 nurses and a visiting doctor
	<ul style="list-style-type: none"> • The fire company used to assist with fires in the community, but left – so there is no fire protection in the village currently.
	<ul style="list-style-type: none"> • The police outpost is a tent.
3.	Do you think that visitors feel safe walking/travelling alone in the community? If not, why? How could this be improved?
	<ul style="list-style-type: none"> • 100% of the interviewee's stated yes.
	<ul style="list-style-type: none"> • There is no record of crime in the village on tourists.
	<ul style="list-style-type: none"> • Depends on how they are treated and how welcome they are made to feel in the village.
	<ul style="list-style-type: none"> • Village guides would be valuable to visitors.
NATURAL RESOURCES	
1.	Do you think that there is a strong link between tourism and natural resources protection?
	<ul style="list-style-type: none"> • 100% of the interviewee's stated yes.
	<ul style="list-style-type: none"> • Yes, it's about looking after the resources. Without the animals, visitors would not come to this area
	<ul style="list-style-type: none"> • Tourism results in protection
	<ul style="list-style-type: none"> • A relationship with tourists help to protect the wildlife
	<ul style="list-style-type: none"> • Yes, with the trophy hunting lodge. We receive benefits of meat and money. There should be a strong link between the tourism lodge and hunting operation.
	<ul style="list-style-type: none"> • Request: I would like to see the community in action and see the people conducting research.
2.	Are the local natural resources managed at this time of year? If yes, by whom?
	<ul style="list-style-type: none"> • Yes, by the community conservancy office.
	<ul style="list-style-type: none"> • Crops are fenced to protect them from elephants.
	<ul style="list-style-type: none"> • There is fire management, which is a problem as we can no longer burn the grass and we now have a problem with ticks on the stock and this has a negative impact on the community.
	<ul style="list-style-type: none"> • Park wardens; rangers
3.	Is the community involved with the management of resources?
	<ul style="list-style-type: none"> • Community members report any incidents to the Conservancy Officers.
	<ul style="list-style-type: none"> • Community remains informed about the use of resources.
	<ul style="list-style-type: none"> • Workshops and meetings.
	<ul style="list-style-type: none"> • Advised on crop farming.
	<ul style="list-style-type: none"> • If there are elephants near the crops we seed off warning shots and use chilli bombs to chase them away from the crops. We also use drums.
	<ul style="list-style-type: none"> • There is a great need to protect our resources
4.	Do you think that the community should have more or less involvement in the management of these resources?
	<ul style="list-style-type: none"> • People have to work together to make decisions
	<ul style="list-style-type: none"> • Community needs to be involved in the decisions that take place in the village and decisions mean more involvement.
	<ul style="list-style-type: none"> • The community is eager to obtain knowledge and to help in the nearby reserves.
	<ul style="list-style-type: none"> • More due to the benefits that have been received from the communal conservancy partnership.
	<ul style="list-style-type: none"> • More- for knowledge acquisition
5.	How could the community improve the management of the resources?
	<ul style="list-style-type: none"> • Cooperation; respect of resources; meetings; communication; education and awareness.

	<ul style="list-style-type: none"> • Manage the tourists visiting the area as well as monitor the tourists.
	<ul style="list-style-type: none"> • Stop polluting the environment
	<ul style="list-style-type: none"> • Waste management
	<ul style="list-style-type: none"> • Follow the natural resource management rules
	<ul style="list-style-type: none"> • Employ rangers for patrols, so that no illegal poaching takes place and to prevent illegal activities going on in the village.
6.	<p>Does the community benefit from the protecting of these resources?</p> <ul style="list-style-type: none"> - If so, how do they benefit? Do they recognize these benefits? - If not, how could they better understand these benefits?
	<ul style="list-style-type: none"> • Yes, sustains the resources for the future.
	<ul style="list-style-type: none"> • Money; fish and food
	<ul style="list-style-type: none"> • Direct benefits associated with the conservancy. Thus hunting is managed with quotas for each zone in the conservancy e.g. meat
	<ul style="list-style-type: none"> • Poles, thatching grass; reeds – cut and sell.
7.	<p>Can you describe any benefits that you are personally receiving because these resources are protected?</p>
	<ul style="list-style-type: none"> • Meat; money; job creation; and tourism will assist with the employment in the area.
	<ul style="list-style-type: none"> • Meet interesting people.
	<ul style="list-style-type: none"> • Cutting and selling Mopane trees for others to build houses.
8.	<p>Do local people lose any benefits by protecting these resources?</p>
	<ul style="list-style-type: none"> • People in the village understand that if you do not take care you lose resources, but if you take care you gain resources.
9.	<p>How could tourism improve both your community's benefits and natural resource protection?</p>
	<ul style="list-style-type: none"> • Education of the community – but, with or without tourists we still have to look after the area and resources.
	<ul style="list-style-type: none"> • Increase the protection of the area.
	<ul style="list-style-type: none"> • Marketing of the area, so that more visitors are attracted the area- then the community would receive more benefits.
	<ul style="list-style-type: none"> • More tourists the better.
	<ul style="list-style-type: none"> • Development is seen as positive in the area. People move forward with development and other projects will develop over time
	<ul style="list-style-type: none"> • . Increases awareness of the resources in the area.
	<ul style="list-style-type: none"> • Environmental education is required in the village. If we had a environmental centre the other schools in the Caprivi region could visit as they did in the past with the old centre close to the park boundary. More local would be interested in the environment.
	<ul style="list-style-type: none"> • Tourism increases the community's respect of the environment.
STAKEHOLDER RECOMMENDATIONS	
1.	<p>What are your future suggestions for future tourism development in the community? What investments or improvements are of top priority?</p>
	<ul style="list-style-type: none"> • Lodges and camp sites
	<ul style="list-style-type: none"> • Large craft centre
	<ul style="list-style-type: none"> • Walking safaris; boats and cultural village
	<ul style="list-style-type: none"> • New roads in the park, including the building of bridges
	<ul style="list-style-type: none"> • Transport to and from the village
	<ul style="list-style-type: none"> • Knowledge training and capacity building
	<ul style="list-style-type: none"> • Wood collected outside of the park for carvings
2.	<p>If other activities, services, or products could be offered in your village or area, where do you think these activities or services should be located?</p>
	<ul style="list-style-type: none"> • Outside the village where it is quiet for visitors.
	<ul style="list-style-type: none"> • Village walks
	<ul style="list-style-type: none"> • Restaurant in the bush (community run)

	<ul style="list-style-type: none"> • Other side of the bridge way from the village
	<ul style="list-style-type: none"> • Craft centre
	<ul style="list-style-type: none"> • Visitors do not want to stay in the village so there must be places outside for them to visit.
3.	Are there other forms of development that you think would benefit the local residents more than sustainable tourism? If so, what are they?
	<ul style="list-style-type: none"> • Other than tourism encourage education and new plans for the village.
	<ul style="list-style-type: none"> • Shopping centre
	<ul style="list-style-type: none"> • Filling station



Figure 21: Sheshe Craft Centre, Sangwali Village



Figure 22: Sheshe Community Craft Shop Staff

6.9 MILLENIUM CHALLENGE ACCOUNT (MCA)

MCA's tourism main objective is to facilitate the tourism industry by increasing household income and to create employment opportunities within Namibia's communal conservancies. This in turn will help to secure a contributing role in the economy for rural communities, by allowing them to diversify Namibia's export focus and stimulate investment. The knowledge and skills base to manage this development is seen as an important component to achieving this. MCA's funding grants aim to support the following priority areas within the Namibian Tourism Sector: a) to overall improve the marketing of Namibia tourism; b) and develop the capacity of communal conservancies to attract investments through ecotourism and c) for communities to gain a greater share of the income and revenue generated by the tourism sector. The overarching tourism objective is to target household incomes within conservancies so as to benefit from the growth of the Namibian Tourist industry, and in doing so conserve natural resources. MCA's approach is based on an assessment of the community's potential to succeed in the tourism sector.



Figure 23: MCA and Sangwali Community Grant Meeting

The MCA identified the Wuparo conservancy as a potential grant recipient on the grounds that the community developed a working relationship with the proposed lodge development investors (Keith Sproule pers comms). On this basis, the Wuparo conservancy has been presented with the opportunity to apply for a funding grant as part of the joint venture with Gafil cc, in order to increase the community's economic returns in association with the tourism development.

6.10 CONCLUSION

Based on the above interviews conducted with members of the community, it is evident that the Sangwali community strongly relates tourism development with the benefits that are provided by the trophy hunting operation in the Wuparo Conservancy. The community members are concerned about illegal poaching, which indicates that it does occur and is conducted by members of the community. It is clear that the community, through experience with tourists visiting Nkasa Lupala National Park and/or the hunting fraternity, has developed a strong link and appreciation for environmental education. Further, through the presence of tourism and /or the hunting operation, the community has developed sound values for the presence of natural resources in the region. Based on the interviews, it is evident that the Sangwali community are interested in participating in tourism development where there will be input into the skills base of the youth that will provide income, and that would involve the advancement of environmental knowledge. Finally, the community will largely benefit from the assistance and diversification of skills, especially in the craft market industry in the village.

7 BIOPHYSICAL BASELINE

7.1 FLORA ASSESSMENT

7.2 TREES AND SHRUBS

It is estimated that the eastern drainage (Simmons & Brown, 2006) area of the Caprivi region has roughly 94 tree and shrub species (WIND, 2011, Curtis & Mannheimer, 2005; Mannheimer & Curtis, 2007). Common trees expected to occur in Dry Nkasa Lupala Grassland covering an extent of 340 km² in tall, coarse grasslands (Figure 1) are restricted to small trees between 3 – 6 m of isolated *Combretum imberbe* and *Terminalia sericea* individuals (Mendelsohn & Roberts, 1997).

7.2.1 METHODOLOGY

Prior, to undertaking the field work, a literature survey was undertaken to establish the species present in order to compile a comprehensive reference list for the study area. This included Curtis & Mannheimer (2005), Mannheimer & Curtis (2009) and Mendelsohn & Roberts (1997). In addition, the National Herbarium of Namibia (NBRI) was consulted for the quarter degree square (1823 BC) species number expected to occur in the study area. This was conducted to in order to compare the expected number of species occurring in the region to the lodge development sites vegetation composition and assemblage. Species (e.g. flowering plants and other notable trees and shrubs) which were observed outside of the transect area, but with within the proposed development area, were also recorded.

Eight vegetation transects were conducted at the proposed site development. The transects were positioned east to west within the proposed development area, with a distance of 50 m between each transect on the east-west section and 100m apart in a north to south direction (Figure 24). Each transect was 100m in length and all the trees and shrubs 10 m on each side of the transect were identified to species level. This was performed to determine the species composition, dominant species assemblages and to detect any endemic, potentially rare and/or endangered species in the study area.

7.2.2 RESULTS

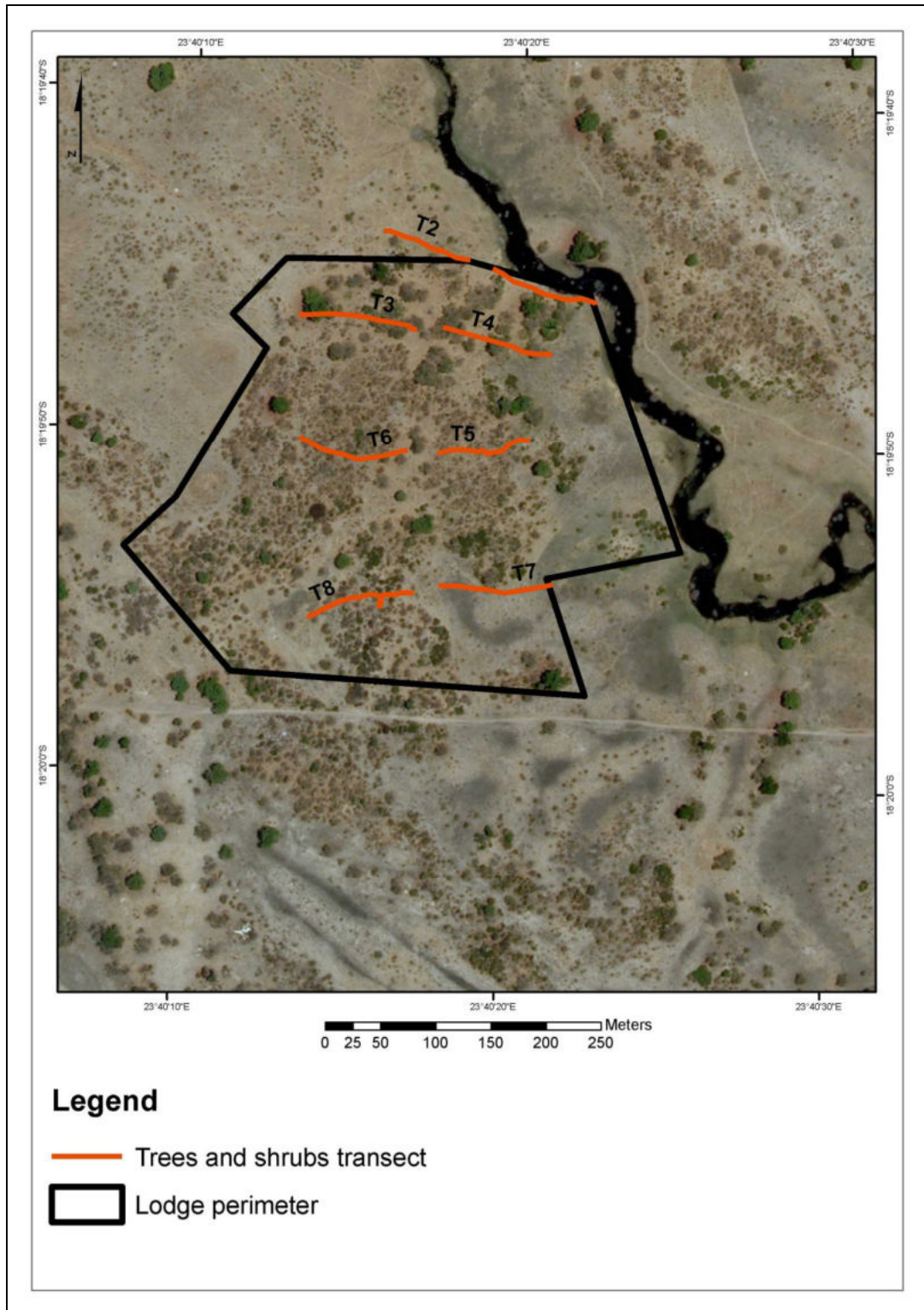


Figure 24: Trees & shrub transects conducted at the proposed development lodge site.

A total of 39 different indigenous trees, shrubs and flowering plants were identified in the proposed development area, including 1 invasive species (*Lantana camara*). Forty two percent (42 %) of trees occur at the site when compared to the total tree number (94) estimated (WIND, 2011) in the Caprivi region. None of the identified species on the site are endemic although 8 trees (*Acacia erioloba*, *Berchemia discolor*, *Burkea africanum*, *Colophospermum mopane*, *Combretum imberbe*, *Philonoptera violacea*, *Sclerocarya birrea* & *Ziziphus mucronata*) are protected under the Forestry Ordinance No. 37 of 1952 and/or Forest Act No. 72 of 1968 (Curtis & Mannheimer, 2005). Eleven flowering and herbaceous plants were identified within the development site area and included the following species *Veronia glabra* var. *Laxa*, *Senecio stricifolius*, *Melanthera scandens*, *Leontis nepetifolia*, *Ipomoea bousiana*, *Bidens schimperi*, *Aerva leucra*, *Asparagus africanus*, *Abutilon angulatum* and *Pechuel loeschea leubnitziae* and *Acrotome inflata*.

Tree vegetation is dominated by *Combretum.imberbe*, (10%), *Philonoptera violacea* (7%), *Albizia versicolor* (4%), *Erythrophleum africanum* (3%), *Diospyros mespiliformis* (3%), *Sclerocarya birrea* (4%). A single *Garcinia livingstonei* tree occurs on the northern perimeter of the lodge site. These larger trees (>6 m) are located predominantly to the north of the proposed development site and should adequately cover the tent units along the edge of the woodland (Figure 26; Transect 1). The mean tree distance was approximately 10 to 15 m.

The shrub layer comprised predominantly of *Diospyros lycoides* (9%), which formed dense stands together with *Gymnosporia senegalensis* (8%). Other shrubs in the area were *Ziziphus mucronata* (7%), *Euclea divinorum* (5%), *Dichrostachys cinera* (5%) and *Flueggea virosa* (3%). *Acacia erioloba* (10%) and *Acacia nigrescens* (6%) occurred as small shrubs (< 2m) (Figure 25). Further to this, *Lantana camara*, an invasive flowering plant was observed between these dense thickets of shrubs in the study area (Figure 27).

Both *G. Senegalensis* and *D. cinera* are recognized as invasive species (Curtis & Mannheimer, 2005). The former is described as invasive, and on occasion as an aggressive species, and the latter as aggressive and invasive in places. In this study area the *G. Senegalensis* is invasive and *D. cinera* occurs in small numbers although does not to be appear invasive in the study area. *D. cinera* under normal tree-savanna conditions will not necessarily displace other species (Curtis & Mannheimer, 2005).

The percentage of occurrence of each tree and shrub species recorded at the lodge site, based on the presence and absence of each species in each of the 8 transects in represented in Figure 29.

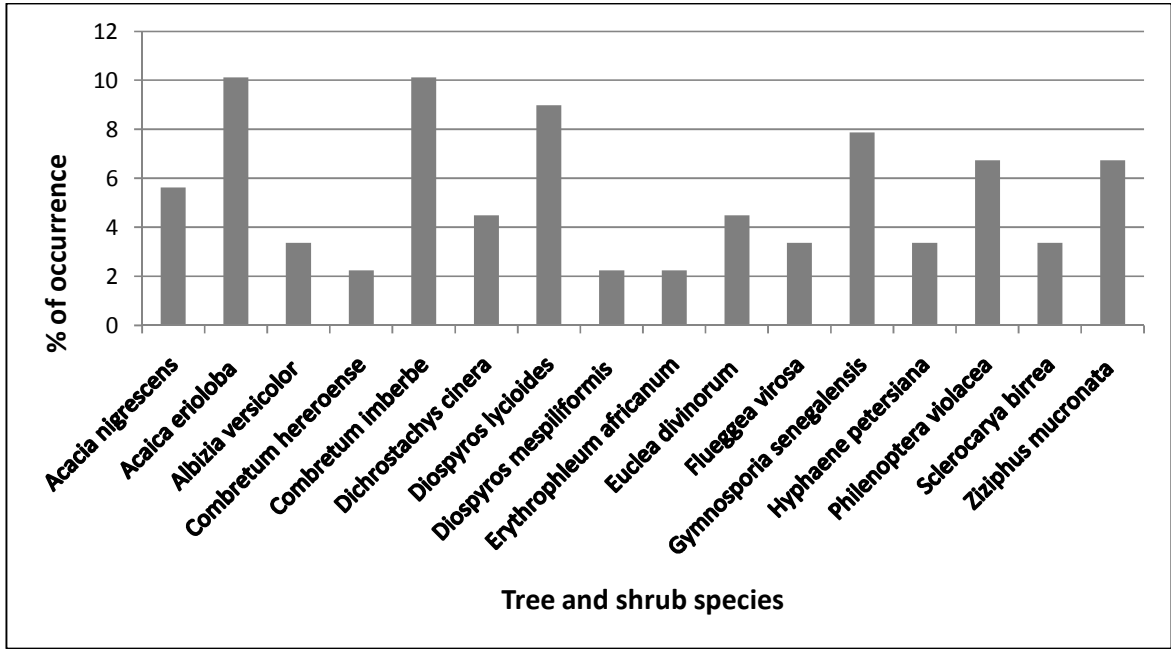
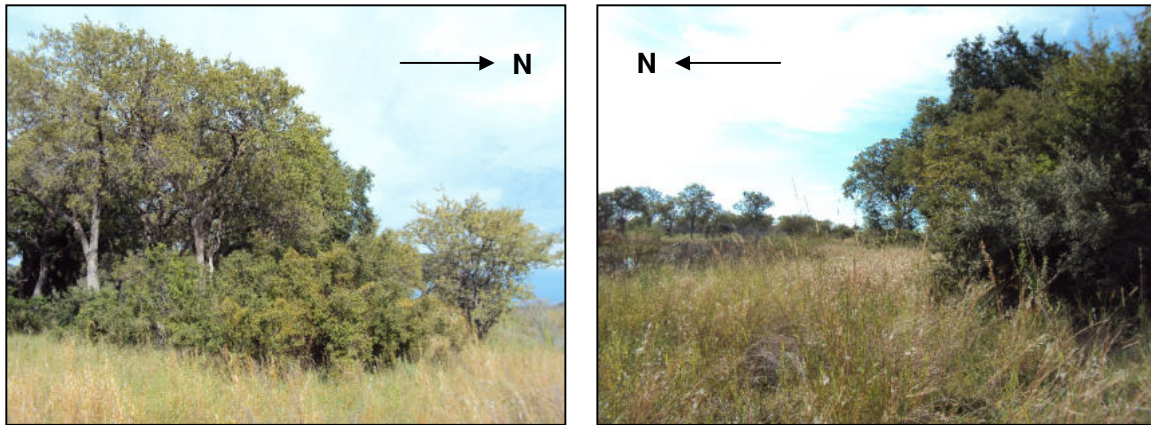
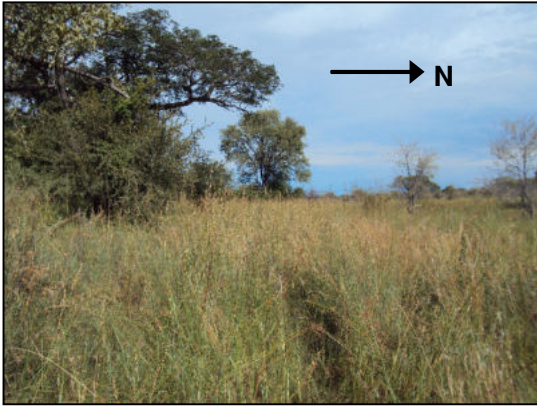


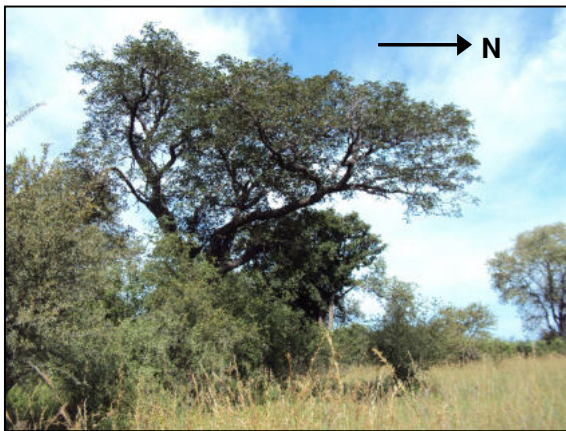
Figure 25: Percentage (%) of occurrence of trees and shrubs at the proposed lodge site.



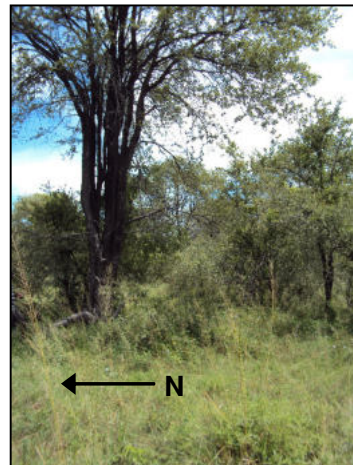
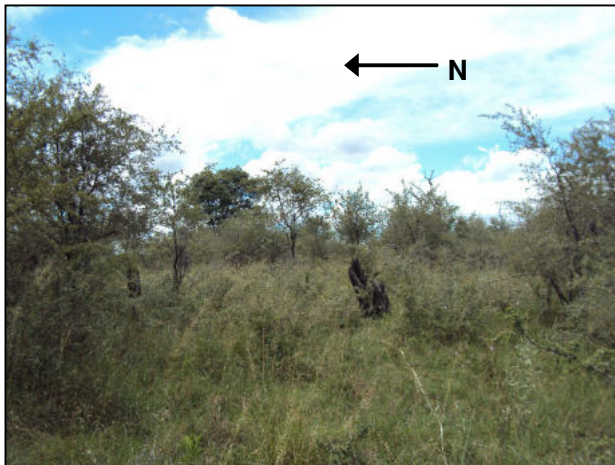
Transect 1



Transect 2

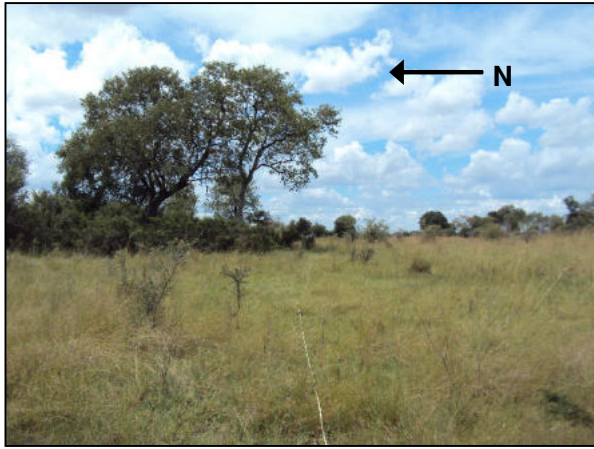


Transect 3

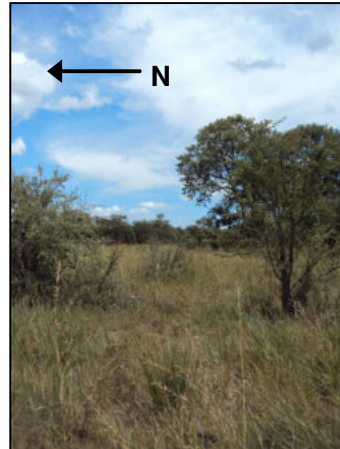


Transect 4

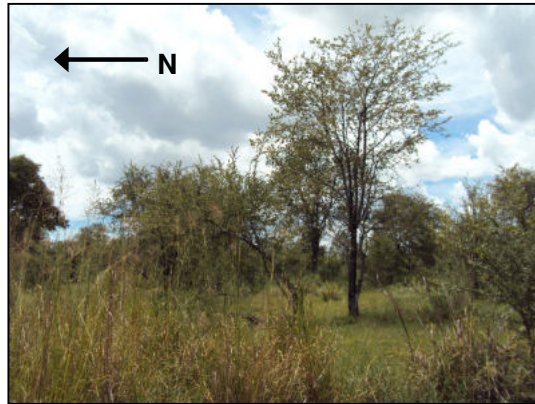
Transect 5



Transect 6



Transect 7



Transect 8

Figure 26: Photographs of the vegetation transects.



Figure 27: Invasive *Lantana camara*

7.3 GRASS DIVERSITY

7.3.1 INTRODUCTION

It is estimated that 111 species of grasses (Muller, 2007; Van Oudsthoorn, 1999) occur in the broader study area, which includes the Caprivi Strip and the eastern Caprivi Region (Appendix C). Common grasses expected to occur in the study area are *Hyparrhenia hirta*, *Cymbopogon excavatus*, *Andropogon schirensis*, *Setaria sphacelata* with extensive patches of *Cynodon dactylon* (Mendelsohn & Roberts, 1997).

7.3.2 METHODOLOGY

The literature survey of grasses included compiling a list of grass species for the area using Muller (2007) and Van Oudtshoorn (1999) and Mendelsohn & Roberts (1997). This list was compared to the species list compiled during data collection in the field.

Eight transects were conducted to determine the species composition and to establish the dominant species in the study area. These were situated so as to include the variation within the proposed development area. For example, transects were positioned in proximity to the proposed placement area of the tent units, main area etc, the open areas in proximity to the water channels and in dense vegetation in order to produce a comprehensive list of the grass species for the study area. Each transect was 30 m long and all the grasses 2 m each side of the transect were identified to species level.

7.3.3 RESULTS

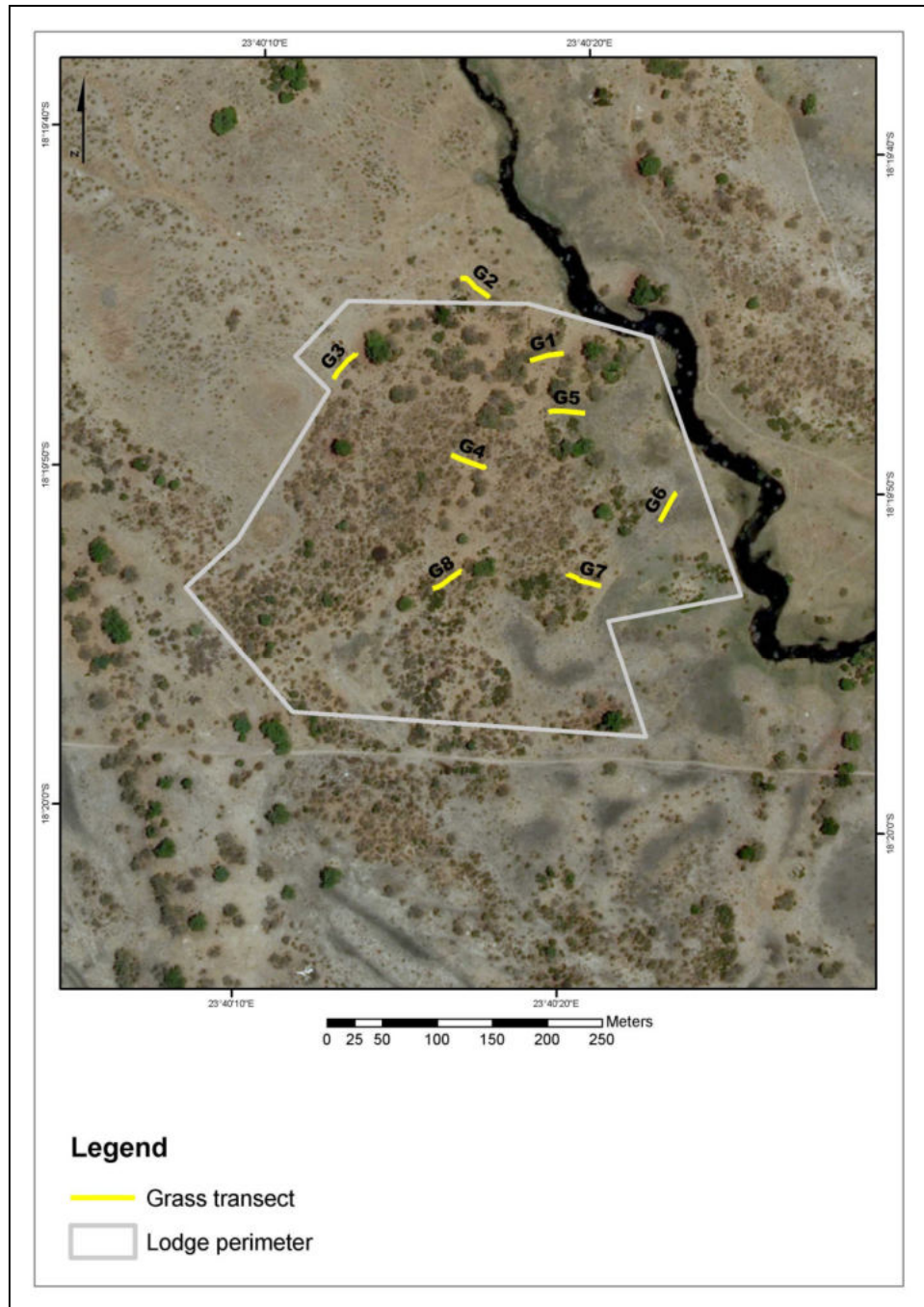


Figure 28: Location of grass transects at the proposed lodge site.

In total 21 species of grass were identified in the study area (Appendix C, Figure 29). The dominant grasses located in the proposed developed area were *Eragrostis superba*, *Digitaria eriantha*, *Sporobolus fimbriatus*, *Cymbopogon excavatus*, *Panicum coloratum* and *Heteropogon contortus* (Figure 29). No species were found in the proposed development areas which are endemic to Namibia. A number of sedge species (*Cyperus* spp.) were observed along water channel on the northern and north eastern perimeter of the development site.

The presence of the three climax species *Cenchrus ciliaris*, *Digitaria eriantha* and *Panicum maximum* and sub-climax species, such as *Cymbopogon excavatus*, *Eragrostis superba*, *Eragrostis rigidior*, *Pogonarthia squarrosa*, *Sporobolus festivus* and *Trichoneura grandiglumis* indicate that the grasses in the study area provide important protection to the soil against wind, sun and flooding (Van Oudtshoorn, 1999). Thirty seven percent (37) of the species are identified as highly palatable with a high grazing value (Appendix B) and both the low and average grazing values constituted each of 31 % of the grasses in the area.

The ecological status of the grass indicates that the grass is overgrazed (Increaser I – 18%; Increaser II – 56%; Increaser III – 9%; Decreaser – 18%). The percentage of Increaser II indicates that certain grasses are abundant in an overgrazed veld (Van Oudtshoorn, 1999). The abundance of Increaser II corresponds to the number of sub-climax grass species in the project area. The proportion of Increaser I (underutilized grasses) is equal to the proportion of decreaseers, which indicates that there are grasses which are not being grazed, but grasses which start to decline when they are grazed to a large extent.

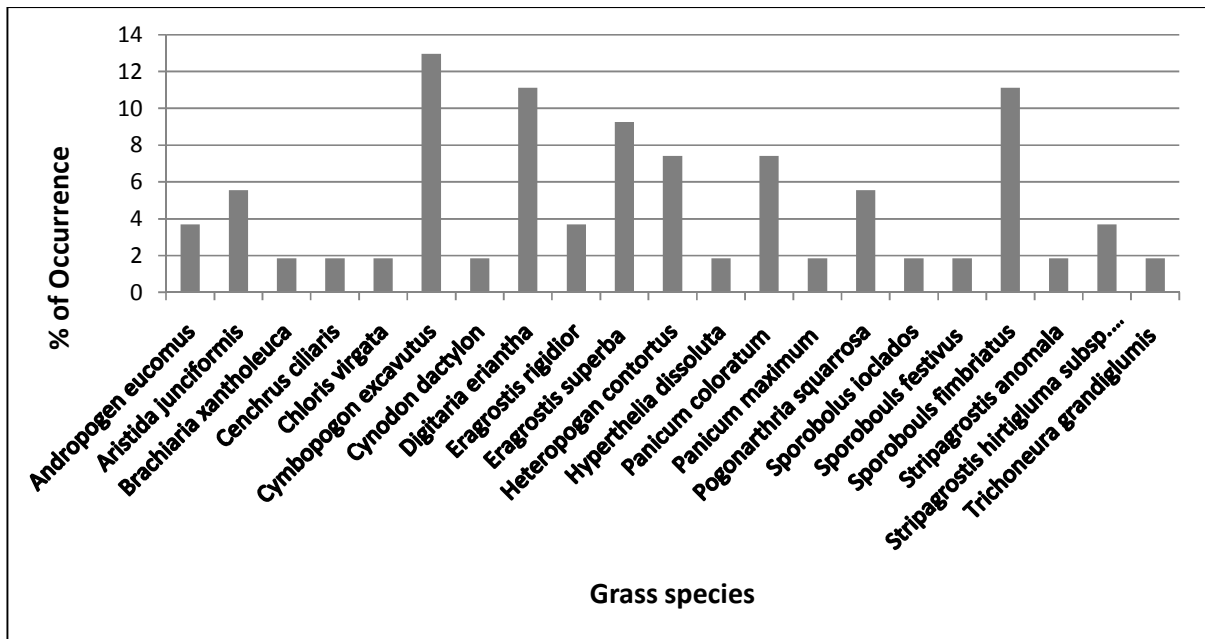


Figure 29: Percentage (%) of occurrence of grass species at the lodge site.

Table 4: Summary: Nkasa Lupala Lodge site's dominant grass and woody species.

Vegetation Unit	Grass component	Woody component
Open water, Floodplain; Wet and Dry Mamili grasslands	<i>Cymbopogon excavatus</i> <i>Digitaria eriantha</i> <i>Eragrostis superba</i> <i>Panicum coloratum</i> <i>Sporobolus fimbriatus</i> <i>Cyperus spp.</i>	<i>Combretum imberbe</i> <i>Diospyros lyciodes</i> <i>Gymnospermia senegalensis</i> <i>Acacia erioloba</i> <i>Philonoptera violacea</i> <i>Euclea divinorum</i> <i>Ziziphus mucronata</i>

7.3.4 CONCLUSION

Based on Mendelsohn & Roberts (1997) classification of vegetation units and the observed tree and grass assemblages, the lodge site vegetation units are classified as a combination of open water, floodplain, Dry and Wet Mamili grasslands and mixed woodland (Table 4). The tree and shrub species assemblage on site generally reveals an intact rangeland condition, besides the presence of the invasive *L.camara* and dense stands of *G. senegalensis*. The trees observed in the study area differ from the species expected to occur in Dry Mamili grassland vegetation unit classified by Hines in Mendelsohn & Roberts (1997). In comparison the trees are > 6 m and include a variety of other species (Appendix C), and *Terminalia serceia* was absent from the area. Given the difference in scale of the area, this study presents a micro scale description of the trees and shrubs found in the proposed development area.

The majority of the grass species recorded for this area were species known to concentrate in damp areas with known water logged sites such as vleis, seepage areas, open floodplains and riverbanks. The soil types determined through the presence of the grass species (i.e. grass and soil type associations) identified indicated both heavy clays and sandy soils with good drainage and fertile conditions. The presence of *Cenchrus ciliaris* and *Stipagrostis hirtigluma* subsp. *patula* indicate the presence of soils with high loam content. The combination of heavy clays, clay loams and sandy soils indicate a range of intermediate soils. These soils may occur here as a result of the mixing of sand and water over the years (Mendelsohn & Roberts, 1997), and this, over time, has resulted in the deposition of mixed soil at the site. The findings of the grass study correspond to the soil type of clay-loam categorized for the vegetation unit's soil – vegetation association by Hines in 1997 (Mendelsohn & Roberts (1997).

The presence of a minor number of climax species (40%) when compared to the number of sub-climax species (60%) indicates that the veld is in a transitional phase from sub-climax to a climax stage. The presence of sub-climax vegetation grass community indicates previous disturbance in the study area by fire and overgrazing.

7.4 FAUNA ASSESSMENT

7.5 AVIFAUNA

7.5.1 INTRODUCTION

Namibia has a wealth of bird diversity with a total of 676 known species (Simmons & Brown, 2006; MET, 2010). The country holds significant numbers of 5 globally threatened species and 14 near-threatened species. The study area falls into the eastern Caprivi bulge, in close proximity to the richest diversity of bird species anywhere in Namibia, the western Caprivi (Simmons *et al.* 2001). The lodge site borders on one of Namibia's Important Bird Areas (IBAs) along the eastern Caprivi wetland area, which covers an extent of 100 000 – 999 999 ha (Simmons *et al.* 2001). IBAs are areas that are recognized as sites of global significance for biodiversity conservation, and the wetland and tropical passerine (i.e. perching) birds in this region are the reason for the high numbers of birdlife diversity (Simmons & Brown, 2006). The importance of this area resides in the provision of habitat for the breeding requirements for wetland bird species resident in the area. Thus, the protection of the swamps and the floodplain habitat are vital to the maintenance of the bird numbers in the area. Of the 676 species of birds occurring in Namibia, roughly 400 (R. Simmons pers comms.) resident and migratory bird species are known to occur in the proposed development area. The overall avian diversity is highest in the north – eastern section of the Woodland biome supporting wetland areas and perennial rivers (Simmons *et al.* 1998).

A globally threatened species - the Slaty Egret (*Egretta vinaceigula*) and a critically endangered species, - the Wattled Crane (*Bugeranus carunculatus*) - occur in the area, both of which are protected by Namibian Law under the draft Parks and Wildlife Management Bill of 2004 (Simmons & Brown, 2006). Four near-threatened species - the Pallid Harrier (*Circus macrourus*), Great Snipe (*Gallinagon media*), Greater Painted Snipe (*Rostratula benghalensis*) and Black Winged Pratincole (*Glareola nordmanni*) - also occur in the project area. It is important to note that the majority of Namibia's birds are protected by the current Nature Conservation Ordinance of 1975 (Curtis & Louw, 2009).

7.5.2 METHODOLOGY

A checklist of birds recorded in the project area was extracted from a previous research project conducted by the Wildlife and Community Development Fund (WCDF) (de Wet & Gaedke, 2009) and this was used as the reference for the area species list. Hockey *et al.* (2005) was used to check the latest common and scientific names and Chittenden (2007) 'Roberts Bird Guide' was used to identify birds during the field observations, on the bird transects.

Eight bird transects were conducted on site on the 23rd March 2011. These transects covered the extent of the perimeter and of the proposed 13.956 ha of the proposed leasehold area. Transects were conducted by walking the full extent of the area from east to west. Observations were conducted at dawn from 06h30 to 08h30 with a pair of binoculars (Avian, 8 x 42) and the bird species list was compiled based on the sightings of each species within a 100m x 100m area. Audio bird calls were also recorded and Roberts Multimedia

Birds of Southern Africa, Version 3 (Gibbon, 2006) was used to check the calls, where necessary.

Due to the mobile nature of birds based on preferences and/or requirements for favoured roosting, breeding and foraging sites, they may forage in adjacent habitats and fly across a range of different habitat types (Curtis & Louw, 2009). On this basis, all bird sightings and audio calls were recorded on the species list from the field station camp at the Wuparo Conservancy Rupara camp site, located in proximity to the border of Nkasa Lupala National Park. Further to this, all species observed and audio-recognised on drives within the Nkasa Lupala National Park were recorded on the list. A list of the bird species recorded together with their status in Namibia and in the Southern African region is provided in Appendix C. This however, is by no means exhaustive or comprehensive list of the species which occur in the designated region of the project area. Refer to Hockey *et al.* (2005), Chittenden (2007) and Simmons and Brown (2006) as comprehensive references on the birds which are known to occur in the Caprivi region.

7.5.3 RESULTS

In total 136 species of birds were recorded for the area (Appendix C). Birds that were common at the site include Meyer's parrots, black crowned and Three-streaked tchagras, Grey-back camaroptera, Coppery tailed coucal, Grey and Yellow billed hornbills, Brubru and Puff-back shrikes, Long billed crombecs, Common schmitar – billed and Red billed woodhoepoes and Blue waxbills. These species are typical of woodland biome avian diversity. No Namibian endemic species were recorded during the baseline study. If the water channels in proximity to the proposed lodge site were surveyed by boat, the bird species count would have been higher in this particular location.

There were no signs of large raptor nests, or bird nests observed at or close to the site. The principal bird species within the lodge site are wetland and woodland species. Bird numbers will increase significantly in the wet season however, although it is believed the lodge development (if no extensive vegetation is lost) will not disrupt bird activity in the area.

7.6 MAMMAL DIVERSITY

7.6.1 INTRODUCTION

The lodge location, situated between two national parks in Namibia, namely Mudumu and Nkasa Lupala National Parks, is significant due to the fact it falls within five countries (KAZA TFCA - Kavango-Zambezi Transfrontier Conservation Area) spanning Angola, Namibia, Botswana, Zimbabwe and Zambia. This network arrangement links government, national parks and conservancies and aims to create habitat corridors by expanding a protected area network and is vital to sustaining areas of high biodiversity. Approximately 75 % of the mammal species richness (i.e. no of mammals) of Southern Africa exists in Namibia, with 14 endemic species (Simmons *et al.* 1998). Of the 154 mammal species in Namibia 14 are threatened (9% of total) (Groombridge & Jenkins, 1994). The species classed as 'Endangered' include the African Wild Dog, and those classed as 'Vulnerable' include the African Elephant (2010 IUCN Red List). According to the Nature Conservation Ordinance of

1975, 26 species are classed as 'Protected', and 6 as 'Specially Protected' under Namibian Law, including the black faced Impala.

Important ecological and other studies on the mammals of the Caprivi region are available in the form of reports and/or grey literature of limited distribution such as (Brown and Jones, 1994) (Timberlake & Childes, 2004). There have been regular annual censuses of large mammal populations in Nkasa Lupala and Mudumu National Parks in the Caprivi (Schlettwein *et al.* 1991). Mention must be made of the diminishing populations of Puku (*Kobus vardonii*), which are nearly extinct, and the scarce Tsessebe (*Damaliscus lunatus*) in the Caprivi (Schlettwein *et al.* 1991). In addition, the current counts of Sitatunga (*Tragelaphus spekkei*), and Red lechwe (*Kobus lechwe*) estimate their numbers to be about 10% of their 1980 totals (Timberlake & Childes, 2004).

7.6.2 METHODOLOGY

All the mammals observed in the vicinity of the proposed lodge site and in Nkasa Lupala National Park were recorded on a species list. Animals were recorded whether they were heard or sighted in the area. The survey was preceded by a comprehensive literature review (i.e. desktop study) of all the common mammals, including amphibians and reptiles known to occur in the general area.

7.6.3 RESULTS

Only two species of mammals were observed in the proposed lodge site area, a common duiker (*Sylvicapra grimmia*) and Greater kudu (*Tregelaphus stephicerus*). However, a total of 11 other species were recorded in the area between the 19th and 24th March 2011. The other 9 species observed and or heard during the field work include: African Elephant (*Loxodonta africana*), Lion (*Panthera leo*), Spotted Hyaena (*Crocuta crocuta*), Cape Buffalo (*Syncerus caffer*), Hippopotamus (*Hippopotamus amphibious*), Impala (*Aepyceros melampus*), Porcupine (*Hystrix africaeaustralis*), and of the primates, Chacma Baboon (*Papio ursinus*) and Vervet Monkey (*Cercopithecus aethiops*).

The absence of mammal diversity in proximity to the lodge and during the Nkasa Lupala National Park excursions may be attributed to the abundance of water available in the wetlands, resulting in the dispersal of game in the area. In addition, it may be from local illegal poaching occurring in the area, and the presence of the trophy hunting lodge within the conservancy.

Refer to Timberlake & Childes (2004) for a detailed reference list of small mammals (such as Bats and rodents) which occur in the area. The appendices refer to common mammal species expected to occur in the general area of the lodge site and within the Nkasa Lupala National Park (Appendix C).

7.7 REPTILE DIVERSITY

7.7.1 INTRODUCTION

The high occurrence of reptilian species and endemism is sustained by the areas in rich habitat, high prey density and the extent of the ecoregion. The Eastern Caprivi Wetland is comprised of Tree and Shrub Savannah Biome and Caprivi Floodplain and includes a large variety of grass species, reeds, sedges, and *Papyrus* and *Cyperus*, as well as tall tree species such as jackal-berry (*Diospyros mespilliformis*) and African mangosteen (*Garcinia livingstonei*) existing, in many cases, to the water edges. This heterogeneous habitat, comprising both aquatic and woodland species, provides habitat for a variety of reptiles and their requirements (e.g. shelter from predators, hunting/feeding opportunities, and breeding areas). Approximately 261 species of reptile occur in Namibia, 24% of which are endemic (Simmons *et al*, 1998). This large number supports 30% of Africa's total reptile species diversity (Griffin, 1998b) including aquatic, arboreal, fossorial and terrestrial species (2010 IUCN Red List).

The overall reptile diversity in the proposed lodge site area is estimated based on 17 Groups (Blind snakes, Worm Snakes, Pythons, African Burrowing Snakes, Colubrids, Elapids, Lizards, Chameleons, Monitors, Lacertids, Skinks, Planted lizards, Geckos, Crocodiles, Side necked Terrapins, and Tortoises), each containing a number of species (Alexander & Marais, 2007). A number of these are considered 'endangered' or threatened due to habitat destruction, restricted distribution, and human consumption (e.g. bush meat and muti) (Graham Alexander & Johan Marais, 2007).

Table 5: Summary of reptile families expected to occur in the study area.

COMMON NAME	FAMILY	CITES STATUS
BLIND SNAKES	TYPHLOPIDAE	
Beaked Blind Snakes		Endemic to Southern Africa
WORM SNAKES	LEPTOTYPHLOPIDAE	
The genus Leptotyphlops		
PYTHONS	PYTHONIDAE	
Southern African Python		Protected Game, Vulnerable - human consumption
AFRICAN BURROWING SNAKES	ATRACTASPIDIDAE	
Stiletto Snakes		
Centipede-eaters		
Natal Black Snakes and Purple-glossed Snakes		Restricted/Threatened - restricted distribution
Quill-Snouted Snakes		Rare - secretive. More research needed.
COLUBRIDS	COLUBRIDAE	
Brown House Snake		
Wolf Snake		
File Snake		

Mole Snake		
Marsh Swamp Snake		
Shovel-snouts		Endemic
Beaked Snakes		
Skaapstekers		
Olive Grass Snake		
Dwarf Whip Snake		
Sand and Whip Snakes		Vulnerable - restricted range. Threatened by habitat destruction
Green Snakes		
Egg-Eaters		
Tropical Water Snakes		
Tiger Snakes		
Boomslang Vine Snakes		
ELAPIDS	ELAPIDAE	
African Garter Snakes		
Shield Cobra		
Bushveld Cobras		
Spitting Cobras		
Black Mamba		
VIPERS	VIPERIDAE	
Night Adders		
Puff Adders		
AGAMAS	AGAMIDAE	
Agamas		
CHAMELEONS	CHAMAELEONIDAE	
Flap Neck Chameleon		CITES II
MONITORS	VARANIDAE	
Rock Monitors		Protected, CITES II, Used for Muti
Water Monitor		Used for Muti
LACERTIDS	LACERTIDAE	
Sand Lizard and related species		The Genera <i>Heliobolus</i> , <i>Meroles</i> , <i>Nucras</i> , and <i>Pedioplanis</i>
Rough Scaled Lizards		
AMPHISBAENIAN	AMPHISBAENIDAE	
Round Headed Worm Lizards		
Spade-snouted Worm Lizards		
SKINKS	SCINCIDAE	
Legless Burrowing Skinks		Some species listed as 'vulnerable' on account of restricted distribution
Snake-eyed Skink		
Writhing Skinks		
Typical Skink		
PLANTED LIZARDS	GERRHOSAURIDAE	

Typical Planted Lizard		
GECKOS	GEKKONIDAE	
Typical House Geckos		
Dwarf Geckos		Endemic, 'Vulnerable' Due to restricted range
Tubercled Geckos		
Smooth Geckos		
CROCODILES	CROCODYLIDAE	
Nile Crocodile		Reduction of habitat from extraction of water for human usage. Water pollution.
SIDE NECKED TERRAPINS	PELOMEDUSIDAE	
Marsh Terrapine		Protected Game
Hinged Terrapin		Protected Game
TORTOISES	TESTUDINIDAE	
Leopard Tortoise		CITES II, Protected Game
Hinged Tortoise		

Table 6: Summary of amphibian families expected to occur in the study area.

COMMON NAME	FAMILY	NO. OF SPECIES PROTECTED IN THE AREA	STATUS
TREE FROGS	ARTHROLEPTIDAE		
Bocage's Tree Frog			
RAIN FROGS	BREVICEPTIDAE		
Bushveld Rain Frog			IUCN - LC
TYPICAL TOADS	BUFONIDAE		
Gutteral Toad			
Lemaire's Toad			
Flat-Backed Toad			
Western Olive Toad			
PYGMY TOADS	BUFONIDAE		
Northern Pygmy Toad			
Kavango Pygmy Toad			
RED TOADS	BUFONIDAE	7	
One species in the Genus - on border.			
SHOVEL-NOSED FROGS	HEMISOTIDAE	1	
Guinea Shovel-nosed Frog			
Mottled Shovel-nosed Frog			
REED FROGS	HYPEROLIIDAE		
Bocage's Sharp-nosed Reed Frog			
Long Reed Frog			
Angolan Reed Frog			
KASSINAS	HYPEROLIIDAE	4	
Bubbling Kassina			IUCN - LC
RUBBER FROGS	MICROHYLIDAE	3	

Spotted Rubber Frog			
Banded Rubber Frog			
PUDDLE FROGS	PHRYNOBATRACHIDAE		
Dwarf Puddle Frog			
Snoring Puddle Frog			
Small Puddle Frog			
ORNATE FROGS	PTYCHADENIDAE		
Ornate Frog			
GRASS FROGS	PTYCHADENIDAE		
Plain Grass Frog			
Guibe's Grass Frog			
Mascarene Grass Frog			
Broad-Banded Grass Frog			
Sharp-nosed Grass Frog			
Speckled-bellied Grass Frog			
Dwarf Grass Frog			
Mapacha Grass Frog		Endemic	
PLATANNAS OR CLAWED FROGS	PIPIDAE	2	
Common Platanna			IUCN - LC
Muller's Platanna			
Peter's Platanna			
BULLFROGS	PYXICEPHALIDAE		
Giant Bullfrog			IUCN - LC
SAND FROGS	PYXICEPHALIDAE		
Tremolo Sand Frog			IUCN - LC
Tandy's Sand Frog			
FOAM NEST FROGS	RHACOPHORIDAE	1	
Southern Foam Nest Frog			

7.7.2 CONCLUSION

The overall impact on the local fauna (e.g. mammals, birds, reptiles and amphibians) and associated habitat destruction would be relatively small. Good environmental planning prior to the development (including associated infrastructure development) and access routes as well as following the provided mitigation measures would ensure that any negative impact is reduced and has minimal effect on the surrounding fauna and flora in the study area.

The trophy hunting operation in proximity to the proposed lodge site, and associated gunshots in the area is highly likely to influence the observations of mammals in proximity to the lodge. Illegal poaching, a regular occurrence in the area, is likely to result in diminishing numbers of animals observed in the vicinity of the lodge, in the Wuparo Conservancy and in Nkasa Lupala National Park.

8 SUMMARY OF BASELINE RECOMMENDATIONS

8.1 PUBLIC PARTICIPATION

- 1) It is highly recommended that the hunting operator of Caprivi Hunting Safaris cc and the lodge proponent of NLTL develop lines of communication (i.e. operational protocol) during the hunting season. The operational protocol should be based on a health and safety plan to avoid any human-wildlife conflict incidents within the Wuparo Conservancy (e.g. wounded animals moving into the exclusive zone of the lodge). Secondly, the movement of both the hunter and tourism activities should be co-ordinated so that the operational parties are aware of the presence of each other within the Wuparo Conservancy. The hunting and tourism operators should consider using hand-held radios in order to aid regular communication of each other's movements. This is crucial given that the lodge will approach MET to conduct walking and boating safaris in the Wuparo Conservancy and the park.
- 2) The lodge proponent should liaise with MET regarding the upgrading Nkasa Lupala National Park's infrastructure to improve the road network, build bridges, tourist camping facilities and the marketing of the community run camp sites on the border of the park.
- 3) An agreement between the Wuparo Conservancy and the lodge developer should be considered with regard to allowing the surrounding communities access to natural resources in the vicinity of the proposed lodge site (e.g. thatching grass).

8.2 SOCIO-CULTURAL RECOMMENDATIONS

- 1) The project proponent must clearly indicate to the Sangwali community the benefits that are associated with the presence of the development of the lodge.
- 2) The project proponent must clearly distinguish between the benefits received by trophy hunting enterprise in the conservancy in the area, and the benefits that will be provided by the development of a tourism lodge in the area.
- 3) The lodge should be marketed to the appropriate tourism niche (SADC) of visiting tourists to the region to ensure that the proposed lodge is perceived as an attractive destination for international self-drive tourists.
- 4) In order to provide the opportunities for skills transference, the Wuparo Conservancy community members and the lodge proponent, should arrange start up business partnerships with members of the Sangwali community.
- 5) The proponent should source all materials locally, to facilitate the maximum economic benefits to the community, in terms of local businesses and new business sales.
- 6) The proponent should fulfil the stated lodge benefits that have been described to the community (e.g. vegetable and poultry projects, and renovation of the environmental

education facility), in order to build a relationship of trust and transparency within the Wuparo Conservancy.

- 7) The lodge should devise a staff – management conflict administrative plan, prior to the establishment and opening of the lodge.

8.3 FLORA RECOMMENDATIONS

1. There are a number of dead trees in the development site, such as *Philenoptera violacea* and *Combretum imberbe*. These trees form important biodiversity hotspots. For example they provide habitat for cavity nesting birds, such as Black collared barbets and hornbills and for roosting bats and should be preserved accordingly. The proponent has requested that certain dead trees on site be removed. These trees may only be removed if they pose a serious hazard/risk by potentially falling over either on a visitor or the tent units. Only those shrubs and dead trees deemed totally necessary for removal should be extracted. These shrubs should be clearly marked and the removal supervised by a conservancy warden. A Wuparo Conservancy warden should be taken to the site prior to development and shown the dead trees and shrubs which are to be removed. No trees should be cut down for the placement of accommodation units or back of house facilities. The larger trees such as *D. mespiliformis* and *E. africanum* should be incorporated into the natural setting of the lodge.
2. Incorporate the large trees on site and specially protected species (e.g. *B. africanum*, *Z. mucronata*, *A. erioloba* and *C. imberbe*) into the development and design of the lodge. For example, the network of pathways should be created around these species.
3. Avoid developing and placing the tent infrastructure at the northern edge of the perimeter in close proximity to the water's edge at the proposed development site. The vegetation in this area (aquatic grasses, such as sedges, such as *Cyperus* spp.) forms important habitat for nesting birds and amphibians at the site.
4. Firewood must be collected from outside the park area. Since the lodge is so close to the border of the park, the collection of firewood must be managed. Further to this, avoid using dead wood in the vicinity of the lodge for fire wood (refer to recommendation 1).
5. Be aware of lighting fires in the lodge (e.g. leaving alight paraffin lamps in the tents, candles etc), as this could result in a fire in camp. On this basis the fires must always be monitored in camp. Once a fire has been put out in the boma (e.g. enclosed eating area in the bush), it must be covered with a frame to prevent the wind from picking up embers and potentially starting a fire. Fires have a detrimental affect on smaller rodents, nesting birds and insects, and thus affect the local fauna.

6. Eradicate all the *L.camara* (Figure 27) from the site. This species, over time will replace indigenous species, resulting in the reduction of biodiversity at the site. The removal of this species will demonstrate environmental commitment. Clear dense stands of *G. senegalensis* from the proposed development site and monitor the presence of *D. cinera* at the development site.
7. To prevent soil erosion at the proposed development site, avoid clearing large areas of grass and exposing the soil, as this reduces overall biodiversity of the area and increases water run-off. It is also recommended that the planned network of walkways between the lodge main area and the guest tents be raised on wooden platforms to prevent the clearing of grass and increasing the erosion potential at the site (this will also increase the safety of walking between areas at the lodge site).

8.4 FAUNA RECOMMENDATIONS

- 1) Bird nests are likely to be concealed in dense vegetation, and specifically in the reed/*Cyperus* aquatic vegetation and in the tree canopy, thus on this basis vegetation removal at the site must be avoided during the proposed infrastructure development. This area potentially serves as an important habitat for the amphibians and breeding sites for grass nesting birds (e.g. Warblers).
- 2) It is recommended that the tents are raised on platforms to prevent smaller rodents from chewing holes in the tents to gain access to guest food supplies stored in the tents. This will prevent any potential use of pest control poisons on the site. Poisons have severe implications for ecological food chains, and in particular, raptors (i.e. secondary poisoning).
- 3) Avoid using pesticides to spray the rooms to control insects and mosquitoes in the summer months. This will overall reduce the presence of biodiversity in and around the lodge, as well as spiders and their associated webs that form natural mosquito capture nets in the environment.
- 4) Dead trees and fallen over logs are important sources of decomposing organic material in the ecosystem. Furthermore, they serve as important breeding and roosting sites for a number of cavity nesting birds and bats. Thus, these trees must not be removed from site, unless they are a hazard to a nearby tent or path, where injury may result if the dead tree falls over and injures a staff member or guest. Not only do these large trees for bird and bats, they are also home to a host of other smaller species such as scorpions, small rodents, numerous insects (e.g. bark living), and serve as a roost for monitor lizards in the winter months of the year.
- 5) Discourage the collection of tortoises, local snaring (i.e. illegal poaching), trapping of animals, and the killing of dangerous species (i.e. scorpions and

snakes) around the lodge area. Implement an environmental awareness policy at the lodge for all the staff members of NLTL.

- 6) The solid waste containers and the organic pits must be enclosed inside an area to prevent scavenging animals from gaining access to the site (e.g. honey badgers, porcupines, baboons, hyenas, marabou storks and hornbills). This is an unhygienic setting and further to this encourages animals to come closer to the lodge site.
- 7) Bury all water pipes to prevent elephants from digging them up in the dry season. In addition, the water tanks must be either raised as a gravity-flow tank or have sharp rocks around the base to prevent elephants from damaging the equipment.
- 8) The lodge infrastructure must be incorporated into the natural setting of the environment.

9 ENVIRONMENTAL IMPACT ASSESSMENT

This EIA identified the impacts from the potential positive and negative perceived impacts at the commencement of the study and from the baseline ecological studies, and includes the public participation process conducted as part of the full EA.

9.1 RAPID IMPACT ASSESSMENT MATRIX (RIAM)

The RIAM (Pastakia 1998) software package was used for the analysis of the proposed NLTL investigated development impacts. The software is an analysis and presentation tool for Environmental Impact Assessments (EIA), which allows the EIA reports to be produced in a transparent and understandable way.

9.1.1 Methodology

The method is based on the definition of environmental assessment criteria that are ranked according to the nature of the impact and produces semi-quantitative values which are collated to provide independent scores for a particular condition. Thus, the technique is based on matrix scores and the associated environmental assessment criteria (**Table 8**), which are dependent on the **importance of the condition** (e.g. which can individually change the score obtained) and the **value of the situation** (e.g. should not be capable of changing the score) of the potential impacts assessed in the EIA study.

Table 7: RIAM Environmental Components defined as per Pastakia (1998)

RIAM requires specific environmental components to be defined through a process of assessment, which are grouped in to one of four categories and defined as follows:

Environmental Components	Definition
Physical/ chemical	Covers the physical and chemical aspects of the environment that includes non-organic resources.
Biological/ ecological	Covers the biological and ecological aspects e.g. rare/threatened or endangered species; breeding sites; habitat conversion etc.
Social/ cultural	Covers the human aspects e.g. social issues affecting individuals and communities in the impacted environment.
Economic/ operational	Covers the economic consequences of the development.

Environmental Scores (ES)

The matrix based on the ES system allows for a qualitative assessment of the identified environmental impacts of the intended development. These ES scores are banded into Range Values (RV), which indicate the status of the impact (i.e. major positive and negative significant impacts and/or moderate to no impacts (Table 9).

Impact analysis

In this study each positive and negative potential impact were assessed according to the RIAM ranking criteria (Table 8). Thus, the construction, operational and decommissioning phases of the intended development was assessed and the results are presented in Table 10, Table 11 and Table 12 below.

Analysis of alternatives

The EIA will assess two different alternatives namely, the intended development (OP1) and the No-Action Alternative (OP2).

Table 8: RIAM Matrix Ranking Criteria

GROUP A	
Importance of condition (A1)	
4	Important to national/international interests
3	Important to regional/national interests
2	Important to areas immediately outside the local condition
1	Important only to the local condition
0	No importance
Magnitude of change/effect (A2)	
+3	Major positive benefit
+2	Significant improvement in status quo
+1	Improvement in status quo
0	No change/status quo
-1	Negative change to status quo
-2	Significant negative dis-benefit or change
-3	Major dis-benefit or change
GROUP B	
Permanence (B1)	
1	No change/not applicable
2	Temporary
3	Permanent
Reversibility (B2)	
1	No change/not applicable
2	Reversible
3	Irreversible
Cumulative (B3)	
1	No change/not applicable
2	Non-cumulative/single
3	Cumulative/synergistic

Table 9: Description of RIAM Environmental Scores (ES) range bands used in the analysis of the impacts.

RIAM Environmental Score (ES)	Range Value (RS) (Alphabetic)	Range Value (RS) (Numeric)	Description of Range Band
108 to 72	E	5	Major Positive Change/Impact
71 to 36	D	4	Significant Positive Change/Impact
35 to 19	C	3	Moderate Positive Change/Impact
10 to 18	B	2	Positive Change/Impact
1 to 9	A	1	Slight Positive Change/Impact
0	N	0	No Change/Status quo/Not Applicable
-1 to -9	-A	-1	Slight Negative Change/Impact
-10 to -18	-B	-2	Negative Change/Impact
-19 to -35	-C	-3	Moderate Negative Change/Impact
-36 to -71	-D	-4	Significant Negative Change/Impact
-72 to -108	-E	-5	Major Negative Change/Impact

Table 10: Construction Phase. Identification and assessment of construction phase impacts.

The impacts were analysed according to the intended use and the development of the proposed site, versus the redevelopment and continued use of the current site, while the no action alternative was also analysed; Impact codes: PC: Physical- Chemical (green)/ BE" Biological-Ecological (red) /SC: Socio-Cultural(grey) /EO: Economic-operational (blue).

Impact code	Potential impact	Causes of impact/Activity	Direct or Indirect	Spatial importance of Condition	+ve/-ve	Permanence	Reversible or Irreversible	Cumulative or Non-Cumulative
PC 1	Ground water pollution	Soak away latrines used by the contract staff; clay soils on the northern edge of the lodge site have a low drainage potential ; pipe leakage in proximity to the water channel and hydrocarbon spills	Direct	Local	-ve	Long-term	Irreversible	Cumulative
PC 2	Damage to the access road to site and to the park boundary	Heavy vehicles (Mercedes truck) transporting building material to the site; Removal of vegetation on the sides of the road, including over hanging branches	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
PC 3	Soil contamination	Hydrocarbon spills (Fuel, oil or toxic chemicals spillages on site ; solid waste and associated liquid wastes leak and permeate into the surrounding soils	Direct	Local	-ve	Long-term	Reversible	Cumulative
PC 4	Soil compaction	Vehicle movement on site during construction	Direct	Local	-ve	Long-term	Reversible	Cumulative
PC 5	Solid waste pollution	Lechate permeates into the surrounding soils; inefficient waste disposal on site (i.e. of a temporary nature during the construction phase).	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 6	Soil erosion	Construction vehicle activity on site and on the main access road to the lodge; wet road conditions (i.e during the rainy season) during the building stage.	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 7	Water loss	Leaking pipes during the construction phase; waste of water by construction staff	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 8	Visual pollution	Lodge construction and delivery of materials to the site	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
PC 9	Noise pollution	Construction machinery and tools on site; human activity	Direct	Local	-ve	Short-term	Reversible	Non-cumulative

PC 10	Air pollution	CO ² released into the atmosphere from old vehicles; burning of combustible waste products on site; use of pesticides for mosquitoes in summer	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
BE 1	Use of natural resources	Construction teams use of deadwood for firewood on site	Direct	Local	-ve	Short-term	Irreversible	Cumulative
BE 2	Illegal Poaching: killing of fauna on site	Construction workers kill snakes, tortoises & scorpions or other faunal species on site which are perceived as dangerous/threatening and/or on cultural superstition	Direct	Local	-ve	Short-term	Irreversible	Cumulative
BE 3	Wildlife disturbance and habitat loss	Construction activities disturb mammal, nesting birds (e.g. grass nesting species) and amphibian habitat; construction vehicles damage vegetation i.e. removal of trees, shrubs and grass; infrastructural development on site clears critical habitat	Direct	Local	-ve	Short-term	Reversible	Cumulative
BE 4	Wildlife movement disturbance	Blockage of animal paths, such as regular paths used by elephant and buffalo to grazing areas and water sources at site	Indirect	Local	-ve	Long-term	Irreversible	Non-cumulative
BE 5	Wildlife problem animals	Inadequate solid waste containers and scavenging animals gain access to construction waste refuse	Direct	Local	-ve	Short-term	Reversible	Cumulative
BE 6	Wildlife mortality	Trenches trapping and killing wildlife (e.g. preparation of water pipe-lines at site); use of pesticides and herbicides (i.e. secondary poisoning, particularly to bird species feeding on insects and foliage).	Direct	Local	-ve	Long-term	Irreversible	Non-cumulative
BE 7	Vegetation destruction	Removal of vegetation along the new entrance and access track	Direct	Local	-ve	Long-term	Irreversible	Non-cumulative
BE 8	Vegetation: Introduction of invasive species	Exposure of the soil results in alien species encroachment/establishment at the lodge site	Direct	Local	-ve	Long-term	Reversible	Cumulative
BE 9	Trampling and clearing of grass	Development of the pathways connecting the guest tents and staff quarters to the main lodge area	Direct	Local	-ve	Long-term	Irreversible	Non-cumulative
BE 10	Vegetation change in species composition	Change in habitat composition affects nutrient cycling (i.e. removal of dead wood and thus, organic matter) and species composition; transfer of alien invasive species on externally sourced building supplies	Direct	Local	-ve	Long-term	Irreversible	Cumulative

BE 11	Fire risk habitat and wildlife	Accidental start of fire by construction equipment; cigarettes and staff camp fires	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
BE 12	Proximity to Nkasa Lupala National Park	Tourists no longer visit the National Park due to the absence of the lodge	Direct	Local	-ve	Short-term	Reversible	Cumulative
BE 13	Wildlife monitoring	Construction manager will be observant of wildlife movements in the area.	Direct	Local	+ve	Short-term	Reversible	Non-cumulative
SC 1	Proximity of Trophy Hunting Lodge	Rifle shots in proximity to the lodge site; possible presence of a wounded animal (e.g. buffalo) close to camp; possible death to staff member	Direct	International	-ve	Long-term	Irreversible	Cumulative
SC 2	Health & Safety: Dangerous game	Presence of grazing hippos, old mature buffalo bulls and hunting, scavenging and/or predators in proximity to the lodge site	Direct	International	-ve	Long-term	Irreversible	Cumulative
SC 3	Health & Safety: water quality (drinking water)	Unknown quality of water in the neighbouring channel	Indirect	Local	-ve	Long-term	Reversible	Cumulative
SC 4	Health & Safety: Transmission of HIV	Transmission between contract staff in camp	Direct	Regional	-ve	Long-term	Irreversible	Cumulative
SC 5	Health & Safety: Construction accidents	Accidents on site during construction	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
SC 6	Health & Safety: Environmental conditions	High temperatures cause heat exhaustion among construction staff	Indirect	Local	-ve	Short-term	Reversible	Non-cumulative
SC 7	Health & Safety: Malaria area	Construction staff are exposed to malaria area	Indirect	Local	-ve	Short-term	Irreversible	Cumulative
SC 8	Health & Safety: Lack of communication	Lack of communication regarding lodge and environmental hazards- no swimming in the channels - presence of crocodiles and hippos	Indirect	Local	-ve	Long-term	Irreversible	Non-cumulative
SC 9	Health & Safety: Noise disturbance	The use of machinery on site	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
SC 10	Visual impact	Construction activity close to the park boundary	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
SC 11	Loss of archaeological artefacts	Construction activity damages archaeological artefacts	Direct	International	-ve	Long-term	Irreversible	Non-cumulative

SC 12	Community attitude	Development activity has consequential impact on surrounding community attitude, which may be resentment if they are excluded from development; lack of benefits e.g. not enough jobs provided etc.	Indirect	Local	-ve	Short-term	Reversible	Cumulative
SC 13	Community: Employment opportunities	Increase in work opportunities due to the lodge development	Direct	Local	+ve	Long-term	Irreversible	Cumulative
SC 14	Tourism diversity	Development increases tourism diversity in the Caprivi region. Large benefits for Tour operators in Namibia and surrounding communities.	Direct	International	+ve	Long-term	Reversible	Cumulative
SC 15	International/ National/local marketing opportunities	Marketing of lodge during pre-construction affects national, international awareness of development, which affects the surrounding communities.	Indirect	International	+ve	Long-term	Reversible	Cumulative
SC 16	Community based tourism projects	Opportunity for community run projects to establish as part of the lodge activities (e.g. traditional restaurant, cultural, musical festivals, handmade crafts).	Direct	National	+ve	Long-term	Reversible	Cumulative
SC 17	Community: Educational facilities	Community has access to study materials, kindergarten and educational upliftment.	Direct	International	+ve	Long-term	Irreversible	Cumulative
SC 18	Lack of project ownership	Lack of leadership, ownership and accountability of local trade and business.	Direct	Local	-ve	Short-term	Reversible	Cumulative
SC 19	Lack of transparency between proponent and community	Theft and distrust of Traditional Authority and Sangwali Community	Direct	Local	-ve	Long-term	Irreversible	Cumulative
SC 20	Competition between trophy hunting lodge and tourism operation for community support	Contribution of different benefits from different enterprises in the community	Direct	Local	-ve	Long-term	Reversible	Cumulative
SC 21	Failure of external assistance (e.g. MMC) to deliver promises	Unsuccessful grant application and/or failure of MCA to deliver funds to proponent and the Wuparo community	Direct	International	-ve	Long-term	Reversible	Non-cumulative

SC 22	Conservancy does not meet the contractual obligations of the tourism operator	Broken contract, mismanagement of funds; broken trust and lack of transparency between community and tour operator	Direct	Local	-ve	Long-term	Irreversible	Cumulative
SC 23	Tourism operator does not honour the conservancy contract	Broken contract and lack of trust	Direct	Local	-ve	Long-term	Irreversible	Cumulative
SC 24	Accessibility to the lodge site	Lack of good roads for tourists and self-drives	Direct	Regional	-ve	Short-term	Reversible	Non-cumulative
SC 25	Wilderness experience without man-made features	Pristine environment, unique attractions, Namibia's largest wetland; birding activity	Direct	International	+ve	Long-term	Reversible	Cumulative
SC 26	Tourism marketing in the area by the lodge	Tourism increase for the Caprivi region and the Sangwali community is supported	Direct	International	+ve	Long-term	Reversible	Cumulative
EO 1	Financial cost of construction	Prohibitive investment costs and long term impact viability of project proponent	Direct	National	- ve	Short-term	Irreversible	Cumulative
EO 2	Community skills base increases	Local community members go for hospitality training and guide training.	Direct	National	+ve	Long-term	Irreversible	Cumulative
EO 3	Financial impact of visitors to the Sangwali area	Lodge development affects visitor numbers to Sangwali area.	Indirect	National	+ve	Long-term	Reversible	Cumulative
EO 4	Employment increase	Construction staff hired from local area. Locally employed lodge staff	Direct	Local	+ve	Short-term	Reversible	Cumulative
EO 5	Revenue to local trade	Increased business/employment for local trade	Indirect	Regional	+ve	Short-term	Irreversible	Cumulative
EO 6	Increase in crime due to wealthy resource	Increase in infrastructure, tourists and facilities attract criminals.	Direct	National	-ve	Long-term	Reversible	Cumulative
EO 7	Government revenue	Increased revenue through taxation of construction companies.	Indirect	National	+ve	Short-term	Irreversible	Cumulative

Table 11: Operational Phase. Identification and assessment of construction phase impacts.

Impact codes: PC: Physical- Chemical (green)/ BE" Biological-Ecological (red) /SC: Socio-Cultural(grey) /EO: Economic-operational (blue).

Impact code	Potential impact	Causes of impact/Activity	Direct or Indirect	Spatial importance of Condition	+ve/-ve	Permanence	Reversible or Irreversible	Cumulative or Non-Cumulative
PC 1	Ground water pollution	Soak away latrines used in operation of the lodge; inefficient septic tanks (e.g. blockages); pipe leakage in proximity to the water channel	Direct	Local	-ve	Long-term	Irreversible	Cumulative
PC 2	Damage to the access road to site and to the park boundary	Vehicle use on site and in the surrounding park areas	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 3	Soil contamination	Absence of solid waste management on site and at workshop facilities (e.g. no drip trays for potential hydrocarbon spills and/or leaks)	Direct	Local	-ve	Long-term	Reversible	Cumulative
PC 4	Soil compaction	Vehicle movement on site during operation (e.g. lodge access and delivery of goods).	Direct	Local	-ve	Long-term	Reversible	Cumulative
PC 5	Solid waste pollution	Kitchen and office waste being blown around site; attraction of fauna to the solid waste enclosure (i.e. baboons, porcupines and scavenging birds) and gain entry to the waste site; waste falls off waste transport trucks	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 6	Soil erosion	Heavy vehicle usage on roads (e.g. land drovers/Unimark) on access and delivery entrances; use of vehicle parking bays; creation of roads and pathways change water run-off direction; paths to main areas and staff quarters	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 7	Water loss	Leaking pipes on site; absence of timing meters at water storage tanks; elephants access water pipes underground or break water tank; water consumption needs increase (i.e. demand increases)	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 8	Visual pollution	In autumn/ winter the lodge is exposed during leaf defoliation, which creates visual pollution for visitors to the area	Direct	Local	-ve	Short-term	Reversible	Non-cumulative

PC 9	Noise pollution	Human activity at the lodge (e.g. talking/singing/dancing); vehicle movement on site; possible use of generators; noise from the workshop; noise from the staff quarters	Direct	Local	-ve	Long-term	Irreversible	Cumulative
PC 10	Air pollution	CO ₂ released into the atmosphere from old vehicles; burning of combustible waste products on site; smoke from boma fires; use of pesticides for mosquitoes in summer	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
BE 1	Use of natural resources	Lodge uses the surrounding deadwood for firewood on site	Direct	Local	-ve	Short-term	Irreversible	Cumulative
BE 2	Illegal Poaching: killing of fauna on site	Lodge staff kill snakes, tortoises & scorpions or other faunal species on site which are perceived as dangerous/threatening and/or on cultural superstition	Direct	Local	-ve	Short-term	Irreversible	Cumulative
BE 3	Wildlife disturbance and habitat loss	Lodge activities disturb mammal, nesting birds (e.g. grass nesting species) and amphibian habitat	Direct	Local	-ve	Short-term	Reversible	Cumulative
BE 4	Wildlife movement disturbance	Location of lodge blocks off animal paths, such as regular paths used by elephant and buffalo to grazing areas and water sources at site	Indirect	Local	-ve	Long-term	Irreversible	Non-cumulative
BE 5	Wildlife problem animals	Inadequate solid waste containers and/or storage results in scavenging animals gaining access to the lodges waste refuse site	Direct	Local	-ve	Short-term	Reversible	Cumulative
BE 6	Wildlife mortality	Use of pesticides (for guest tents) and herbicides (for alien invasive vegetation)	Direct	Local	-ve	Long-term	Irreversible	Non-cumulative
BE 7	Vegetation destruction	Vegetation damage whilst driving off-road; preparation of bush breakfast and bush dinner sites	Direct	Local	-ve	Long-term	Irreversible	Non-cumulative
BE 8	Vegetation: Introduction of invasive species	Exposure of the soil results in alien species encroachment/establishment at the lodge site; kitchen waste (e.g. Vegetables not placed in the organic waste pit and establishment of alien invasives on site	Direct	Local	-ve	Long-term	Reversible	Cumulative
BE 9	Trampling and clearing of grass	Guest and staff using the pathways connecting the guest tents and staff quarters to the main lodge area	Direct	Local	-ve	Long-term	Irreversible	Non-cumulative

BE 10	Vegetation change in species composition	Change in habitat composition affects nutrient cycling (i.e. removal of dead wood and thus, organic matter) and species composition	Direct	Local	-ve	Long-term	Irreversible	Cumulative
BE 11	Fire risk to habitat and wildlife	Accidental start of fire by lodge equipment; cigarettes, staff and camp fires; bush breakfasts and bush dinner fires not being put out before departure back to camp	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
BE 12	Proximity to Nkasa Lupala National Park	Tourists visiting the National Park due to the presence of the lodge	Direct	Local	+ve	Long-term	Reversible	Cumulative
BE 13	Wildlife monitoring	Guides and managers will monitor daily wildlife sightings and communicate this information to Nkasa Lupala National Park wardens	Direct	Local	+ve	Long-term	Reversible	Cumulative
SC 1	Proximity of Trophy Hunting Lodge	Rifle shots in proximity to the lodge site; possible presence of a wounded animal (e.g. buffalo) close to camp; possible death to staff or a guest	Direct	International	-ve	Long-term	Irreversible	Cumulative
SC 2	Health & Safety: Dangerous game	Presence of grazing hippos, old mature buffalo bulls and hunting, scavenging and/or predators in proximity to the lodge site exposes guests and staff to dangerous animals	Direct	International	-ve	Long-term	Irreversible	Cumulative
SC 3	Health & Safety: water quality (drinking water)	Poor quality of water in the neighbouring channel	Indirect	Local	-ve	Short-term	Reversible	Cumulative
SC 4	Health & Safety: Transmission of HIV	Transmission between staff members	Direct	Regional	-ve	Long-term	Irreversible	Cumulative
SC 5	Health & Safety: Lodge accidents	Accident during a lodge activity or in camp	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
SC 6	Health & Safety: Environmental conditions	High temperatures cause heat exhaustion among staff members and guests	Indirect	Local	-ve	Short-term	Reversible	Non-cumulative
SC 7	Health & Safety: Malaria area	Staff and guests are exposed to malaria area	Indirect	Local	-ve	Short-term	Irreversible	Cumulative
SC 8	Health & Safety: Lack of communication	Lack of communication regarding lodge and environmental hazards- no swimming in the channels - presence of crocodiles and hippos	Indirect	Local	-ve	Long-term	Irreversible	Non-cumulative

SC 9	Health & Safety: Noise disturbance	The use of a generator on site (i.e. cloudy conditions and the absence of solar power)	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
SC 10	Visual impact	Lodge activity close to the park boundary (e.g. vehicle movement)	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
SC 11	Loss of archaeological artefacts	Lodge activity uncovers archaeological artefacts	Direct	International	+ve	Long-term	Irreversible	Non-cumulative
SC 12	Community attitude	Development activity has consequential impact on surrounding community attitude, which may be resentment if they are excluded from development; lack of benefits e.g. not enough jobs provided etc.	Indirect	Local	-ve	Short-term	Reversible	Cumulative
SC 13	Community: Employment opportunities	Increase in work opportunities due to the lodge development	Direct	Local	+ve	Long-term	Irreversible	Cumulative
SC 14	Tourism diversity	Development increases tourism diversity in the Caprivi region. Large benefits for Tour operators in Namibia and surrounding communities.	Direct	International	+ve	Long-term	Reversible	Cumulative
SC 15	International/ national/local marketing	Marketing of lodge during operation affects national, international awareness of development, which affects the surrounding communities.	Indirect	International	+ve	Long-term	Reversible	Cumulative
SC 16	Community based tourism projects	Opportunity for community run projects to establish as part of the lodge activities (e.g. traditional restaurant, cultural, musical festivals, handmade crafts).	Direct	National	+ve	Long-term	Reversible	Cumulative
SC 17	Community: Educational facilities	Community has access to study materials, kindergarten and educational upliftment.	Direct	International	+ve	Long-term	Irreversible	Cumulative
SC 18	Lack of project ownership	Lack of leadership, ownership and accountability of local trade and business.	Direct	Local	-ve	Short-term	Reversible	Cumulative
SC 19	Lack of transparency between proponent and community	Theft and distrust of Traditional Authority and Sangwali Community	Direct	Local	-ve	Long-term	Irreversible	Cumulative

SC 20	Competition between trophy hunting lodge and tourism operation for community support	Contribution of different benefits from different enterprises in the community	Direct	Local	-ve	Long-term	Reversible	Cumulative
SC 21	Failure of external assistance (e.g. MCA) to deliver promises	Failure to deliver funds to proponent and Wuparo community	Direct	International	-ve	Long-term	Reversible	Non-cumulative
SC 22	Conservancy does not meet the contractual obligations of the tourism operator	Broken contract, mismanagement of funds; broken trust and lack of transparency between community and tour operator	Direct	Local	-ve	Long-term	Irreversible	Cumulative
SC 23	Tourism operator does not honour the conservancy contract	Broken contract and lack of trust	Direct	Local	-ve	Long-term	Irreversible	Cumulative
SC 24	Accessibility to the lodge site	Lack of good roads for tourists and self-drives	Direct	Regional	-ve	Short-term	Reversible	Non-cumulative
SC 25	Wilderness experience without man-made features	Pristine environment, unique attractions, Namibia's largest wetland; birding activity	Direct	International	+ve	Long-term	Reversible	Cumulative
SC 26	Tourism marketing in the area by the lodge	Tourism increase for the Caprivi region and the Sangwali community is supported	Direct	International	+ve	Long-term	Reversible	Cumulative
EO 1	Financial cost of construction	Increasing investment costs and long term impact viability of project proponent	Direct	National	+ve	Short-term	Reversible	Cumulative
EO 2	Community skills base increases	Local community members continue to gain skills.	Direct	National	+ve	Long-term	Irreversible	Cumulative
EO 3	Financial impact of visitors to the Sangwali area	Lodge development affects visitor numbers to Sangwali area.	Indirect	National	+ve	Long-term	Reversible	Cumulative
EO 4	Employment increase	Construction staff hired from local area. Locally employed lodge staff	Direct	Local	+ve	Short-term	Reversible	Cumulative
EO 5	Revenue to local trade	Increased business/employment for local trade	Indirect	Regional	+ve	Short-term	Irreversible	Cumulative
EO 6	Increase in crime due to wealthy resource	Increase in infrastructure, tourists and facilities attracts criminals.	Direct	National	-ve	Long-term	Reversible	Cumulative

EO 7	Government revenue	Increased revenue through taxation of lodge and lodge operation.	Indirect	National	+ve	Short-term	Irreversible	Cumulative
------	--------------------	--	----------	----------	-----	------------	--------------	------------

Table 12: Decommissioning Phase. Identification and assessment of construction phase impacts.

Impact codes: PC: Physical- Chemical (green)/ BE: Biological-Ecological (red) /SC: Socio-Cultural (grey) /EO: Economic-operational (blue).

Impact code	Potential impact	Causes of impact/Activity	Direct or Indirect	Spatial importance of Condition	+ve/-ve	Permanence	Reversible or Irreversible	Cumulative or Non-Cumulative
PC 1	Ground water pollution	Presence of old soak aways left on site; residual chemicals left over from spillages on site	Direct	Local	-ve	Long-term	Irreversible	Cumulative
PC 2	Damage to the access road to site and to the park boundary	Heavy vehicles' removing infrastructure form site	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 3	Soil contamination	Remnant waste from possible leakages form sewerage pipes to the soak aways	Direct	Local	-ve	Long-term	Reversible	Cumulative
PC 4	Soil compaction	Heavy vehicle movement on site roads	Direct	Local	-ve	Long-term	Reversible	Cumulative
PC 5	Solid waste pollution	Waste material falling off transport trucks during decommissioning	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 6	Soil erosion	Movement of vehicles on site; exposure of lodge site after the infrastructure has been removed	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 7	Water loss	Removal of water pipes at the site	Direct	Local	-ve	Short-term	Reversible	Cumulative
PC 8	Visual pollution	Transport of the material out of the area; dismantling of lodge infrastructure (i.e. impact of decommissioning activity)	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
PC 9	Noise pollution	Dismantling of lodge infrastructure; Human activity at the lodge (e.g. talking/singing/dancing) during decommissioning; vehicle movement on site; use of generator and noise form the workshop decommissioning	Direct	Local	-ve	Long-term	Irreversible	Cumulative
PC 10	Air pollution	CO ² released into the atmosphere from old vehicles; burning of combustible waste products during site decommissioning	Direct	Local	-ve	Short-term	Reversible	Non-cumulative

BE 1	Use of natural resources	Decommissioning staff use the surrounding deadwood for firewood on site	Direct	Local	-ve	Short-term	Irreversible	Cumulative
BE 2	Illegal Poaching: killing of fauna on site	Decommissioning staff kill snakes, tortoises & scorpions or other faunal species on site which are perceived as dangerous/threatening and/or on cultural superstition	Direct	Local	-ve	Short-term	Irreversible	Cumulative
BE 3	Wildlife disturbance and habitat loss	Decommissioning activities disturb mammal, nesting birds (e.g. grass nesting species) and amphibian habitat	Direct	Local	-ve	Short-term	Reversible	Cumulative
BE 4	Wildlife movement disturbance	Decommissioning of lodge blocks off animal paths, such as regular paths used by elephant and buffalo to grazing areas and water sources at site	Indirect	Local	-ve	Long-term	Irreversible	Non-cumulative
BE 5	Wildlife problem animals	Inadequate solid waste containers and/or storage results in scavenging animals gaining access to the lodges waste refuse site	Direct	Local	-ve	Short-term	Reversible	Cumulative
BE 6	Wildlife mortality	Use of pesticides during the decommissioning phase	Direct	Local	-ve	Long-term	Irreversible	Non-cumulative
BE 7	Vegetation destruction	Vegetation destruction during decommissioning activity	Direct	Local	-ve	Long-term	Irreversible	Non-cumulative
BE 8	Vegetation: Introduction of invasive species	Exposure of the soil results in alien species encroachment/establishment at the lodge site	Direct	Local	-ve	Long-term	Reversible	Cumulative
BE 10	Vegetation change in species composition	Change in habitat composition affects nutrient cycling (i.e. removal of dead wood and thus, organic matter) and species composition	Direct	Local	-ve	Long-term	Irreversible	Cumulative
BE 11	Fire risk to habitat and wildlife	Accidental start of fire by equipment; cigarettes, staff and camp fires	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
BE 12	Proximity to Nkasa Lupala National Park	Tourists visiting the National Park due to the presence of the lodge	Direct	Local	+ve	Long-term	Reversible	Cumulative
BE 13	Wildlife monitoring	Monitoring and feedback to the park wardens will no longer occur.	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
SC 1	Proximity of Trophy Hunting Lodge	Rifle shots in proximity to the lodge site; possible presence of a wounded animal (e.g. buffalo) close to camp; possible death to staff during the decommissioning phase	Direct	International	-ve	Long-term	Irreversible	Cumulative

SC 2	Health & Safety: Dangerous game	Presence of grazing hippos, old mature buffalo bulls and hunting, scavenging and/or predators in proximity to the lodge site during decommissioning exposes staff to dangerous animals	Direct	International	-ve	Long-term	Irreversible	Cumulative
SC 3	Health & Safety: water quality (drinking water)	Poor quality of water in the channel close by	Indirect	Local	-ve	Short-term	Reversible	Cumulative
SC 4	Health & Safety: Transmission of HIV	Transmission between staff deconstruction staff workers	Direct	Regional	-ve	Long-term	Irreversible	Cumulative
SC 5	Health & Safety: Lodge accidents	Accident during decommissioning activities	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
SC 6	Health & Safety: Environmental conditions	High temperatures cause heat exhaustion among contract staff	Indirect	Local	-ve	Short-term	Reversible	Non-cumulative
SC 7	Health & Safety: Malaria area	Staff are exposed to malaria area	Indirect	Local	-ve	Short-term	Irreversible	Cumulative
SC 8	Health & Safety: Lack of communication	Lack of communication regarding lodge and environmental hazards- no swimming in the channels - presence of crocodiles and hippos	Indirect	Local	-ve	Long-term	Irreversible	Non-cumulative
SC 9	Health & Safety: Noise disturbance	The use of a generator on site during decommissioning; use of drills etc.	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
SC 10	Visual impact	Decommissioning activity close to the park boundary, such as heavy vehicle movements with loaded equipment.	Direct	Local	-ve	Short-term	Reversible	Non-cumulative
SC 11	Loss of archaeological artefacts	Decommissioning activity damages archaeological artefacts	Direct	International	-ve	Long-term	Irreversible	Non-cumulative
SC 12	Community attitude	Decommissioning activity has consequential impact on surrounding community attitude, which may be resentment if the lodge is no longer operating; lack of benefits e.g. no lodge employment	Indirect	Local	-ve	Short-term	Reversible	Cumulative
SC 13	Community: Employment opportunities	Decrease in work opportunities due to the lodge deconstruction.	Direct	Local	-ve	Long-term	Irreversible	Cumulative

SC 14	Tourism diversity	Development decreases tourism diversity in the Caprivi region. No longer has tourism lodged to send clients to, in order to easily access the park.	Direct	International	-ve	Short-term	Reversible	Cumulative
SC 15	International/ National/local marketing	No more marketing of the lodge, which affects the surrounding communities.	Indirect	International	-ve	Long-term	Reversible	Cumulative
SC 16	Community based tourism projects	There is no opportunity for community run projects to continue (e.g. traditional restaurant, cultural, musical festivals, handmade crafts) once the lodge is no longer in operation. .	Direct	National	-ve	Long-term	Reversible	Cumulative
SC 17	Community: Educational facilities	Community no longer has access to study materials, kindergarten and educational upliftment.	Direct	International	-ve	Long-term	Irreversible	Cumulative
SC 18	Lack of project ownership	Lack of leadership, ownership and accountability of local trade and business.	Direct	Local	-ve	Short-term	Reversible	Cumulative
SC 19	Accessibility to the lodge site	Lack of good roads for tourists and self-drives	Direct	Regional	-ve	Short-term	Reversible	Non-cumulative
SC 20	Wilderness experience without man-made features	The lodge is no longer available.	Direct	International	-ve	Long-term	Reversible	Cumulative
SC 21	Tourism marketing in the area by the lodge	Tourism decreases in the Caprivi region and the Sangwali community is supported	Direct	International	-ve	Long-term	Reversible	Cumulative
EO 1	Financial cost of decommissioning	The investment loses its value	Direct	National	- ve	Short-term	Irreversible	Cumulative
EO 2	Community skills base increases	Local community members are no longer trained.	Direct	National	-ve	Long-term	Irreversible	Cumulative
EO 3	Financial impact of visitors to the Sangwali area	Lodge decommissioning affects visitor numbers to Sangwali area.	Indirect	National	-ve	Long-term	Reversible	Cumulative
EO 4	Employment increase	Deconstruction staff hired from local area. Locally employed lodge staff	Direct	Local	+ve	Short-term	Reversible	Cumulative
EO 5	Loss of potential revenue and local	Decreased business/employment for local trade	Indirect	Regional	-ve	Short-term	Irreversible	Cumulative

	trading opportunities							
EO 6	Increase in crime due to wealthy resource	Decrease in infrastructure, tourists and facilities attract criminals.	Direct	National	-ve	Long-term	Reversible	Cumulative
EO 7	Government revenue	Decrease in revenue through taxation of lodge.	Indirect	National	-ve	Short-term	Irreversible	Cumulative

Table 13: Nkasa Lupala Tented Lodge proposed development Impact Analysis

Physical and chemical components (PC)

Components		ES	RB	A1	A2	B1	B2	B3
PC1	Ground Water Pollution	-36	-D	2	-2	3	3	3
PC2	Damage to the access road and park boundary	-28	-C	2	-2	2	2	3
PC3	Soil contamination	-42	-D	2	-3	2	2	3
PC4	Soil compaction	-36	-D	2	-2	3	3	3
PC5	Solid Waste Pollution	-54	-D	2	-3	3	3	3
PC6	Soil Erosion	-36	-D	2	-2	3	3	3
PC7	Water Loss	-24	-C	2	-2	2	2	2
PC8	Visual Pollution	-14	-B	1	-2	2	3	2
PC9	Noise Pollution	-14	-B	1	-2	2	3	2
PC10	Air Pollution	-12	-B	1	-2	2	2	2
PC11	Water Monitoring	48	D	2	3	3	2	3

Biological and ecological components (BE)

Components		ES	RB	A1	A2	B1	B2	B3
BE1	Use of natural resources	-36	-D	2	-2	3	3	3
BE2	Illegal Poaching	-81	-E	3	-3	3	3	3
BE3	Wildlife disturbance and habitat loss	-32	-C	2	-2	3	3	2
BE4	Wildlife movement disturbance	-32	-C	2	-2	3	3	2
BE5	Wildlife problem animals	-36	-D	2	-2	3	3	3
BE6	Wildlife mortality	-54	-D	3	-2	3	3	3
BE7	Vegetation destruction	-14	-B	1	-2	2	2	3
BE8	Vegetation: Introduction of invasive species	-28	-C	2	-2	2	2	3
BE9	Trampling and clearing of grass	-18	-B	1	-2	3	3	3
BE10	Vegetation: Change in species composition	-14	-B	1	-2	2	2	3
BE11	Fire risk to habitat and wildlife	-63	-D	3	-3	2	3	2
BE12	Proximity to Nkasa Lupala National Park	84	E	4	3	2	2	3
BE13	Wildlife monitoring	63	D	3	3	2	2	3

Sociological and cultural components (SC)

Components		ES	RB	A1	A2	B1	B2	B3
SC1	Proximity of Trophy Hunting Lodge	-84	-E	4	-3	2	2	3
SC2	Dangerous game	-54	-D	2	-3	3	3	3
SC3	Water Quality	-42	-D	2	-3	2	2	3
SC4	Transmission of HIV	-108	-E	4	-3	3	3	3
SC5	Construction Accidents	-12	-B	1	-2	2	2	2
SC6	Environmental Conditions	-6	-A	1	-1	2	2	2
SC7	Malaria area	-28	-C	4	-1	2	2	3
SC8	Lack of communication	-24	-C	1	-3	2	3	3
SC9	Noise disturbance	-12	-B	2	-1	2	2	2
SC10	Visual impact	-12	-B	2	-1	2	2	2
SC11	Loss of archaeological artefacts	-24	-C	3	-1	3	3	2
SC12	Community Attitude	-42	-D	2	-3	2	2	3
SC13	Community Employment Benefits	63	D	3	3	2	2	3
SC14	Tourism Diversity	84	E	4	3	2	2	3
SC15	International/National/Local appreciation	84	E	4	3	2	2	3
SC16	Community Based Tourism Projects	63	D	3	3	2	2	3
SC17	Community: Educational Facilities	63	D	3	3	2	2	3
SC18	Lack of Project Ownership	-54	-D	3	-3	2	2	2
SC19	Lack of Transparency	-54	-D	2	-3	3	3	3
SC20	Competition: Hunting Lodge and Tourism lodge	-84	-E	4	-3	2	2	3
SC21	Failure of external donor	-108	-E	4	-3	3	3	3
SC22	Contract: Conservancy	-84	-E	4	-3	2	2	3
SC23	Contract: Tourism Operator	-42	-D	2	-3	2	2	3
SC24	Accessibility to the lodge site	-24	-C	2	-2	2	2	2
SC25	Wilderness Experience	54	D	3	3	2	2	2
SC26	Tourism Marketing	84	E	4	3	2	2	3

Economical and operational components (EO)

Components		ES	RB	A1	A2	B1	B2	B3
EO1	Financial cost of construction	-14	-B	1	-2	2	2	3
EO2	Community skills base increases	81	E	3	3	3	3	3
EO3	Financial impact of visitors to Sangwali community	54	D	3	3	2	2	2
EO4	Employment Increase	42	D	2	3	2	2	3
EO5	Revenue to local trade	81	E	3	3	3	3	3
EO6	Increase in crime due to a wealthy resource	-84	-E	4	-3	2	2	3
EO7	Government Revenue	84	E	4	3	2	2	3

Summary of scores

Range	-108	-71	-35	-18	-9	0	1	10	19	36	72
	-72	-36	-19	-10	-1	0	9	18	35	71	108
Class	-E	-D	-C	-B	-A	N	A	B	C	D	E
PC	0	5	2	3	0	0	0	0	0	1	0
BE	1	4	3	3	0	0	0	0	0	1	1
SC	5	6	4	3	1	0	0	0	0	4	3
EO	1	0	0	1	0	0	0	0	0	2	3
Total	7	15	9	10	1	0	0	0	0	8	7

This analysis helps the consultant to distinguish the most significant impacts identified during the development of the tented lodge.

In the physical and chemical category the most significant impacts were **solid waste pollution, soil contamination, erosion, compaction** and **ground water pollution**. The solid waste pollution is linked to the potential leachate permeating into the surrounding soils through possible inefficient waste disposal structures on site. This includes leakages of a liquid nature. This impact is also attributed to the fact that frequently waste disposal sites are neglected at lodges, which results in the waste site attracting wildlife problem animals. Moderate impacts associated with the development are **damage to the access roads and park boundary** and **water loss**, which are associated with the construction phase of the development. The only positive impact relating to the physical and chemical category is that the **water quality** in the nearby water channels of the lodge site will be monitored.

In the biological and ecological category the most significant negative impacts were **illegal poaching** and the **fire risk to habitat and wildlife**. Illegal poaching is likely to occur during the construction, whereby the workers indiscriminately kill species (e.g. snakes, scorpions etc) during the development because these species are perceived as dangerous/threatening and/or are held in cultural superstition. Fire is a hazard posed during the development through the presence of staff cooking fires during the construction, as well as during the operational phase where fires are regularly used to create an atmosphere in a lodge. Further to this, fires that are lit at bush breakfasts and dinners pose a risk to potential larger run-away fires if precautionary measures are not taken to exterminate them prior to departure back to the lodge. The moderate impacts identified during the impact assessment were: **use of local natural resources, wildlife disturbance and habitat loss, movement disturbance** and **wildlife mortality**. The presence of the lodge in proximity to a water channel will marginally limit animal movement through the area, due to the fact that the lodge extent is small and because the lodge is situated in a swamp area with an abundance of water in the area available to wildlife. The lodge will inevitably result in habitat loss, specifically regards to grass and shrub removal (e.g. nesting birds, and rodent nests) at the

location of the tents. This impact is pertinent to the northern perimeter of the lodge site, with the presence of aquatic plants (e.g. *Cyperus* spp) that form important breeding and nesting sites for birds and amphibians. Further to this, the large trees at this location form important nesting sites for raptor species. The construction contractor must make every effort to avoid removing vegetation in this locale at the development site. The removal of alien invasive vegetation (*L.camara*) will show environmental commitment to the project area intended to be developed. The positive impacts associated with the ecological/biological category are based on lodge activities that will involve wildlife monitoring of the Wuparo Conservancy and Nkasa Lupala National park, which should result more of a presence in an area where illegal poaching has been identified as a regular occurrence.

The socio-cultural impacts revolve predominantly around the effect of developing a lodge in an area where there is an absence of tourism infrastructure and associated benefits to the surrounding community. There were several positive impacts associated with this: **employment benefits, educational facilities, tourism diversity and marketing, community based tourism projects**; the extension of the Caprivi region into an **international, national and local tourism** domain due to the advertising required to market the lodge in this wilderness region, which provides an experience for the majority of visiting tourists who live in cities.

The most significant negative socio –cultural impacts of this project are related to the **proximity of a trophy hunting lodge** and the potential failure of **transparency and trust** that is currently evident between the lodge investor and the Wuparo Conservancy members. On this basis, if either party involved in the joint venture should **dishonour the contract**, it will result in a significant negative impact. This concern also involves the external funding agency, MCA. Frequently, donor agencies' funding does not materialise, which ultimately leaves the communities involved disappointed. This was identified as an impact that may be significant. Further to this, MCA funding is subject to restringing requirements and the funding allocation is dependent upon the success of the grant application by the Wuparo Conservancy.

Further to this, one negative aspect that was identified is that the Wuparo Conservancy community may not be satisfied with the lodge benefits (e.g. employment opportunities), when compared to the trophy hunting benefits which the community receives. The proximity of the trophy hunting lodge is a significant impact due to the safety issue surrounding the use of rifles on selected trophy animals and the presence of a tourism operator utilizing the same area for traversing for game viewing opportunities. Further to this, the lodge will have audio of gun shots in the surrounding area.

The presence of dangerous game (e.g. hippos) is a health and safety issue. The water quality is a potential safety issue due to the fact that drinking water will be abstracted from the surrounding water channels, although measures will be put in place to test the quality (i.e. purification). On the positive side, the water quality will be monitored specifically to cater for the guest and staff use.

Positive impacts associated with the *economical and operational* category were associated with the ***financial*** and ***employment*** benefits. The only negative impact identified was the potential for ***crime to increase due to the presence of a wealthy resource*** and the ***financial cost of the construction*** of the lodge and additional costs incurred to the lodge investor.

The impact histogram (Figure 30) show that the most significant impacts are within the *socio-cultural* category, followed by the *economical and operational, biological and ecological*, and lastly by the *physical and chemical*.

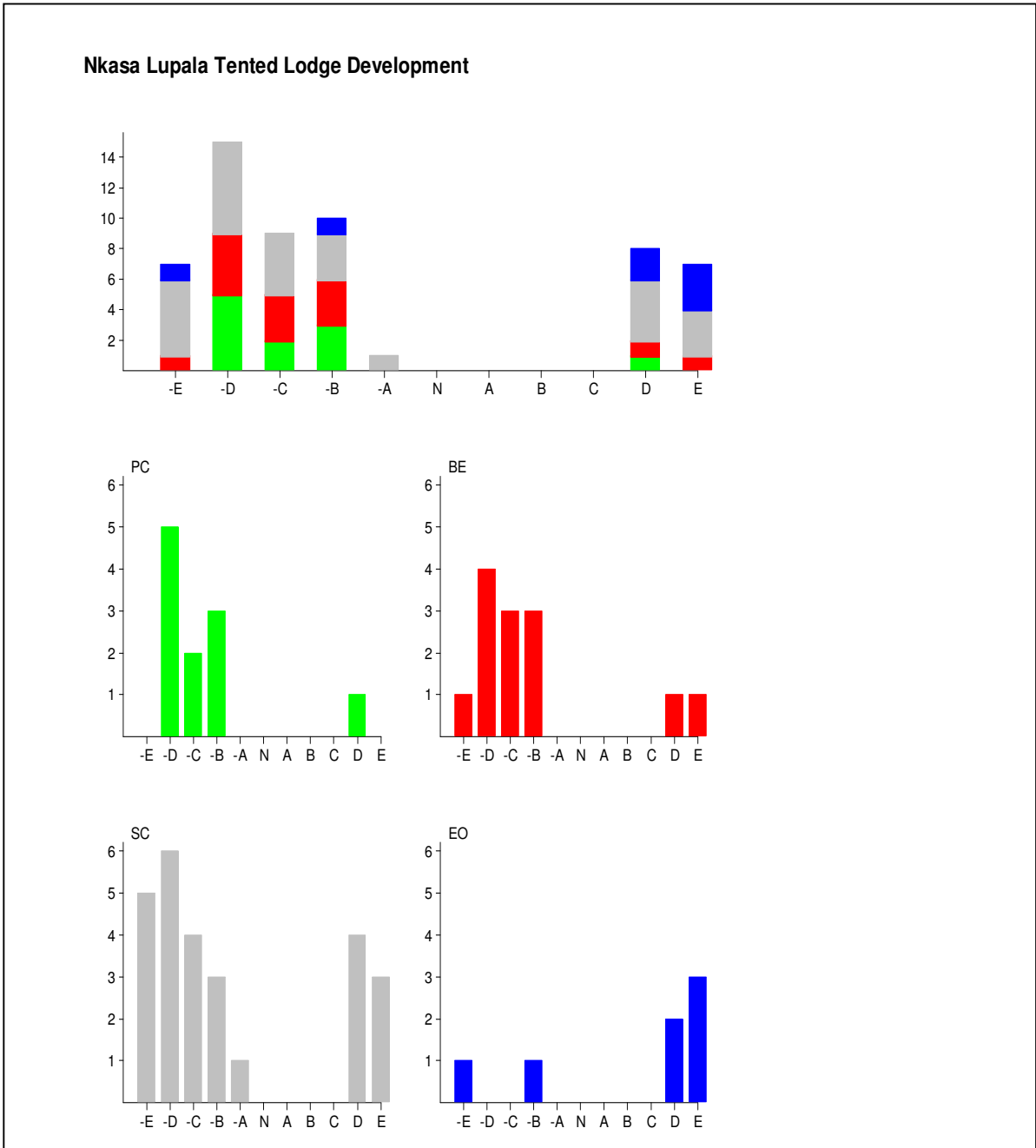


Figure 30: Impact histogram for the Nkasa Lupala Tented Lodge Development.

Impact codes: PC: Physical- Chemical/ BE (green) – Biological-Ecological (red); SC- Socio-Cultural (grey); EO – Economical- Operational (blue)

Table 14: No-Action Alternative Impact Analysis

Physical and chemical components (PC)

Components		ES	RB	A1	A2	B1	B2	B3
PC1	Ground water pollution	0	N	0	0	1	1	1
PC2	Damage to access road	0	N	0	0	1	1	1
PC3	Soil contamination	0	N	0	0	1	1	1
PC4	Soil compaction	0	N	0	0	1	1	1
PC5	Solid waste pollution	0	N	0	0	1	1	1
PC6	Soil erosion	0	N	0	0	1	1	1
PC7	Water loss	0	N	0	0	1	1	1
PC8	Visual pollution	0	N	0	0	1	1	1
PC9	Noise pollution	0	N	0	0	1	1	1
PC10	Air pollution	0	N	0	0	1	1	1

Biological and ecological components (BE)

Components		ES	RB	A1	A2	B1	B2	B3
BE1	Use of natural resource	0	N	0	0	1	1	1
BE2	Illegal poaching	-81	-E	3	-3	3	3	3
BE3	Wildlife disturbance and habitat loss	0	N	0	0	1	1	1
BE4	Wildlife movement disturbance	0	N	0	0	1	1	1
BE5	Wildlife problem animals	0	N	0	0	1	1	1
BE6	Wildlife mortality	0	N	0	0	1	1	1
BE7	Vegetation destruction	0	N	0	0	1	1	1
BE8	Vegetation Introduction of invasive species	0	N	0	0	1	1	1
BE9	Trampling and clearing grass	0	N	0	0	1	1	1
BE10	Vegetation: Change in species composition	0	N	0	0	1	1	1
BE11	Fire risk to habitat and wildlife	0	N	0	0	1	1	1
BE12	Proximity to Nkasa Lupala National Park	0	N	0	0	1	1	1
BE13	Wildlife Monitoring	-27	-C	3	-3	1	1	1

Sociological and cultural components (SC)

Components		ES	RB	A1	A2	B1	B2	B3
SC1	Proximity to Trophy Hunting Lodge	0	N	0	0	1	1	1
SC2	Dangerous game	0	N	0	0	1	1	1
SC3	Water Quality	0	N	0	0	1	1	1
SC4	Transmission of HIV	-108	-E	4	-3	3	3	3
SC5	Construction incidents	0	N	0	0	1	1	1
SC6	Environmental conditions	0	N	0	0	1	1	1
SC7	Malaria area	-108	-E	4	-3	3	3	3
SC8	Lack of communication	0	N	0	0	1	1	1
SC9	Noise disturbance	0	N	0	0	1	1	1
SC10	Visual impact	0	N	0	0	1	1	1
SC11	Loss of archaeological artefacts	0	N	0	0	1	1	1
SC12	Community attitude	0	N	0	0	1	1	1
SC13	Community: Employment benefits	-63	-D	3	-3	2	2	3
SC14	Tourism diversity	-54	-D	3	-3	2	2	2
SC15	International/National/Local	-54	-D	3	-3	2	2	2
SC16	Community Based Tourism Projects	-45	-D	3	-3	2	2	1
SC17	Community: Educational projects	-45	-D	3	-3	2	2	1
SC18	Lack of project ownership	0	N	0	0	1	1	1
SC19	Lack of transparency	0	N	0	0	1	1	1
SC20	Competition between trophy hunting lodge and tour operator	0	N	0	0	1	1	1
SC21	Failure of external agency	0	N	0	0	1	1	1
SC22	Contract: Conservancy	0	N	0	0	1	1	1
SC23	Contract: Tour Operator	0	N	0	0	1	1	1
SC24	Accessibility to the site	0	N	3	0	1	1	1
SC25	Wilderness experience	0	N	0	0	1	1	1
SC26	Tourism marketing	-60	-D	4	-3	2	2	1

Economical and operational components (EO)

Components		ES	RB	A1	A2	B1	B2	B3
EO1	Financial cost of construction	0	N	0	0	1	1	1
EO2	Community based skills increase	-60	-D	4	-3	2	2	1
EO3	Financial impact of visitors to Sangwali area	-60	-D	4	-3	2	2	1
EO4	Employment increase	-84	-E	4	-3	2	2	3
EO5	Revenue to local trade	-60	-D	4	-3	2	2	1
EO6	Increase in crime due to wealthy resource	0	N	0	0	1	1	1
EO7	Government revenue	0	N	0	0	1	1	1

Summary of scores

Range	-108	-71	-35	-18	-9	0	1	10	19	36	72
	-72	-36	-19	-10	-1	0	9	18	35	71	108
Class	-E	-D	-C	-B	-A	N	A	B	C	D	E
PC	0	0	0	0	0	10	0	0	0	0	0
BE	1	0	1	0	0	11	0	0	0	0	0
SC	2	6	0	0	0	18	0	0	0	0	0
EO	1	3	0	0	0	3	0	0	0	0	0
Total	4	9	1	0	0	42	0	0	0	0	0

The No-Action Alternative has obviously far fewer detrimental impacts than the lodge development option. Irrespective of the development taking place, *illegal poaching (ecological- biological)* and the *transmission of HIV* and the prevalence of *malaria* is inevitable in the surrounding communities. In the absence of the development no *wildlife monitoring* will taken place in the conservancy and/or in Nkasa Lupala National Park. There are a number of dis-benefits to the *socio-cultural* category if the lodge is not developed and these include the absence of *tourism marketing and diversity, community based projects, employment, and educational facilities*. The *economical and operational* impacts of not developing the lodge are clear (Table 14). The **loss of potential revenue to local trade opportunities, employment**, other **financial** impacts and the absence of **community based skills** is of significant importance, considering the need for development and income in Wuparo Conservancy.

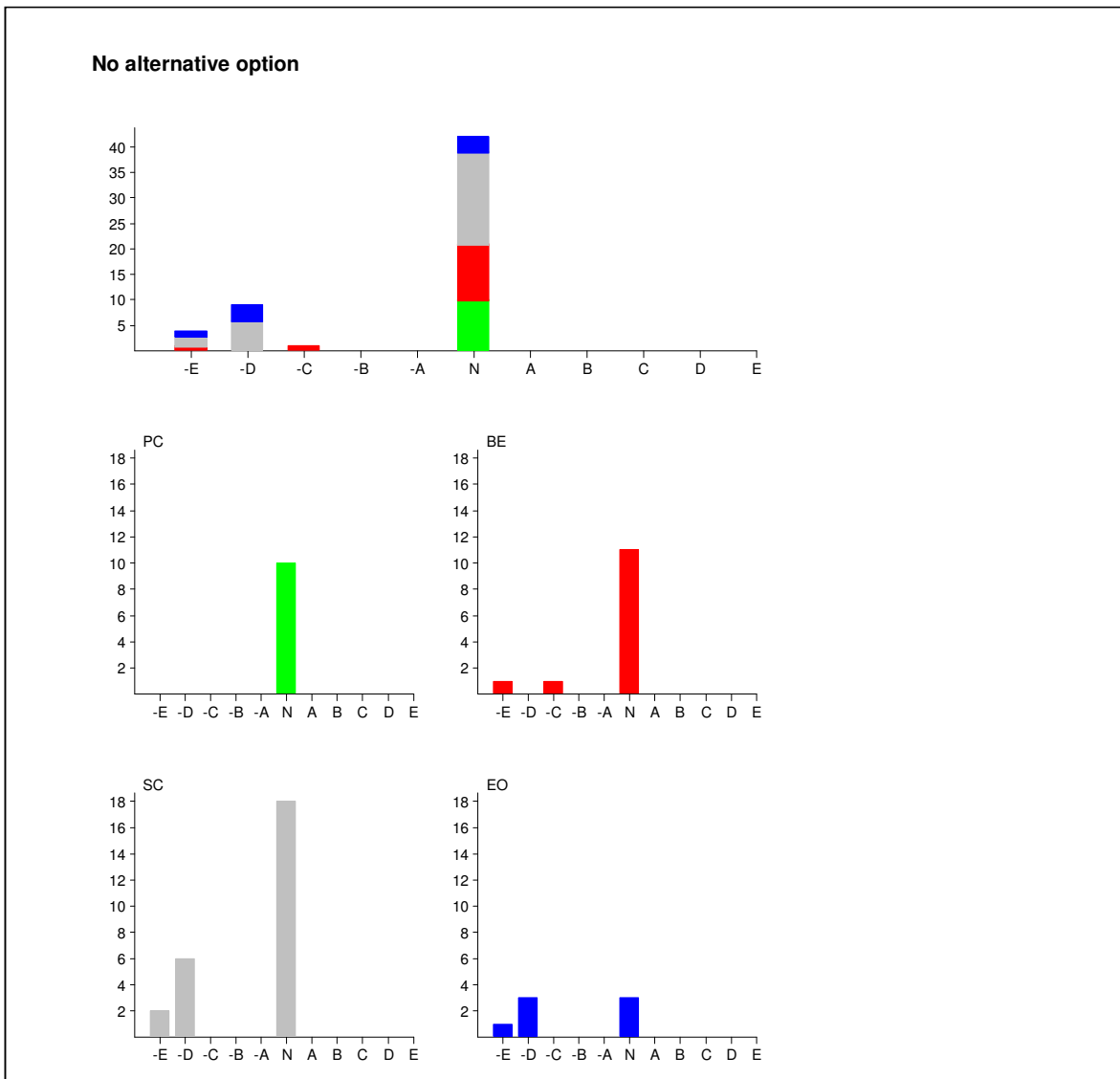


Figure 31: Impact histogram for the No-Action Alternative option

Impact codes: PC: Physical- Chemical (green)/ BE – Biological-Ecological (red); SC- Socio-Cultural (grey); EO – Economic- Operational (blue).

The option summary histogram (Figure 32) show that there are more positive **socio-cultural** and **economical** and **operational** impacts associated with the lodge development than with the No-Action Alternative.

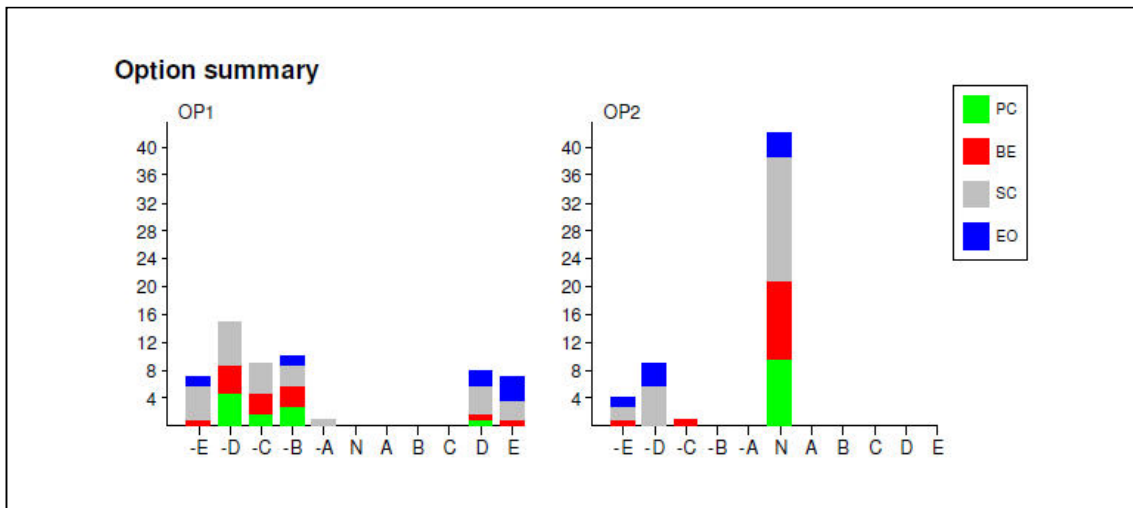


Figure 32: Option Summary Histogram: Comparison of development activities at the proposed site Vs the No-Action Alternative (OP1 – Nkasa Lupala Tented Lodge Development; OP2 – No Action Alternative).

10 CONCLUSION

The proposed Nkasa Lupala Tented Lodge has potential and contains positive impacts linked with the outcome of the benefits for the lodge proponent and the Wuparo Conservancy. This EIA revealed that the positive impacts when compared to the No-Action Alternative largely benefit the **social - cultural** and **economical - operational** aspects of the Wuparo Conservancy. The proximity of Caprivi Hunting Safaris cc as the hunting operator poses a significant negative impact and a potential hazard to the development. Besides the presence of a hunting lodge in proximity to the lodge site, there were no major significant negative impacts associated with the development.

It is concluded that the Nkasa Lupala Tented Lodge development may proceed with the proviso that the identified impacts be addressed and properly mitigated and all specialist recommendations implemented.

11 RECOMMENDATIONS

1. The Nkasa Lupala Tented lodge is granted the appropriate approval to develop the proposed lodge in the Wuparo Conservancy, at their proposed site.
2. Sensitive zones (e.g. northern perimeter) identified in the biophysical assessment be avoided during the construction phase of the project. The identified zones should be incorporated into the development, but remain protected and preserved.
3. The development is undertaken in a sensitive way that enhances the natural landscape that considers the visual impact and benefits the natural vegetation provided by the setting in proximity to the water channels and surrounding swamps.

4. Environmental guidelines, green building designs and regulations in consideration of environmentally sustainable design principles are applied to the layout plans of the development (e.g. solar panels, recycling bins, and rainwater tanks etc.).
5. NLTL must abide by all Namibia's Acts, Bills and Policies in this EIA report during the construction, operational and decommissioning phases of the lodge.
6. The designated roles and responsibilities of the EMP are required to be adhered to by all responsible parties.
7. All monitoring protocols suggested in the EMP report be implemented and shared with the Wuparo Conservancy Office and park staff.

ACKNOWLEDGEMENTS

I am grateful to the Wuparo Conservancy park wardens, namely, Maketo Aldrin, Sitali Ravens, Mmzamai Daglas, and Mashazi Brutus as well as Hans Mafiti Fwelimba for providing protection and a watchful eye on the surrounds for dangerous wildlife during the biophysical assessment transects. I thank the Sangwali Community members for the welcome reception in the community, their strong interest and responsive interaction with regards to the answering the questions during the interview during the Social – Cultural Assessment. Appreciation is extended to the Micheletti family for the warm hospitality provided in the field. Lastly, I would like to thank the staff of Namib Hydrosearch cc for their support and assistance throughout the project.



Figure 33: The Wuparo Conservancy Wardens.

REFERENCES

- Bethune, S. & Dr Ruppel, O. 2007 'Review of policy and legislative support to the sustainable use of wetlands in the Zambezi basin'. Wetlands Working Group of Namibia. Windhoek Namibia
- Brown, C.J. & Jones, B.T.B. 1994.' *Results of a socio-ecological survey of the west Caprivi Strip, Namibia: a strategic community-based environment and development plan*'. Directorate of Environmental Affairs, Windhoek, Namibia.
- Chittenden H, 2007, '*Roberts Bird Guide*', John Voelcker Bird Book Fund, Cape Town
- Cunningham P, 2010, '*Bio-Physical Issues: Vertebrate fauna and flora observed at portion 1 goreangab in the Windhoek Area*' Environment & Wildlife Consultancy, Namibia.
- Curtis, B. & Louw, C. 2009. '*Biodiversity Inventory of Windhoek: Specialist Contributions Report: BIRDS*', City of Windhoek (CoW). EnvrioDynamics.
- Curtis, B. & Mannheimer M, 2005. '*Tree Atlas of Namibia. National Botanical Research Institute*', Windhoek, Namibia.
- CITES 2009, <http://www.cites.org/> (Visited: 08/04/2011)
- de Wet F & Gaedke J, Hammer M (editor) & Schuette P. 2009, '*Expedition Report, Expedition dates: 7 September – 21 November 2008, Anthropogenic impacts on large-carnivore populations (lion, leopard, hyaena, cheetah and wild dog) in north-eastern Namibia: investigating human-predator coexistence on conservancy managed land*' Wildlife and Community Development Fund (WCDF) & Biosphere expeditions, Windhoek, Namib
- Fowler, J. Cohen, L & Jarvis. P. 2003. '*Practical Statistics for Field Biology. (2nd Ed)*'. John Wiley & Sons, U.K.
- GEF Small Grants Programme, 2006.
<http://sgp.undp.org/index.cfm?module=ActiveWeb&page=Articles&CategoryID=389&StartRow=51&MaxRows=10>, (Visited: 08/04/2011)
- Gibbon, 2006, '*Roberts Birds Online*', <http://www.robertsbirds.co.za/robertsoline.htm> (Accessed: April 2011)
- Grobler M, Tagg J, Rodwell TC, 1995. '*Wildlife Resources in the Caprivi, Namibia: The Results of an Aerial Census in 1994 and Comparisons with Past Surveys*', Ministry of Environment and Tourism. Windhoek, Namibia
- Groombridge & Jenkins, Ed. 1994. '*Biodiversity Data Sourcebook. Compiled by the World Conservation Monitoring Centre. World Conservation Press*', Cambridge, UK.
- Graham Alexander & Johan Marais. 2007. '*A Guide to the Reptiles of Southern Africa*' Struik Nature, Cape Town.

Griffin M, 1998b 'Amphibian diversity. In: Barnard, P. (ed.). *Biological diversity in Namibia: a country study*. Windhoek: Namibian National Biodiversity Task Force.

Griffin, M. 2003. 'Annotated checklist and provisional national conservation status of Namibian reptiles'. Ministry of Environment and Tourism, Windhoek.

Google Maps 2011, <http://maps.google.com/> (Visited: April 2011)

Hockey, P.A.R., Dean, W.R.J & Ryan, P.G., eds, 2005. 'Roberts – Birds of Southern Africa'. Cape Town: John Voelcker Bird Book Fund.

IUCN – Red List Database, 2010 <http://www.iucnredlist.org/about> (Visited: 07/04/2011)

Brian T, Jones B, Mendelsohn J, Humphrey E, Nott C. 2009. 'Pre-feasibility Study for Evaluating the Potential for Diversified Land Uses, including Wildlife in the Shامbyu and Gciriku Small-Scale Commercial Farms in Kavango Region', Windhoek, Namibia.

Mannheimer, C A & Curtis BA. (eds) 2009, 'Le Roux & Muller's Field Guide to the Trees and Shrubs of Namibia'. Windhoek: Macmillan Education Namibia.

Massyn P, Humphrey E, Everett M & Wassenaar T. 2009, 'Tourism Development Plan, Bwabwata, Mudumu & Mamili National Parks' Caprivi Parks Consultants, Windhoek, Namibia.

Mendelsohn, J. & Roberts, C. 1997. 'An Environmental Profile and Atlas of the Caprivi'. MacMillian Publishers, Windhoek.

Muller, M.A.N. 2007. 'Grasses of Namibia'. Ministry of Agriculture, Forestry and Water, Windhoek, Namibia.

Namibian Ministry of Environment and Tourism, 2001. 'Namibia Population and Housing Census'. MET, National Planning Commission, Namibia.

Ministry of Environment and Tourism, 2007, 'Environmental Management Act, Act No. 2007', Windhoek, Namibia.

Ministry of Mines and Energy, 2008. 'Geological Survey: The Geology of Namibia Vol 3, to Cenozoic. R. McG. Miller', Namibia.

Mendelsohn J and Roberts C, 1998. 'An Environmental Profile and Atlas of Caprivi'. NB Map of Eastern Caprivi showing fault lines, locations of villages and boreholes figure 24.24, p24-34. Gamsberg Macmillan Publishers, Windhoek.

Mendelsohn J. 2007, 'A digest of information on key aspects of Caprivi's geography', Windhoek, Namibia.

Micheletti S. 2011, Location Maps.

Murphy C, Caprivi Senior Management Forum (2006), 'Integrated Rural Development and Nature Conservation. WWF Project Technical Progress Report, Caprivi. Achieving

Sustainability: Conservancy Based Natural Resource Management Programme – North East and North West Namibia IRDNC, Namibia

Namibian Ministry of Environment and Tourism. 2010. *'Namibia's Draft Fourth National Report to the United Nations Convention on Biological Diversity'*, (UNCBD).

Pastakia C. 1998, *'The Rapid Impact Assessment Matrix (RIAM) – A New Tool for Environmental Impact Assessment'*, Horsholm, Denmark.

Sarma 2011, Namib Hydrosearch cc, Geological Maps.

Schlettwein, C.H.G., Simmons, R.E., MacDonald, A. & Grobler, H.J.W. 1991. *'Flora, fauna and conservation of East Caprivi wetlands'*. Madoqua 17: 67-76.

Simmons RE, Boix-Hinzen C, Barnes KN, Jarvis Am & Robertson A. 2001. Namibia. In: Fishpool LDC & Evans MI (eds.) *'Important Bird Areas in Africa and associated islands'*. Pp 639-660. Birdlife International, Cambridge, UK

Simmons, R.E., Griffin, M. Griffin, R.E., Marias, E. & Kolberg, H. 1998. *'Endemism in Namibia: patterns, processes and predictions.'* Specialist scientists: Ministry of Tourism and Environment.

Simmons R E & Brown C J. 2006, *'Birds to watch in Namibia: Red, rare and endemic species'*, National Biodiversity programme, Ministry of Environment and Tourism, Namibia Nature Foundation, Namibia.

Simmons R E, Brown C J, Griffin M. 1991, *'Madoqua – The status and conservation of wetlands in Namibia. Vol.17 No.2'*, Namibia

Rodwell T. C, Tagg J, Grobler M. 1995, *'Wildlife Resources in the Caprivi, Namibia: The Results of an Aerial Census in 1994 and Comparisons with Past Surveys'*. Windhoek, Namibia.

Turpie J., Barnes J., de Longcamp M., and Paxton M. 2010b, *'Sustainable Financing Plan for Namibia's Protected Area System'*. Ministry of Environment and Tourism, Directorate of Parks and Wildlife Management, Windhoek, Namibia.

Turpie J., Barnes J., de Longcamp M., and Martin R. (2010a) *The Economic Value of Namibia's Protected Area System: A Case for Increased Investment*. Ministry of Environment and Tourism, Directorate of Parks and Wildlife Management, Windhoek, Namibia.

Timberlake, J.R. & Childes, S.L. 2004. *'Biodiversity of the Four Corners Area: Technical Reviews Volume Two'*, (Chapters 5-15). Occasional Publications in Biodiversity No 15, Biodiversity Foundation for Africa, Bulawayo/Zambezi

Van Oudtshoorn, F. 1999. *'Guide to grasses of southern Africa'*. Briza Publications, Pretoria, South Africa.

Veterinary Services Annual Report 1969/70, Namibia.

National Herbarium of Namibia (WIND). 2011. SPMNDB Database. National Herbarium of Namibia (WIND), National Botanical Research Institute, MAWF, Windhoek, Namibia.

APPENDIX A – PUBLIC PARTICIPTION

11.1 Newspaper Publications (¹New Era, ²The Caprivi Vision)

1

 <p>NOTICE OF PUBLIC MEETING ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED NKASA LUPALA TENTED LODGE DEVELOPMENT</p> <p>Gafil cc proposes to develop Nkasa Lupala Tented Lodge within the Wuparo Conservancy in the Caprivi Region of Namibia.</p> <p>Gafil cc appointed Namib Hydrosearch cc to undertake an Environmental Impact Assessment (EIA) and the preparation of an Environmental Management Plan (EMP) for the proposed development as per the requirements of the Environmental Management Act (EMA) of 2007 and Namibia's Environmental Policy (1995).</p>  <p>As part of the EIA requirements all Interested and Affected Parties are invited to:</p> <ul style="list-style-type: none"> • Register with the contact below before the 23rd March 2011. • Attend the public meeting to be held on Thursday the 24th March 2011 at 10h00am at the Conservancy Office in Sangwali Village. <p>For further enquiries please contact Ms. Glynis Humphrey: Tel: +264 61 220 400, Fax: +264 61230 934, email: glynis@geonamibia.com</p>	 <h2>INVITATION</h2> <h3>2011 NAMIBIAN INDEPENDENCE PU IN MEMORY OF PRESIDENT N ASSASSINATED ON 17TH MAR</h3> <p>The Pan African Centre of Namibia (PACON) in con sador of the Republic of Congo to Namibia wish to ir our 2011 Namibian Independence celebrations under "Ngouabi, an African Hero", on the eve of the day he w</p> <p>We remember at this occasion his great deeds and re history because of the un-wavered support and hospi enjoyed in Congo Brazzaville during the dark days of c</p> <p>VENUE: NAMPOWER CONVENTION CENTR</p> <p>WHEN: 17th March 2011</p> <p>TIME: 18H00-21H00</p> <p>SPEAKERS: Association of Friends of Congo to prese tion as experience then.</p> <p>Mr. Bankie Foster Bankie: Autobiography of Commam Hon. Theo-Ben Gurirab, Speaker of Parliament: Cor leadership of marine Ngouabi, from a Pan African pe firmed)</p> <p>Respondent ant: Her Excellency Marie T. AVEMEKA of Congo in Namibia</p> <p>Contact Persons: Maureen Hinda-Mbaziira 081129 and/or Salome Isaacks 061-23</p>
 <p>Shop no. 5 Dreyer Building Sam Nujoma Avenue Walvis Bay, (opposite Kentucky Fried Chicken)</p> <p>Call us at tel: 064 - 200 349 erongo@newera.com.na / festus@newera.com.na www.newera.com.na</p>	



Handing over the Wheel chairs are from left: the Deputy Director of Administration at Caprivi Regional Council Mrs. Namasiku Sukuta, The Caprivi Regional Council Deputy Director for Finance Mr. Collens Muleke, Member of The Caprivi Regional Council Management and Councillor of Sibbinda Constituency Hon. Felix Mukupi, The Matron of Cheshire Home Sister Lucy Mazurkiewicz, Caprivi Regional Governor Hon. Lawrence Alfea Sampofu and Kizito College School Principal Mr. Michael Sibuku.

By Simon

CAPRIVI Regional Governor handed over twenty (20) brand new wheel chairs to children with disabilities at Cheshire Home in Katima Mulilo recently.

The donation was made possible by Namibia Diamond Company (NAMDEB), which donated a tune of NS200,000.00 last year to the centre.

Handing over some the Wheel Chairs Caprivi Governor, Honorable Lawrence Alfea Sampofu thanked NAMDEB for donating funds that were used to purchase the Wheel Chairs that will keep the physically disabled children comfortable when moving and playing around with those facilities.

"I am happy to hear that there are some organisations which are supporting our Children with disabilities, being disabled it doesn't mean that a person cannot do anything but they are just other challenges that are faced by that person," pointed out the Governor.

He alluded that he will be behind the center in every support that is needed to keep the disabled children more comfortable.

Cheshire Home was opened on 15 September 1995 at Roman Catholic Mission, some 3 Kilometers East of Katima Mulilo town with the aim of providing a hostel to the children with disabilities to go to school; the Center is currently

taking care of 30 children from Caprivi and Kavango Regions.

Ms. Jesse Steeghs, a Physiotherapist of Cheshire Home told *Caprivi Vision* that NS35,000.00 of the money that was donated to Cheshire home was given to a 21 year old Girl (Nepanda Bolokota) in Rundu for the replacement of her artificial hip and the other NS 8000 was used to buy a new water pump after the previous one was stolen at Zambezi River.

While NS 90 000 was used to purchase 20 brand new Wheel Chairs and for the transport cost from Durban in South Africa where they were bought. "these chairs have tubeless tires and they are wide that they can move even in sand" lamented Ms. Steeghs.

"After school hours I do physiotherapy with them, to help them to develop physical skills, muscle strengthening exercise, to improve balance, speech exercise and hand exercise to improve their writing and swimming." She further said.

Cheshire home has six staff members from the community who are cooking, cleaning, washing and maintaining the laundry, the Matron is Sister Lucy Mazurkiewicz, Sister Agnes Blasiaka who is a nurse including Sister Jesse Steeghs a physiotherapist.

London Look Fashions

For school uniforms: Skirts, Trousers, Shirts and Blouses and other clothes. We also repair Sewing Machines

We are at Katima Mulilo Open Market Stand no:HWA 6

Contact Mr: Proffecor: 0812991441

BOMAC AUTO ENGINEERING



"For all Star Services"

For all your:

Cylinder head Recondition Centre
Vehicle repair- Light Vehicle to heavy Trucks and Tractors
Panel Beating and Spraying
Painting

We put you back on the Road

General Steel Fabrication

For services and Repairs

24 Breakdown Services

Cell: 0811290832 or 0812902727

Tell: 066- 25 42 51

Fax : 066- 25 31 35

Email: bomac@iway.na

Service Par Excellence

Feed your Brain, Read The Caprivi Vision Newspaper

For News tips call/sms to 0814521647,

or e-mail simoniseli@caprivivision.com



NOTICE OF PUBLIC MEETING ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED NKASA LUPALA TENTED LODGE DEVELOPMENT

Gafil cc proposes to develop Nkasa Lupala Tented Lodge within the Wuparo Conservancy in the Caprivi Region of Namibia.

Gafil cc appointed Namib Hydrosearch cc to undertake an Environmental Impact Assessment (EIA) and the preparation of an Environmental Management Plan (EMP) for the proposed development as per the requirements of the Environmental Management Act (EMA) of 2007 and Namibia's Environmental Policy (1995).




As part of the EIA requirements all Interested and Affected Parties are invited to:

- Register with the contact below before the 23rd March 2011.
- Attend the public meeting to be held on Thursday the 24th March 2011 at 10h00am at the Conservancy Office in Sangwali Village.

For further enquiries please contact Ms. Glynis Humphrey:
Tel: +264 61 220 400, Fax: +264 61230 934, email: glynis@wconamibia.com.

THE NAMIBIAN
INTERNATIONAL
THURSDAY APRIL 7 2011 19



VACANCY

Hartlief, an equal opportunity employer, is looking to fill the following position as soon as possible:

DRIVER

Department: Distribution
Reports to: Distribution Supervisor

Purpose of position:

To ensure transport (via truck, car or motorcycle) of orders to be delivered to and from customers and suppliers daily as per set procedures and policies, as well as admin driving



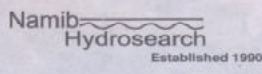
Requirements:

- Valid drivers license-Code A and BE essential
- At least one years experience
- Literate (able to read and write)
- Bilingual (English and Afrikaans)

If you are interested and meet the qualification criteria, please forward your application in confidence to the Director Specialist Services

Application deadline: Friday 15 April 2011

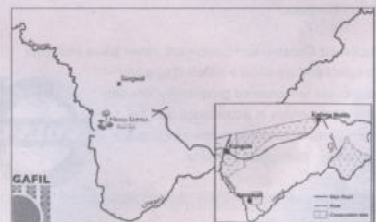
Written applications with detailed CV should be sent to:
HARTLIEF CONTINENTAL MEAT PRODUCTS (PTY) LTD
 P.O. Box 428, Windhoek
 Email: jbruyys@hartlief.com.na • Fax: (061) 261 244
 Only shortlisted candidates will be contacted and no documents will be returned

NOTICE OF SECOND PUBLIC MEETING ENVIRONMENTAL IMPACT ASSESSMENT NKASA LUPALA TENTED LODGE DEVELOPMENT

Gafil cc proposes to develop Nkasa Lupala Tented Lodge within the Wuparo Conservancy in the Caprivi Region of Namibia.

Gafil cc appointed Namib Hydrosearch cc to undertake an Environmental Impact Assessment (EIA) and the preparation of an Environmental Management Plan (EMP) for the proposed development as per the requirements of the Environmental Management Act (EMA) of 2007 and Namibia's Environmental Policy (1995).




As part of the EIA requirements all Interested and Affected Parties are invited to:

- Attend the 2nd public EIA feedback meeting to be held on Monday the 11th April 2011 at 10h00am at the Conservancy Office in Songwali Village.



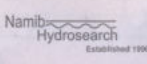
For further enquiries please contact Ms. Glynis Humphrey.
Tel: +264 61 220 400, Fax: +264 61 230 934, email: glynis@geonamibia.com.

21
NEW ERA
• Features •
Thursday, April 07 2011



A young boy working as a traffic policeman puts his finger in his ear against the sound of celebratory gunfire coming from passing vehicles, part of an anti-Gaddafi demonstration also criticising NATO for perceived lack of action, as he and others gesture them to continue driving through an intersection in downtown Benghazi, Libya, on Tuesday.

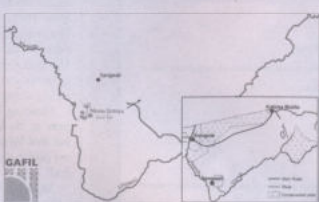
Photo: Nampu/AP

NOTICE OF SECOND PUBLIC MEETING ENVIRONMENTAL IMPACT ASSESSMENT NKASA LUPALA TENTED LODGE DEVELOPMENT

Gafil cc proposes to develop Nkasa Lupala Tented Lodge within the Wuparo Conservancy in the Caprivi Region of Namibia.


Gafil cc appointed Namib Hydrosearch cc to undertake an Environmental Impact Assessment (EIA) and the preparation of an Environmental Management Plan (EMP) for the proposed development as per the requirements of the Environmental Management Act (EMA) of 2007 and Namibia's Environmental Policy (1995).



As part of the EIA requirements all Interested and Affected Parties are invited to:

- Attend the 2nd public EIA feedback meeting to be held on Monday the 11th April 2011 at 10h00am at the Conservancy Office in Songwali Village.

For further enquiries please contact Ms. Glynis Humphrey.
Tel: +264 61 220 400, Fax: +264 61 230 934, email: glynis@geonamibia.com.



OSHAKATI TOWN COUNCIL

Local Tender Board

Tenders are invited for the Supply And Delivery of 1 New Tipper Truck for Oshakati Town Council.

Tender Number: OTC/H/01/03/2011

Descriptions: Supply And delivery of one (1) New Tipper truck for the Department of Health of Oshakati Town Council.

Specifications: New 10 Cubic feet Tipper Truck
Tipper Body included

Tender Documents: Available at Oshakati Town Council Civic Centre at Cashiers as from 1st April 2011

Levy: N\$ 300.00

Closing Date: 21st April 2011 at 11H00

Enquiries: Mr Kornelius Kapolo (Adm)
Mr Mathews Valombola (Tech)

Delivery Address: The Secretary of the Local Tender Board
Oshakati Town Council
Civic Centre
900 Sam Nujoma Road
P/Bag 5530
Oshakati

Instructions: Place the tender documents in the Tender Box clearly marked Tender Number.

11.2 List of Stakeholders and IA&Ps

AUTHORITIES	ORGANISATION	EMAIL	LANDLINE	MOBILE	FAX	COMMUNICATION
	Baobab transfers and safaris	baobabtrans@yahoo.co.uk	(066) 254400	0811243344 / 0811278632	(066) 252620	Email
	Camp Kwando	reservations@campkwando.com	(061)686021		686023	Email
	Caprivi cabins and river lodge	hakumata@iway.na	(066) 252288 / 252295	0812418182	(066) 253158	Email
	Caprivi houseboat safaris	chs@iway.na	(061) 686049	0608054305?	(061) 686049	Email
	Lianshulu Lodge	info@safariadventure.com.na , NA1@wilderness.com.na	061 274545 / 066 686073		061239455	Email
Government	Caprivi Regional Council		(066) 253046			
Government	Hon. Governor		(066) 253420		(066) 253 619	Fax
Government	Director: General Services		(066) 252107		(066) 254579	Fax
Government	Director: Planning & Development		(066) 252941			Phone
Government	Kongola Constituency		(066) 252859			Phone
Government	Katima Urban Constituency		(066) 252722		(066) 252734	Fax
Government			(066) 253923		(066) 254579	Fax
	Fish Eagles Nest	fish eaglesnest@mweb.com.na	(066) 254287	0812917791	088625227	Email
	Hotel Protea Zambezi River	res.zambezi@proteahotels.com.na	(066) 251500		253631	Email
	Island view Lodge		(066) 252801		(066) 252573	Fax
	Kalizo Lodge		(061) 686802 / 686803		(061) 686804	Fax
Government	Katima Mulilo Town Council	kmtc@iway.na	(066) 253117		(066) 253212	Email

Government	Katima Land Board	-			(066) 252 148	Fax
Government	Ministry of Agriculture & Forestry		(066) 252748			Fax
	Kongola Regional Council		(066) 253 046		(066) 253 619	Fax
			(066) 252823		(066) 252610	Fax
Government	Forestry Office		(066) 254704 / 254705		(066) 254706 / 252747 / 252748	Fax
Government	Roads Authority		(066) 252127		(066) 252132	Fax
	Tutwa Tourism & Travel	tulwa@mweb.com.na	(066) 252739	0811246696	252739	Fax
	Zambezi Lodge	katima@iafrica.com.na	(066) 253149 / 253560 / 253567		(066) 253631	Fax
	Namwi Island	namwiisl@iway.na	(066) 254188	0811274572	(066) 252233	Email
	Kalimbeza Rest camp and Fishing Safaris	wegener@mweb.com.na		081 3252455 / 0812946930		Email
	Malyo Wilderness Camp	tdw@iafrica.com.na deon@karambareservations.com	67 221205	0811241270 / 0811244136	67 221206	Email
	Open Africa Caprivi Route	admin@open Africa.org	0027 21 6839639		0027 21 6838013	Email

11.3 Background Information Document (BID)

Environmental Assessment for the proposed Nkasa Lupala Tented Lodge Development, Caprivi Region, Namibia

Background Information Document

Introduction

Gafil cc proposes to develop Nkasa Lupala Tented Lodge within the Wuparo Conservancy in the Caprivi Region of Namibia. Namib Hydrosearch cc (The Environmental Consultant) has been appointed by Gafil cc (The Proponent) to undertake an Environmental Impact Assessment (EIA) for the intended development of a tented lodge in the Wuparo Conservancy, south of Sangwali Village in the Caprivi Region.

Desirability of the Project

The project aims to provide a unique mid-market tourism facility in a specialized environment that will be able to compete with similar camps in the neighbouring area. The Nkasa Lupala Tented Lodge tourism initiative is an agreement between Gafil cc and the Wuparo Concession Conservancy, which represents the Wuparo Community in the surrounding area. This project will diversify Namibia's tourism market with the development of environmentally sustainable, non-permanent lodge in a marginal area within the Wuparo Conservancy and thereby increase the revenue and work opportunities for the inhabitants of this area.

Location of the development

The project site (GPS location: -18.329582° , 23.670884°) is located approximately 9 km south east of Sangwali Village within the Wuparo Conservancy between Mudumu and Mamili National Parks (Figure 1 & Figure 2).

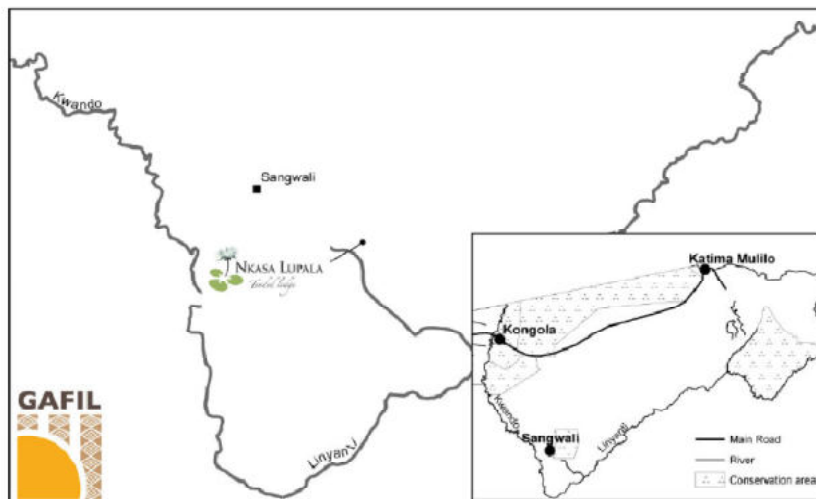


Figure 1: Location of Nkasa Lupala Tented Lodge in the Caprivi Region.



Figure 2: Site location in proximity to Mamili National Park boundary (Google, 2011).

Project Description

The purpose of the Nkasa Lupala project is to develop a tourism lodge for self drive tourists and clients arranged through Tour Operators. Activities envisaged include game drives, walking safaris and boating activities (the latter two activities are dependent on MET approval) and game viewing from camp. The activities are proposed to take place in the Nkasa Lupala National Park and the Wuparo Concession.

The Proponent is in the process of applying for the Leasehold Land Right's for a total area of 13,956 ha, situated within the Sangwali Communal Area of the Linyanti Constituency in the Caprivi Land Board area. The proposed camp infrastructure lay out is presented in Figure 3.

The proposed new tented lodge will consist of:

- Ten (10) tents on stilts, constructed of steel, canvas and wood with secure doors and windows and en-suite bathroom facilities;
- Central dining area with an open air fireplace, lounge and bar facility, which will be linked to the tents through a network of pathways.
- Central storage unit, kitchen and office area;
- Staff (single quarters with shared ablutions) and two management houses;
- Mechanical and maintenance workshops



Figure 3: Proposed Nkasa Tented Lodge camp layout (Google, 2011).

Bulk Services and Infrastructure

Sewage Disposal

'Poly-rib' septic tanks based on the 'ballam waterslot' (PTY) Limited design will be constructed on site to manage sewage disposal. One septic tank will be provided for every two toilets and the final effluent will be released into soak aways.

Solid Waste Removal

Solid waste will be transported to the central landfill in Katima Mulilo.

Water Supply

The camps basic water needs (i.e. showers, vehicle wash bays etc) are planned to be derived from the surrounding water channels in the area, however, water for drinking purposes will be potable from bottled water.

Power Supply

Power will be provided by solar panels, which will be erected for the provision of electricity and the camp water heating systems.

Road Networks

No new road networks are intended for the area, except for an entrance track off the main Mamili National park boundary, which will lead in and out of the main camp area.

Environmental Assessment Process

The process required for the proposed project is an Environmental Impact Assessment (EIA). This process serves primarily to inform the public and the relevant authorities about the proposed development and to determine any potential impacts. Should all the impacts and issues be adequately addressed in the EIA report, it will serve as the final document.

A Draft EIA and Environmental Management Plan (EMP) Report will be prepared and the document will be made available for public review and comment. Comments received will be included in the Final EIA Report. This report will be submitted to Directorate of Environmental Affairs (DEA) /MET for the Record of Decision (RoD) for the issuing of an environmental clearance certificate. An EMP will be prepared to reduce or mitigate potential negative impacts and increase benefits in order to provide the client and contractors with guidelines during the construction and operational phases of the intended lodge development.

The EIA will be conducted in accordance with Namibia's Environmental Management Act No. 7 of 2007 and Draft Regulations of 2008. The studies to be conducted as part of the EIA will include Public Participation; Biophysical Assessment and a Social – Cultural Assessment to identify any significant impact zones within the proposed study area.

Public Participation

The Environmental Assessment procedure involves stakeholder consultation and all Interested and Affected Parties (IA&Ps) are hereby invited to attend the public meeting to be on Thursday, the 24th March 2011 at 10h00am at the Conservancy Office based in Sangwali Village.

Further Involvement

If you would like to remain involved in this process, please register as an IA&P by the 24th of March 2011.

If you have any questions, concerns or require additional information regarding this study, please do not hesitate to contact us.

Contact Details

Ms. Glynis Humphrey
Namib Hydrosearch cc
P.O.Box 11546, Windhoek, Namibia
Tel: +264 61 220-400; Fax: +264 234 934
Email: glynis@geonamibia.com



11.4 FIRST PUBLIC MEETING: PRESENTATION – SANGWALI VILLAGE, CONSERVANCY OFFICE – 24TH MARCH 2011

**NKASA LUPALA TENTED LODGE
DEVELOPMENT ENVIRONMENTAL IMPACT
ASSESSMENT (EIA)**

**PUBLIC MEETING
SANGWALI VILLAGE, CONSERVANCY
OFFICE
24TH MARCH 2011**







Ms. Glynis Humphrey

OUTLINE OF PRESENTATION

- Introduce the Development
- Purpose of meeting
- Project Schedule – Public Participation
- Role of Interested & affected parties in the EIA
- Role of the EIA consultant
- Legislative Framework
- EIA procedure
- Baseline Ecological Assessments to be conducted
- Discussion: questions & answers

Nkasa Lupala Tented Lodge

- Location: situated 9km south of Sangwali Village; between Mamali and Mudumo National Park within the Wuparo Conservancy
- Agreement between Wuparo Conservancy Members and the Lodge Owner
- Small tented lodge (Establish a mid-market camp)
- Maximum of 20 people
- Drive in tourists and Tour Operators
- Tourism Activities
 - Am/PM Game drives
 - Walking Safaris (MET permission)
 - Boating Activities (MET permission)

**LOCATION SITE MAPS
Lodge Operations**

- 10 units with en-suite facilities
- Central dining rooms, kitchen, lounge, bar
- Central storage, kitchen and laundry in a container
- Staff and management houses
- Mechanical and maintenance workshops
- Gas geysers and gas for the kitchen

BULK SERVICES AND INFRASTRUCTURE

- **Sewage disposal**
 - "poly rib" septic tanks – "BALLAM WATERSLOT"
 - One septic tank for every two toilets
 - Final effluent – soak away
- **Solid Waste Removal**
 - Transported to central landfill in Katima Mulilo
- **Water Supply**
 - Camps basic needs from the surrounding water channels
 - Drinking water will be potable
- **Power Supply**
 - Solar Panels will be erected for the provision of electricity and water heating systems
- **Road Networks**
 - No new road networks – but a single entrance track

PURPOSE OF MEETING

- Grafil cc has assigned Namib Hydrosearch cc (The Environmental Consultant) to conduct an EIA on the proposed development of Nkasa Lupala Tented Lodge
- Advise the community of the EIA procedure and schedule for completion.
- Provide an opportunity for Interested & Affects Parties and community members to have input.

PROJECT SCHEDULE Public Participation

Activity	No of days	Date
Notice printed in the Caprivi Times & New Era	7 days	16/03/11
First public meeting	1 day	24/03/11
Electronic invitation to I&APs	1 day	16/03/11
Registration as I&AP	10 days	16/03/11 - 24/03/11
Registration of comments, concerns & questions	10 days	24/03/11 - 31/03/11 (1 week)
Reporting & feedback to registered I&AP	1 day	To be Announced
Second public meeting	1 day	To be Announced
Public feedback - after the Review process	1 day	To be Announced

ROLE OF INTERESTED & AFFECTED PARTIES

- As a registered IAP your comments and questions will be included in the EIA Report.
- IAPs must be given opportunity to comment on all draft reports before submission to the authority (DEA).
- You will be notified of the availability of any further documentation pertaining to this project.
- Must comply with project schedule timeframes.
- Must provide copy of any comments sent to government authority
- Must declare any direct business, personal or other interest which that party may have in the approval or refusal of the application

ROLE OF THE EIA CONSULTANT

- The EIA Consultant is a neutral entity in the process
- Identify key environmental concerns arising during the stakeholder consultations
- Identify the degree of public concern with specific issues
- Public input incorporated into the proposed project design; and environmental management plan.
- Provide mitigation for significant impacts
- Environmental Impact Statement – balance of Impacts
- The process is transparent and completely in the public domain

LEGISLATIVE FRAMEWORK

- The Directorate of Environmental Affairs has been informed that the EIA is being conducted on behalf of the Proponent.
- The EIA will be conducted according to Namibia's Environmental Management Act, No. 7 of 2007, and Draft Regulations (April, 2008).
- EIA Baseline Report and Environmental Management Plan will be reviewed by the Department of Environmental Affairs (DEA)
- The Development can only proceed ONLY after the DEA has issued a Clearance Certificate.

LISTED ACTIVITIES

- The Environmental Management Act's EIA Regulations, Schedule, Part VI provides the legislative framework.

1 (a) "The erection and the construction of tourism facilities and associated structures including all wheel drive trolls or activities related to tourism that may have a significant effects on the environment"

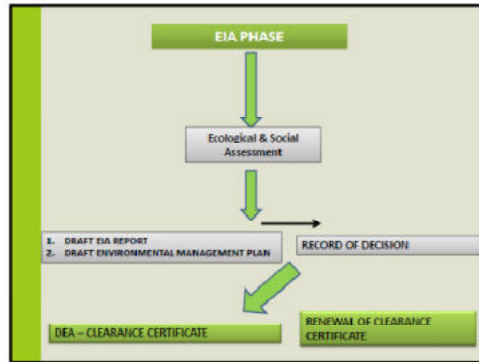
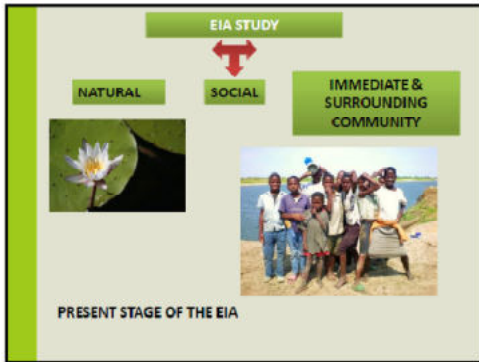
1 (b) "The erection and construction of sewage treatment plants and associated infrastructure"

2 (a) "the removal of land from (b) use for nature conservation or zoned natural space to any other land use"

3 (d) "the abstraction of ground or surface water for industrial or commercial purposes" requires an EIA to be conducted.

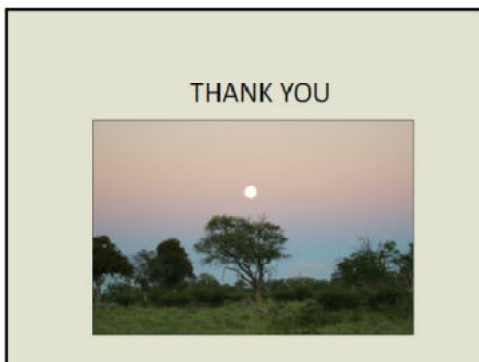
PURPOSE: EIA ASSESSMENT

- Development has a minimal possible impact on natural and social environments
- Support goals of environmental protection and sustainable development
- To predict environmental, social and economic and cultural consequences of the proposed development
- Assess plans to mitigate any unfavorable impacts
- To provide for the involvement of the public and the relevant authorities in review of the proposed development



- BASELINE ECOLOGICAL ASSESSEMENTS**
- Public Participation
 - Biophysical Assessment
 - Social – Cultural Assessment

- FOLLOW UP AFTER PUBLIC MEETING**
- Register as an I&AP – please sign the circulated list
 - Register comments, concerns & questions by the 31st March 2011
 - Further Information on development: Namib Hydrosearch cc – Glynis Humphrey Tel: 061 220 400
 - Circulation of Minutes for comment (sign the list with contact details)



**MINUTES OF THE NKASA LUPALA TENTED LODGE DEVELOPEMT EIA:
FIRST PUBLIC MEETING – SANGWALI VILLAGE – CONSERVANCY OFFICE**

Project: NKASA LUPALA TENTED LODGE DEVELOPMENT

Public Consultation: Public Meeting (1)

Date: 24th March 2011

Venue: Sangwali Village, outside the Conservancy office

Time: 10h00am

Attendees: See attached Attendance Register

Chairperson: Glynis Humphrey (GH)

Minutes: GH

1. Welcome

Costa Mayumbelo, chairman of the Sangwali community opened the meeting with a prayer and welcomed the members of the community. Ms. Glynis Humphrey (GH), the Environmental Consultant of Namib Hydrosearch cc welcomed the members of the community in the public in attendance. GH requested members of the public, representative of a particular organisation/institution (e.g. Tribal Chief, Headman, Councillors, and Community members) announce themselves prior to the start of the meeting. Hans Matiti Fwelimbi translated the public meeting into Sayeyi for the community members. Members of the public were asked to sign the attendance register for the circulation of the minutes and to register as an Interested and Affected Party (I&AP) for the Public consultation process. GH requested that members of the audience and the Sangwali community raise questions and provide their input on the development being presented.

2. Purpose of the Presentation

GH explained to the public that the purpose of the meeting was to gather feedback and input on the proposed Nkasa Lupala Tented Lodge development project proposal and to explain the environmental procedure adhered to as per the Namibian Environmental Act of 2007. The meeting included a short introduction by Simone Micheletti (SM), the project investor on the project concept and an Environmental Impact Assessment (EIA) presentation delivered by GH to inform the public of the role of an I&AP and the procedure to be followed during the EIA phase of the project.

Members: A L E Simmonds, D Sama

GH outlined the presentation to be presented:

- Introduction of the development
- Purpose of the meeting
- Project schedule
- Role of an I&AP
- Role of the EIA Consultant
- Legislative Framework
- EIA procedure
- Baseline Ecological Assessments to be conducted
- Discussion – Questions & Answers

3. Project Concept (SM)

The project investor (SM) wishes to establish a mid-market tented lodge in the Wuparo Conservancy to accommodate a maximum of 20 guests. The lodge will consist of a network of platforms with 10 tents constructed out of wood, steel and canvas, with en-suite bathrooms raised on platforms (approx. 1m off the ground). The proposed infrastructure for the lodge site will consist of a central dining area, a single kitchen and lounge with storage facilities (i.e. containers) as well as staff and management houses. The lodge will be equipped with a maintenance workshop.

The lodge will be made available to private tour operators as well as drive in tourists. Activities that are intended to be conducted from the lodge include: morning and afternoon game drives, as well as walking and boating activities (MET approval required).

4. Bulk Services and Infrastructure

Sewage disposal

- "Poly rib" septic tanks – "BALLAM WATERSLOT"
- One septic tank for every two toilets
- Final effluent – soak aways

Solid Waste Removal

- Transported to central landfill in Katima Mulilo.

Water Supply

- Camps basic needs form the surrounding water channels.
- Drinking water will be potable

Power Supply

- Solar Panels will be erected for the provision of electricity and water heating systems

Road Networks

- No new road networks – but a single entrance track

4. Purpose of the Meeting

1) Gafil cc has assigned Namib Hydrossearch cc (The Environmental Consultant) to conduct an EIA on the proposed development of Nkasa Lupala Tented Lodge. 2) Advise the community of the EIA procedure and schedule for completion. 3) Provide an opportunity for Interested & Affects Parties and community members to have input.

5. GH explained the project schedule as per the following table:

Activity	No of days	Date
Notice printed in the Caprivi Times & New Era	7 days	16/03/11
First public meeting	1 day	24/03/11
Electronic Invitation to I&APs	1 day	16/03/11
Registration as I&AP	10 days	16/03/11 - 24/03/11
Registration of comments, concerns & questions	10 days	24/03/11 - 31/03/11
Reporting & feedback to registered I&AP	1 day	To be Announced
Public feedback - after the EIA feedback	1 day	To be Announced

6. Role of an I&AP

As a registered IAP your comments and questions will be included in the EIA Report. IAPs will be presented with the opportunity to comment on all draft reports before submission to the authority (DEA). I&APs will be notified of the availability of any further documentation pertaining to this project. An I&AP must comply with project schedule timeframes and must provide copies of any comments sent to government authority (DEA/MET). As an I&AP, one must declare any direct business, personal or other interest which that party may have in the approval or refusal of the application of the project within the Ministry.

7. Role of the EIA Consultant

The EIA Consultant is a neutral entity in the process. 1) Identifies any key environmental concerns arising during the stakeholder consultations, as such during this meeting and identifies the degree of public concern with specific issues raised during the consultation process; 2) ensures that public input is incorporated into the proposed project design and the EMP; 3) provides mitigation measures for significant impacts revealed during the impact study; 4) provides a balance of the impacts (social & biophysical) and an 'impact balance statement' in the final EIA report delivered to DEA/MET for the RoD. The public participation, and this exercise of the first Public meeting ensures that the process is transparent and completely in the public domain.

8. Legislative Framework

The project has been registered with the Directorate of Environmental Affairs (DEA) and has been informed that the EIA is being conducted on behalf of the Proponent. In approximately 2 - 3 weeks time the EIA and EMP report will be delivered and reviewed by DEA/MET. The development (i.e. construction plans) can only proceed after DEA/MET has issued a RoD. A full EIA and EMP have been requested by DEA/MET. Thus, the project is now in the full EIA phase, with the conduct of the Public Participation (this Public meeting), and the Biophysical and Socio-Cultural Assessments.

9. Listed Activities requiring an EIA.

GH listed the activities relevant to the development that typically require an EIA and EMP. The Environmental Management Act's EIA Regulations, Schedule, Part VI provides the legislative framework.

'1 (o) the erection and the construction of tourism facilities and associated structures including all wheel drive trails or activities related to tourism that may have a significant effects on the environment'

'1 (p) the erection and construction of sewage treatment plants and associated infrastructure'

'2 (a) the rezoning of land from (iv) use for nature conservation or zoned natural space to any other land use'

'3(d) the abstraction of ground or surface water for industrial or commercial purposes' requires an EIA to be conducted'.

10. Purpose: EIA Assessment

GH explained that the purpose of the EA was to ensure that 1) the development has a minimal possible impact on natural and social environments; 2) to support the goals of environmental protection and sustainable development; 3) to predict the environmental, social and economic and cultural consequences of the proposed development; 4) assess the plans to mitigate any unfavorable impacts; 5) to provide for the involvement of the public and the relevant authorities in review of the proposed development.

11. Follow up after the Public Meeting

GH requested the attendees of the public meeting sign the circulated attendance list for circulation of the minutes of the meeting as an I&AP and to register any concerns and issues by the 31st March 2011. GH stated that any further information on the development can be addressed to Namib Hydrosearch cc – (061) 220 400 – Glynis Humphrey.

Questions: Issues & Concerns

Q: Is there a link between the lodge and the hunting concession?

A: This issue had been previously discussed in other meetings and has been resolved. The hunting concession and the tourism areas have been zoned, and further that the hunting area and the proposed lodge development have signed an agreement.

Q: 'The naming of the tented lodge is not correct, Nkasa Lupala should be Nkasa Rupara'.

A: An IRDNC member stated the issue rests with the naming of the park (Mamili National Park) and not the lodge name and it has been addressed to the government. In the MET documents the park name is 'Lupala', and it should be 'Rupara'. The IRDNC has submitted a written request to MET on behalf of the community for the correction of the name. It was recommended that this issue remain with the IRDNC, which will be dealt with in time. Furthermore, it was stated that the lodge was not the right platform to change the name of the lodge or the park area (in reference to Mamili National Park). The name change is a concern for the whole tribal Mayeyi community and not just for Sangwali Village.

Q: Will the renaming of the lodge delay the EA process?

A: It will be included as a community concern in the final EIA report. However, the renaming of the lodge should not affect the EA process; the reports will be presented to DEA for a RoD for the potential issuing of an environmental clearance certificate based on the nature of the impacts and the studies conducted as part of the EIA study.

Q: What type of material will the tents be made of? Will these tents last for 50, 90 or 100 years?

A: The project investors are investing 4.5 million Namibian dollars into the lodge, which includes the assets and the boats etc. The land lease hold which is being applied for is for a period of 10 years, and after which we would like to extend it for a further 10 years if relations are successful. On this basis we would purchase quality material to ensure that our investment in the lodge lasts for at least a 10 year period. The extension of the lease is based on a good relationship between the lodge investors and the community. The IRDNC contains all the details.

Q: What type of sewage system will the lodge use?

A: The sewage system is based on a 'Ballam waterslot'; there will be one septic tank for every two toilets and the soak aways will be the recipient of the purified effluent. The water will be purified, prior to it being released into or the nearby the water channels. The waste disposal system will not pollute the nearby water. The EMP report that will be written for the lodge development purposefully presents mitigation (preventative) measure to reduce the possible negative impacts of the lodge.

Q: How will the community members benefit from the lodge? The lodges in other areas offer training to the community members. If the lodge investors move out of the area, will they leave the lodge and the entire built infrastructure as it is for the community? Is the lodge development a partnership with the community or are community members involved or is it a sole mandate? Is there a development plan for the lodge?

A: The IRDNC member acknowledged the questions of the community member. An agreement was signed between the investors and the community conservancy members on the 14th February

2011. The IRDNC are representative of the community and function as the facilitator's of financial contracts between the community and external investors. However, these questions were addressed in the community AGM that was held after the public consultation meeting. The contract agreements regarding the community benefits and the lodge development were to be discussed in this meeting.

Closure and Way forward

GH explained that the community's interests, concerns and questions will be incorporated into the EIA process and included in the final report. The meeting closed at 13h10.

Attendance lists (First Public Meeting)



Project: NKASA TENTED LODGE DEVELOPMENT PROJECT

Date: 24th MARCH 2011, 10H00AM

Venue: SANGWALI VILLAGE, CONSERVANCY OFFICE

Name & Surname	Position	Address	Telephone Contact	Signature
Musa Inyent Mumbuk	management	Sangwali Area	0816063966	
Malamo Tsauk	management	Sangwali area	0816021994	
Limbo phesah	management	Sangwali area	0816429555	PN Limbo
Maezi Sylvia	management	Sangwali Area	0812203717	Sylvia
SHERZI CALVIN	Field officer	Mundumu South C	0812999610	Sherzi
Reuben Majati	Tourism Coordinator	IRBNC BAC1050 Katima	0812999348	Reuben
Limbo hameke	Field officer	" " "	0813663931	Limbo
Lilata JULIA	Bookkeeper	NUPARO 296 KM	0813144303	Lilata
Maqumbelo Foster	Chairman	" "	0812188205	Maqumbelo
Induna Minguwa	Induna	Samudoro		
David Kalimukwa		Samudoro		
Induna Sangwali	Induna	Sangwali		
Green Silito		Samudoro		
Dominic Samudoro	Member of VDC/CDC	Sangwali	0813108406	Dominic
James Kachana	Induna	Sangwali	0814661360	James
Fidelis Maimba		Samudoro		
Maagi				
Limbo B				

Giacomo MICHELETTI - Invitor No 11 Gweru Road, Rust V. 061 221131

Project: NKASA TENTED LODGE DEVELOPMENT PROJECT

Date: 24TH MARCH 2011, 10H00AM

Venue: SANGWALI VILLAGE, CONSERVANCY OFFICE

Name & Surname	Position	Address	Telephone Contact	Signature
NABZI Z				
Masumbo F	Secretary/Nyangula	PRIVATE BAG 1814	081 4847732	Masumbo
Masumbo W	CCO Participant	Box 1564/Nameze	081 6700127	Masumbo
MAREE SIBHITHE	Compass Manager		081 2692558	MAREE
Engelmina Cater	C.A	Box 1221, Nyangula	081 4743591	Engelmina
Fidelis Kizumo	Enterprise Officer	Kamwini Village Samu	0813671677	Fidelis
Vincent Mawato	Group W. Ranger	Samudano v/g	570304 04 00211	Vincent
Muyoba ERUSTUS	member	Sangwali Village	081 7005182	Muyoba
Peria Richard	member	Sangwali Village	081 4239530	Peria
Musumbale Samuel	Security	Mungwa Village	0813709976	Musumbale
Mudauke Patricia	Member	Sangwali		Mudauke
Samukup Lufu Gabs	Member	Sangwali		Samukup
Mwamey Janet	Member	Box 71 Nyangula	0816388197	Mwamey
James Lebaba Bonjwe	Member	Box 1044 Pongolom	0816025231	James
Munapara Elvis	member	Box 1044 Pongolom		Munapara
KENNETH MATOTA	MEMBER	Box 197 Nameze	0814847639	Kenneth
LIMBO NAMANDO	MEMBER	SANGWALI	0813900965	Limbo
Kopelo Stephen	member	Samudano	0814925057	Kopelo
Pdeji BRAD	MEMBER	Sangwali		Pdeji

Project: NKASA TENTED LODGE DEVELOPMENT PROJECT

Date: 24TH MARCH 2011, 10H00AM

Venue: SANGWALI VILLAGE, CONSERVANCY OFFICE

Name & Surname	Position	Address	Telephone Contact	Signature
Musheke Felix	Member	Sangwali	-	Musheke
Sikungu Gwena	Member	Samudano	081 6452981	Sikungu
DR. MBELE ALEX	Member	SHESHE	081 3294497	MBELE
ROSMERIE SIBHE	Member	SHESHE	081 3491300	ROSMERIE
WIGENZI SIBHE	Member	Samudano	081 4956406	WIGENZI
Somgwali Condy	Member	Sheshe	0814750296	Somgwali
RAVENO SITHI	Member	SPeshe	0814872608	Raveno
Kityata Samuel	Member	Samudano	081 4249675	Kityata
Limbo Charity	Member	Samudano	-	Limbo
Hibulelo Viola	Member	Nshashe	0815234240	Hibulelo
MUSUCUBILI SONIA	Treasurer	Samudano	0812897021	MUSUCUBILI
MAYUMBELO PHILLI	Member	Samudano	0814522640	MAYUMBELO
KAMANA LEVIE	Member	Sheshe		KAMANA
MULALI GERT	MEMBER	SHESHE	081324496	MULALI
MAKETO ALORIN	Community Ranger	ALUSHE	0814750172	MAKETO
SINASI HASKEN	CHAIRPERSON SAMWALI	SAMWALI	0813219478	SINASI
KOSTER MACHAZI	Game Guard	SAMWALI	0816090970	KOSTER
SIGWANIBO INANGE	Member	Nshashe	0816121621	SIGWANIBO
MAYUMBELO ERICK	Member	Samudano		MAYUMBELO

Project: NKASA TENTED LODGE DEVELOPMENT PROJECT

Date: 24TH MARCH 2011, 10H00AM

Venue: SANGWALI VILLAGE, CONSERVANCY OFFICE

Name & Surname	Position	Address	Telephone Contact	Signature
Hendricks LITABA	Teacher mem.B.	Sangwali Area	081 6937874	<i>[Signature]</i>
LYNYAZO CONSTA	Member	SANGWALI AREA	0813417211	<i>[Signature]</i>
APOLLO				
hizazi Sibeso	member	Samundano		<i>[Signature]</i>
lobelakiriomoyaka	member	Samundano		<i>[Signature]</i>
Sitwala BAPPIO	member	Samalabi		SB
Sakungu maria	member	Samundano	0814379584	SM
TAMUKU Cheria	Member	Sangwali area		TAMUKU
Nyama Jwasti	Member	Samalabi		Ni.B.I.
Mgumbuto Chaza	member	Samundano		C.M.
Maezi Lucious	V.D.C	Sangwali Area	0813971932	<i>[Signature]</i>
Mazila Mshabali	member	Sangwali Area	0814388276	N.M
Munangi JULIELY	Treasure	SheShe	0814322276	<i>[Signature]</i>
NTambilwa Maxum	member	Sangwali Area	<i>[Signature]</i>	N.M
Sauzo Aniter	member	Samundano A		S.A
Mulalatehi new	Secretary	Sangwali A	0816251555	Mulalatehi
MASHAZI LEONARD	MEMBER	SANGWALI AREA		M.A
Kaine Memory	Member	SANGWALI AREA	0813868371	M.K

Project: NKASA TENTED LODGE DEVELOPMENT PROJECT

Date: 24TH MARCH 2011, 10H00AM

Venue: SANGWALI VILLAGE, CONSERVANCY OFFICE

Name & Surname	Position	Address	Telephone Contact	Signature
Lizumo Mulemwa	Member	SANGWALI Area		L.M
MUSUSABILE MATILDA	Member	SANGWALI Area	0816125356	M.M.
SHAMA KALIMB	Member	Samundano Area	0814335178	S.H
Levran Samukelani	member	Sangwali Area	0813036711	Lev
Conetina Siswaniso	member	Sangwali Area	0813597907	C.P.
Oster Salomonso	member	Sangwali Area	0814768223	<i>[Signature]</i>
Mulanda Francesca	Member	Sangwali Area	0813405560	Mulanda
Kawula ngabila	member	Sangwali Area		K.W
Mulwambi Magriet	member	Sangwali Area		M.M
Munankane Christina	member	Sangwali Area		Munankane
Sinasi Noreen	Member	Samalabi Area	0813219678	Sinasi
Limbo Albertina	Member	Samalabi Area	0814859716	Limbo
Shwera Alex	Member	Sangwali Area	N/A	SA
Makopua Hastings	Member	Samundano Area		M.H
Mearne Shylock	Member	SheShe Area	0816063985	Mearne
FWELENGI CHRISPIN	SENIOR SCOUT	SANGWALI area	081 6189 642	FWELINGI
FWELENGI JORRIS	Tour Guide	KUPAA Campsite	0814067579	JORRIS
MAGUMBUTO PASTORINA	member	SANGWALI area	0813782638	MAGUMBUTO
Sitali Chrispin	member	SANGWALI area	N/A	Sitali
BRITUS MUSCHITA	Area officer	Sangwali area	0813219348	BRITUS

SECOND PUBLIC MEETING (EIA FEEDBACK)

**NKASA LUPALA TENTED LODGE
DEVELOPMENT ENVIRONMENTAL IMPACT
ASSESSMENT (EIA)**

**SECOND PUBLIC MEETING
SANGWALI VILLAGE, CONSERVANCY
OFFICE
11th APRIL 2011**







OUTLINE OF PRESENTATION

- PURPOSE OF THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA)
- EIA PROCESS
- LEGISLATIVE FRAMEWORK APPLIED
- BASELINE ECOLOGICAL STUDIES
- ANALYSIS OF IMPACTS
- CONCLUSION
- DISCUSSION

PURPOSE OF MEETING

- Graf l cc has assigned Nam b Hydrosearch cc (The Environmental Consultant) to conduct an EIA on the proposed development of Nkasa Lupala Tented Lodge
- Advise the community of the EIA procedure and schedule for completion.
- Provide an opportunity for Interested & Affects Parties and community members to have input.

PURPOSE OF THE EIA PROCESS

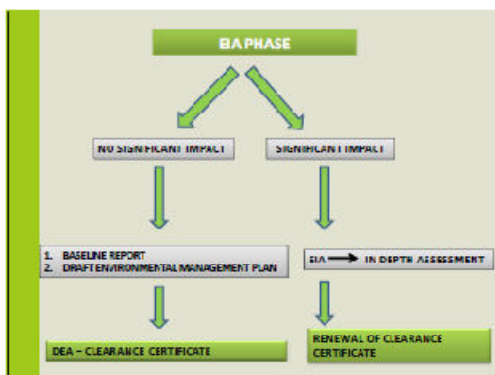
IDENTIFY KEY ENVIRONMENTAL CONCERNS

IDENTIFY PUBLIC ISSUES & CONCERNS

ASSESS BASELINE STUDIES

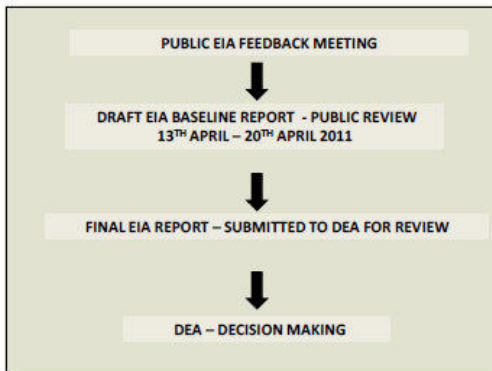
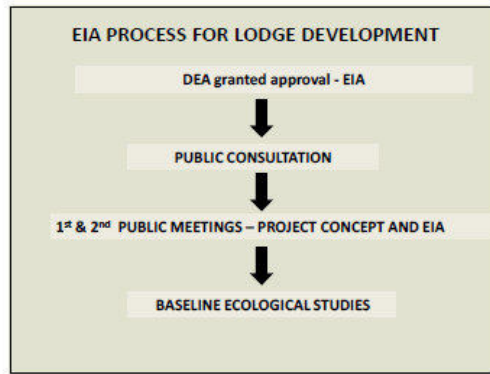
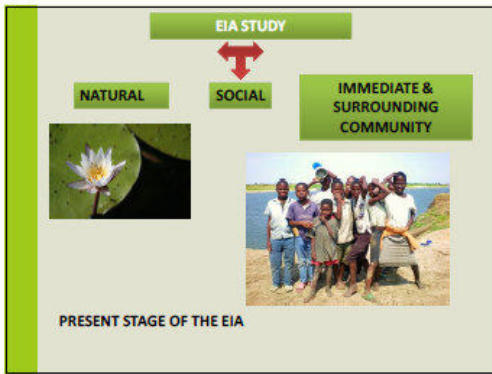
MINIMAL IMPACTS ON NATURAL & SOCIAL ENVIRONMENTS

ANALYSIS OF IMPACTS & RECOMMENDATIONS



LEGISLATIVE FRAMEWORK

- The Directorate of Environmental Affairs has been informed that the EIA is being conducted on behalf of the proponent.
- The EIA will be conducted according to Namibia's Environmental Management Act, No. 7 of 2007, and Draft Regulations (Aori, 2008).
- EIA Baseline Report and Environmental Management Plan will be reviewed by the Department of Environmental Affairs (DEA)
- The Development can only proceed ONLY after the DEA has issued a Clearance Certificate.



- BASELINE ECOLOGICAL ASSESSEMENTS**
- Public Participation
 - Biophysical Assessment
 - Social – Cultural Assessment

- PUBLIC PARTICIPATION**
- Results*
- Public issues, concerns and questions*
- TROPHY HUNTING LODGE & TOURISM
 - NAME OF THE LODGE AND THE PARK
 - HOW WILL THE SANGWALI COMMUNITY MEMBERS BENEFIT?
 - QUALITY OF THE TENTED LODGE
 - SEWERAGE SYSTEM
 - CONFLICT WITH THE TRADITIONAL AUTHORITY AND THE LODGE
-

- Biophysical Assessment**
- Diversity*
- FLORA ASSESSEMENT
 - Trees/shrubs/Grass
 - FAUNA ASSESSEMENT
 - Bird
 - Mammal
 - Reptile/Amphibian
-

RESULTS: FLORA ASSESSMENT

- Total of 39 Trees
- Total of 21 Grasses
- 1 Invasive species : Lantana camara



FAUNA ASSESSMENT

- MAMMALS
 - 11 Mammals were observed BUT only 2 species on site
- BIRDS
 - 136 Birds were recorded – at the site and in the Park
 - 400 are expected to occur in the Caprivi Region
 - Namibia : VULNERABLE Wattled Crane; Slaty Egret
- REPTILES
 - 17 families of Reptiles occur in the area
 - TOTAL OF 81 SPECIES ARE PROTECTED IN THE LODGE AREA
 - Crocodiles , Tortises, Terrapins, Lizards, Snakes
- AMPHIBIANS
 - 16 Families of Amphibians –
 - TOTAL OF 18 ARE PROTECTED IN THE AREA

RECOMMENDATIONS

- Avoid the destruction of vegetation and birdlife along the northern perimeter of the development site.
- Remove the Invasive species from the lodge site
- Lodge: Flood Contingency Plan and a Fire Plan
- Test and monitor Water Quality
- Refer: EMP for final recommendations

SOCIO – CULTURAL ASSESSMENT

- Interviews – Sangwali Community
- Three other interviews – CBNRM and Hunting Operation
- 1) Existing tourism presence in the Sangwali Community;
- 2) Existing opinions on tourists;
- 3) Infrastructure and public services;
- 4) Use of natural resources in the area by the community;
- 5) Stakeholder recommendations.

RESULTS

- 1) Sangwali community – Trophy Hunting Operation
- 2) Illegal Poaching
- 3) Strong Link – Tourism and Environmental Education
- 4) Sound values for Natural Resource Management
- 5) Strong Interest: - Cultural Hand-Made Crafts
- Employment – Youth
- Environmental Knowledge
- 6) Positive about the development of Tourism

Recommendations

- 1) Establish lines of communication between the MET, Sangwali Community Conservancy Office, IRDNC, WWF, MCC and the lodge
 - Minimise conflict
- 2) Proponent: Benefits – Tourism and Hunting Operation
- 3) Proponent: No of staff – Employment
- 2) Involve the Conservancy Office in Decision Making (Employment)
- 3) Implement environmental awareness policy for all staff.
- 4)RELATIONSHIP – TRUST – TRANSPARENCY

EIA ANALYSIS ANALYSIS

Rapid Impact Analysis Matrix (Pastakia, 1998)
Analysis and Presentation Tool for EIA

Alternatives:

- 1) Nkasa Lupala Tented Lodge Development
- 2) No Action Alternative

Criteria

Physical/Chemical;
Biological/Ecological;
Sociological-Cultural;
Economic/Operational

IMPACT RATING

- MAJOR POSITIVE IMPACT
- SIGNIFICANT POSITIVE IMPACT
- POSITIVE CHANGE
- NO CHANGE
- MAJOR NEGATIVE IMPACT
- NEGATIVE CHANGE
- SIGNIFICANT NEGATIVE IMPACT
- MAJOR NEGATIVE IMPACT

IMPACTS (+VE & -VE)

- 1 + VE SOCIO-CULTURAL
- 2 + ECONOMIC & OPERATIONAL
- 3 - BIOLOGICAL/ECOLOGICAL
- 4 - PHYSICAL/CHEMICAL

SOCIO-CULTURAL IMPACTS

- + POSITIVE IMPACTS
 - 1) TOURISM DIVERSITY
 - 2) TOURISM MARKETING
 - 3) INTERNATIONAL/NATIONAL/LOCAL
 - 4) COMMUNITY BASED TOURISM PROJECTS
 - 5) EDUCATIONAL BENEFITS (SKILLS BASE)
- NEGATIVE IMPACTS
 - 1) TOURISM HUNTING CONCESSION
 - 2) COMMUNITY AND LODGE PROMOTORY RELATIONS
 - 3) POSSIBLE FURTHER - EXTENSIVE FINDING
 - 4) COMMUNITY - LACK OF PROJECT OWNERSHIP

ECONOMICAL/OPERATIONAL

- POSITIVE IMPACTS
 - 1) EMPLOYMENT
 - 2) LODGE - ASSOCIATED BENEFITS
 - 3) FINANCIAL IMPACT - COMMUNITY (LOCAL TRADE)
- NEGATIVE IMPACTS
 - 1) INCREASE IN CRIME DUE TO TOURISTS AND LODGE
 - 2) FINANCIAL COST OF CONSTRUCTION
 - 3) HUNTING CONCESSION

ECOLOGICAL/BIOLOGICAL

- + POSITIVE IMPACTS
 - 1) MONITORING - NATIONAL PARKS
 - 2) ENVIRONMENTAL EDUCATION
 - 3) OBSERVATIONS - ILLEGAL POACHING
 - 4) ENVIRONMENTAL/RESEARCH BASE - LODGE
- NEGATIVE IMPACTS
 - 1) MALARIA AREA
 - 2) FIRE HAZARDS
 - 3) VEGETATION DESTRUCTION
 - 4) PROBLEM ANIMALS
 - 5) SMALL MAMMAL LOSS (DURING CONSTRUCTION)

PHYSICAL/CHEMICAL

+ POSITIVE IMPACTS
1) WATER QUALITY CONTROL

-NEGATIVE IMPACTS
1) SOLID WASTE MANAGEMENT
2) SOIL CONTAMINATION, EROSION, COMPACTION
3) DAMAGE TO ACCESS TRACKS DURING BUILDING

CONCLUSION

- MET – RFD FOR APPROVAL FOR DEVELOPMENT
- SMALL LODGE WITH MINIMAL IMPACT (SIGNIFICANT IMPACTS- COMMUNITY)
- ENVIRONMENTAL MANAGEMENT PLAN

•THANK YOU



FOLLOW UP AFTER PUBLIC MEETING

- Register as an I&AP – please sign the circulated list
- Register comments, concerns & questions TODAY or by 20th March 2011
- Further information on development: Namib Hydrosearch cc – Glynis Humphrey tel: 061 220 400
- Circulation of Minutes for comment (sign the list with contact details)

**MINUTES OF THE NKASA LUPALA TENTED LODGE DEVELOPEMT EIA:
SECOND PUBLIC MEETING – SANGWALI VILLAGE – CONSERVANCY OFFICE**

Project: NKASA LUPALA TENTED LODGE DEVELOPMENT

Public Consultation: Second Public Meeting

Date: 11th April 2011

Venue: Sangwali Village, outside the Conservancy office

Time: 10h00am

Attendees: See attached Attendance Register

Chairperson: Glynis Humphrey (GH)

Minutes: GH

1. Welcome

The public meeting was opened with a community prayer. Ms. Glynis Humphrey (GH), the Environmental Consultant of Namib Hydrosearch cc welcomed the members of the community in the public in attendance. GH requested members of the public, representative of a particular organisation/institution (e.g. Tribal Chief, Headman, Councillors, and Community members) announce themselves prior to the start of the meeting. Hans Matiti Fwelimbi translated the meeting into Sayeyi for the community members. Members of the public were asked to sign the attendance register for the circulation of the minutes and to register as an Interested and Affected Party (I&AP) for the Public consultation process. GH requested that members of the audience and the Sangwali community raise questions and provide their input on the development being presented.

2. Purpose of the Presentation

GH explained to the public that the purpose of the meeting was to provide the EIA feedback and to gather input on the proposed Nkasa Lupala Tented Lodge development. GH presented the results from the ecological baseline studies, the associated positive and negative impacts and provided a summary of the recommendations presented in the EIA report.

GH outlined the presentation to be presented:

- Purpose of the meeting
- Legislative Framework
- EIA procedure
- Baseline Ecological Assessments to be conducted
- Baseline Results (2nd Meeting EIA Feedback Presentation - Appendix A).
- Discussion – Questions & Answers

Members: A L E Simmonds, D Sarma

1. Purpose of the Meeting

1) Gafil cc has assigned Namib Hydrosearch cc (The Environmental Consultant) to conduct an EIA on the proposed development of Nkasa Lupala Tented Lodge. 2) Advise the community of the EIA results (i.e. feedback) and schedule for completion. 3) Provide an opportunity for Interested & Affects Parties and community members to have input.

3. Legislative Framework

The project has been registered with the Directorate of Environmental Affairs (DEA) and has been informed that the EIA is being conducted on behalf of the Proponent. In approximately 2 - 3 weeks time the EIA and EMP report will be delivered and reviewed by DEA/MET. The development (i.e. construction plans) can only proceed after DEA/MET has issued a RoD. A full EIA and EMP have been requested by DEA/MET. Thus, the project is now in the full EIA phase, with the conduct of the Public Participation (this Public meeting), and the Biophysical and Socio-Cultural Assessments.

4. Baseline Study Results

Please refer to the Impact Analysis in the EIA Report (Section 8).

5. Follow up after the Public Meeting

GH requested the attendees of the public meeting sign the circulated attendance list for circulation of the minutes of the meeting as an I&AP and to register any concerns and issues by the 25th April 2011. GH stated that any further information on the development can be addressed to Namib Hydrosearch cc – (061) 220 400 – Glynis Humphrey.

Questions: Issues & Concerns

Q: How do you propose to minimise the potential conflict between the trophy hunting lodge and the tourism operation?

A: This question was raised at the first public meeting. This concern has been addressed in the EIA report as a significant impact. A contract agreement was drawn up and signed between the trophy hunting lodge and the proposed tourism lodge. Further to this, a consultation meeting was held with Mr Colin Britz, the trophy hunting lodge leaseholder and mitigation measures were discussed which were associated with finding communication methods to safeguard against any potential safety hazards and conflict issues that may arise during the operation of both parties in the Wuparo Conservancy.

Q: Thank you for the research and the presentation of the results of the project findings. We believe that the results should indicate 70% positive and 30% negative impacts. In your report you must mention that this development is positive for the Wuparo Conservancy community.

A: The environmental consultant is a neutral entity throughout the EIA process. The results of the study are presented in the report, together with the impacts and the associated mitigation measures.

Q: How did you conduct your field research?

A: Transects were used as the field research technique for the biophysical assessment (flora and fauna assessment). A transect is a straight line along which measurements and/or observations are made. Interviews were conducted with members of the Sangwali community as part of the Social Cultural study.

Q: How come you saw so few mammals during your work?

A: Only two mammals were seen on site during the field work and these were kudu and a common duiker. The rest of the mammals were observed in the park. *Community member:* The development area is very small (+/- 14 ha) and that is why there were not many animals observed.

Millennium Challenge Account Grant Meeting

Date: 10th April 2011

Venue: Sangwali Village, outside the Conservancy office

Time: 09h00am

A summary of the baseline studies as part of the EIA were presented at the grant meeting, which included the results from the biophysical and socio-cultural study. Please refer to Section 8 of the EIA report for a detailed description of the results.

Questions: Issues & Concerns:

Q: You frequently refer to the Sangwali community. This development does not only affect the Sangwali community, but all the communities in the Wuparo Conservancy.

A: Thank you for your comment. From now on I will refer to the Wuparo Conservancy communities.

Q: Has the fact that the MET facilities are not sufficient in the Nkasa Lupala National Park been included in the report? There are not enough roads and no camping facilities. The tourists that visit the park end up ruining the park because they camp anywhere they like.

A: It has been suggested in the report that MET should develop new bridges and a new road network to allow for further exploration of the park.

Q: Our concern is that very few tourists visit the community campsites and there are a high number of tourists passing through the area. We are losing money due to this.

A: There is a plan to market the Rupara Community camp sites on the lodge website. The community camp sites will be marketed at the same time that the lodge is marketed. In addition, we would also like to provide new maps of the area and facilitate the making of new roads and suggest our recommendations to MET Caprivi Park head quarters (*Simone Micheletti*).

Q: During the social – cultural study, did the community ask any questions about harvesting natural resources from the lodge site?

A: No questions were asked.

Closure and Way forward

GH explained that the community's interests, concerns and questions will be incorporated into the EIA process and included in the final report. The meeting closed at 12h22.

Attendance lists (2nd Public Meeting)



Project: NKASA TENTED LODGE DEVELOPMENT PROJECT

Date: 11TH APRIL 2011, 10H00AM

Venue: SANGWALI VILLAGE, CONSERVANCY OFFICE

Name & Surname	Position	Address	Telephone Contact	Signature
Mr. Gwalpo S	Induna	Samundana Area	0916017171	[Signature]
Ndlozi zekiso	Induna	Samalabi Area		[Signature]
MR Mwikanda L S	Induna	Sangwali Area	0813234453	[Signature]
MA Limbo zekiso	Induna		0814369118	[Signature]
MR Nama Morgan	Treasurer	P.O. Box 1022	0813415766	[Signature]
SINABI HAIKEN	Chairperson	" " 904	0813219478	[Signature]
SIMONE MICHELETTI		Faber 11670	081677722	[Signature]
MR Luzunge R	Induna	Sangwali Area	0816434026	[Signature]
MR SAPHANWA D S	CBC chairperson	Sangwali Area	0813108446	[Signature]
MR MAGWALO Y P	Ranger	Samundana Area	57030400 0011	[Signature]
MR MAEZI STARLIFE	Campsite Manager	WUPARA	0814672558	[Signature]
MR MUYENABELO B	Camp Manager	SHESHE	0813349038	[Signature]
MR JATON MUDONI	Chairperson	SHESHE Village	0813302805	[Signature]
MR MUGWENA BRUKU	Field officer	WUPARA	0813219342	[Signature]
Limbo Berio	CRM	WUPARA	08114180585	[Signature]
Maewila Theontila	Community Resource Monitor	WUPARA	0816522446	[Signature]
Sikentus Susao	Community Resource Monitor	WUPARA	0816681829	[Signature]
Limbo Charity	Community member	Samundana	-	[Signature]
Maewila Theontila	Community member	Samundana	0816759303	[Signature]



Project: NKASA TENTED LODGE DEVELOPMENT PROJECT

Date: 11TH APRIL 2011, 10H00AM

Venue: SANGWALI VILLAGE, CONSERVANCY OFFICE

Name & Surname	Position	Address	Telephone Contact	Signature
MAEZI SYKHA	Management C.	Sangwali	0814203719	[Signature]
SINABI NATEU	Member	Samalabi	0818319478	[Signature]
Limbo Albertinah	Member	Samalabi	0814859716	[Signature]
Julia Lilem	Part leader WUPARA	Box 276 Katima	0813440303	[Signature]
Limbo Phoxan	CMC	Box 296 Kat	0816424555	[Signature]
Mubuso Agarith	Member	Sulata	0816499517	[Signature]
Kaine Memory	Member	Sangwali	0813868571	[Signature]
Sinosiku Efirinah	Treasure	544 Box Sangwali	0813300308	[Signature]
Maeila Abel	Member	Sangwali	-	[Signature]
Salus hunda Otor	Member	Sangwali	0816948223	[Signature]
Mambo Foster	Member	Sangwali	0814047722	[Signature]
Sikanga Gues	Member	Samundana	0816354816	[Signature]
Malimba Selma	Member	Sangwali	0816290483	[Signature]
EWELIMAI CHRISTIN	Community Ranger	Sangwali	0816189642	[Signature]
Miriam Jyloet	Member	Sangwali	0816263705	[Signature]
Mulanda Stephan	Community Range	Samundana	0815540059	[Signature]
Muyenabelo Foster	WUPARA chairman	Samundana	0812083705	[Signature]
Fidelo Mueumo	Enterprise officer	Karorivik	0813671677	[Signature]
Joshua Maketo	Community Ranger	Sangwali	0814730677	[Signature]



REPUBLIC OF NAMIBIA

MINISTRY OF ENVIRONMENT AND TOURISM

Enquiries: Dr. F.M. Sikabongo
Tel.: 00264 61 249015
Fax. 00264 61 240339
freddy@dea.met.gov.na

Troskie Building, 1st Floor
c/o Robert Mugabe and Uuland Strt
P/Bag 13346
Windhoek

OFFICE OF THE PERMANENT SECRETARY

The Managing Director
GAFIL cc
Schanzen Road 24
Windhoek

Cell: +264 81 147 7798

Dear Sir,

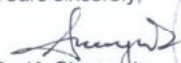
**Re: Need for and Environmental Impact Assessment (EIA) for the Proposed Nkasa
Lupala Tented Lodge, Caprivi Region**

I refer to your letter concerning the above. In view of the environmental sensitivity of the proposed area, I advise that an EIA which includes an EMP must be conducted prior to any construction of the lodge in the Nkasa/Lupala wildlife reserves. The Environmental Management Act 7 of 2007 requires the proponent of the project to conduct an EIA before any development activity takes place.

The leasehold approval is beyond the scope of our work. We nevertheless expect the construction to commence only after the EIA is conducted, reviewed and cleared by this Ministry in favour of the project. It is important to emphasise that the duty to conduct an EIA and have it submitted to this Ministry is a legal requirement in terms of the above mentioned Act.

Thank you once again for your kind co-operation.

Yours sincerely,


Dr. K. Shangula
Permanent Secretary



15th April 2011
Gafil cc
P.O. Box 11470
Windhoek
Namibia

Attention: Simone Micheletti
CC: Trevor Nott

Re: Development of Nkasa Lupala Tented Lodge prior to the issuing of an Environmental Clearance Certificate from the Ministry of Environment and Tourism (MET)

It has come to my attention that the construction of the lodge has commenced, prior to the issuing of the leasehold by the Caprivi Communal Land Board in Katima Mulilo. Further, the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) for the potential issuing of a Clearance Certificate by MET have not yet been completed.

According to the Environmental Management Act No. 7 of 2007 Section 27, the development may not proceed without the provision of the Clearance Certificate by MET. On this basis, please could you advise Trevor Nott, the lodge construction contractor, that under no circumstances should any building be take place at this stage. This situation could potentially threaten the approval process by the land board and MET.

Please be advised that the environmental consultant may be obliged necessary action to alert the relevant authorities should the above not be adhered to.

Should you require any further information and/or assistance please contact us.

Yours sincerely,



Glynis Humphrey M.Sc
Environmental Consultant

APPENDIX B – SOCIAL –CULTURAL ASSESSMENT

Table 15: Names of interviewee’s interviewed with the qualitative questionnaire survey in Sangwali Village

No	Name	Position	Organisation
1	Susan Schendwa	Sangwali Community Member	Wuparo Conservancy
2	Berrio Limbo	Sheshe Craft Centre Staff	Wuparo Conservancy
3	Charlotte Limbo	Sheshe Craft Centre Staff	Wuparo Conservancy
4	Pticia Mwikanda	Sangwali Community Member	Wuparo Conservancy
5	Anna Saikobiso	Sangwali Community Member	Wuparo Conservancy
6	Beauty Mwetl Mbeha	Mamili National Park Reception	Caprivi National Parks
7	Masule Reagen Mafancer	Camp Manager Rupara Community Camp Site	Wuparo Conservancy
8	Starlife Maezi	Camp Manager Rupara Community Camp Site	Wuparo Conservancy
9	Induna Sangwali	Sangwali Headman	Sangwali Community
10	Simon Mayes	Wildlife Management – Caprivi Region	SPAN
11	Colin Briitz	Hunting Operator	Caprivi Hunting Safaris cc
12	Richard Diggel	CBNRM	WWF

QUESTIONNAIRE FOR SOCIO-CULTURAL ASSESSMENT

EXISTING TOURISM PRESENCE IN THE SANGWALI AREA, CAPRIVI

1. Does tourism exist in your community?
2. Does tourism benefit the social relationships in the area?
3. Do you think that tourism benefits the environment in the Caprivi Strip area?
4. Do you think that tourism benefits the economy of the area?
5. Does tourism benefit you personally and/or your household?

EXISTING OPINION ON TOURISTS

1. Approximately what percentage of your tourists is local, regional or international?

2. Have the number of tourists in the last year increased in the area?
3. Do you enjoy having tourists in your area? Why?
4. What are the positive impacts of tourism in your community?
5. Currently, does your community experience any negative aspects associated with tourism? If so, please explain:
6. How do you feel about tourists taking pictures in you village?
7. Are there any "rules" or cultural customs that you feel tourists should obey in Sangwali? What are they?
8. Why are tourists attracted to your area? What are your most unique existing attractions?
9. What are your most unique attractions that have yet to be developed for tourism in the Sangwali area?

INFRASTRUCTURE AND PUBLIC SERVICES COMMENTS:

1. What services are needed in the community to make it more comfortable for residents and visitors?
2. Do you have policemen, fireman and medical emergency specialists in the community?
3. Do you think that visitors feel safe walking/travelling alone in the community? If not, why? How could this be improved?

NATURAL RESOURCES

- 1. Do you think that there is a strong link between tourism and natural resources protection?**
- 2. Are the local natural resources managed at this time of year? If yes, by whom?**
- 3. Is the community involved with the management of resources?**
- 4. Do you think that the community should have more or less involvement in the management of these resources?**
- 5. How could the community improve the management of the resources?**
- 6. Does the community benefit from the protecting of these resources?**
 - If so, how do they benefit? Do they recognize these benefits?**
 - If not, how could they better understand these benefits?**
- 7. Can you describe any benefits that you are personally receiving because these resources are protected?**
- 8. Do local people lose any benefits by protecting these resources?**
- 9. How could tourism improve both your community's benefits and natural resource protection?**

STAKEHOLDER RECOMMENDATIONS

- 1. What are your future suggestions for future tourism development in the community? What investments or improvements are of top priority?**
- 2. If other activities, services, or products could be offered in your village or area, where do you think these activities or services should be located?**

3. Are there other forms of development that you think would benefit the local residents more than sustainable tourism? If so, what are they?

APPENDIX C – BIOPHYSICAL ASSESSMENT

Table 16: Trees, shrubs and flowering plants identified at the proposed lodge development site.

Species name: Scientific name	Status	Observed
<i>Acacia nigrescens</i>		*
<i>Acaica erioloba</i>	Protected (F)	*
<i>Albizia harveyi</i>		*
<i>Albizia versicolor</i>		*
<i>Bauhinia petersiana</i>		*
<i>Berchemia discolor</i>	Protected (F)	*
<i>Burkea africanum</i>	Protected (F)	*
<i>Capparis tomentosa</i>		*
<i>Colophospermum mopane</i>	Protected (F)	*
<i>Combretum hereroense</i>		*
<i>Combretum imberbe</i>	Protected (F)	*
<i>Combretum mossambicense</i>		*
<i>Croton megalobotrys</i>		*
<i>Dichrostachys cinera</i>		*
<i>Diospyros lycioides</i>		*
<i>Diospyros mespiliformis</i>		*
<i>Erythrophleum africanum</i>		*
<i>Euclea divinorum</i>		*
<i>Flueggea virosa</i>		*
<i>Garcinia livingstonei</i>		*
<i>Gymnosporia senegalensis</i>		*
<i>Hyphaene petersiana</i>		*
<i>Kigelia africanum</i>		*
<i>Philenoptera violacea</i>	Protected (F)	*
<i>Phyllanthus reticulatus</i>		*
<i>Sclerocarya birrea</i>	Protected (F)	*
<i>Searsia tenuinervis</i>		*
<i>Sesbania bispinosa</i>		*
<i>Ziziphus mucronata</i>	Protected (F)	*
Flowering plants		
Species name: Scientific name	Status	Observed
<i>Abutilon angulatum</i>		*
<i>Acrotome inflata</i>		*
<i>Aerva leucra</i>		*
<i>Asparagus africanus</i>		*
<i>Bidens schimperi</i>		*
<i>Ipomoea boursiana</i>		*
<i>Lantana camara</i>		*
<i>Leontis nepetifolia</i>		*
<i>Melanthera scandens</i>		*

<i>Pechuel loeschea leubnitziae</i>		*
<i>Senecio strictifolius</i>		*
<i>Veronia glabra</i> var. <i>Laxa</i>		*

Table 17: Grasses identified in the proposed lodge development site.

Species name: Scientific name	Ecological status	Grazing value	Observed
² <i>Andropogon eucomus</i>	Increaser II	Low	*
² <i>Aristida junciformis</i>	Increaser III	Low	*
² <i>Brachiaria xantholeuca</i>	?		*
^{1,2} <i>Cenchrus ciliaris</i>	Decreaser	High	*
^{1,2} <i>Chloris virgata</i>	Increaser II	Average	*
^{1,2} <i>Cymbopogon caesius/excavatus</i>	Increaser I	Low	*
^{1,2} <i>Cynodon dactylon</i>	Increaser II	High	*
^{1,2} <i>Digitaria eriantha</i>	Decreaser	High	*
^{1,2} <i>Eragrostis rigidior</i>	Increaser II	Average	*
^{1,2} <i>Eragrostis superba</i>	Increaser II	Average	*
^{1,2} <i>Hyperthelia dissoluta</i>	Increaser I	Average	*
^{1,2} <i>Panicum coloratum</i>	Decreaser	High	*
^{1,2} <i>Panicum maximum</i>	Decreaser	High	*
^{1,2} <i>Pogonarthria squarrosa</i>	Increaser II	Low	*
^{1,2} <i>Sporobolus ioclados</i>	Increaser II	Average	*
² <i>Sporobolus festivus</i>	Increaser II	Low	*
^{1,2} <i>Sporobolus fimbriatus</i>	Increaser III	High	*
¹ <i>Stripagrostis anomala</i>		Average	*
^{1,2} <i>Stripagrostis Hirtigluma</i> subsp. <i>patula</i>	Increaser II	Low	*
² <i>Trichoneura grandiglumis</i>	Increaser II	Low	*

Table 18: Bird species identified in the proposed lodge development site.

Species name: Scientific	Common name	Status Namibia	Status in Southern Africa	Specially Protected
<i>Anhinga rufa</i>	African Darter			
<i>Haliaeetus vocifer</i>	African Fish-Eagle		Vulnerable	
<i>Treron calvus</i>	African Green Pigeon			
<i>Tockus nasutus</i>	African Grey Hornbill			
<i>Upupa africana</i>	African Hoopoe			
<i>Actophilornis africanus</i>	African Jacana			
<i>Streptopelia decipiens</i>	African Mourning Dove			
<i>Cypsiurus parvus</i>	African Palm-Swift			
<i>Terpsiphone viridis</i>	African Paradise Flycatcher v			
<i>Motacilla aguimp</i>	African Pied Wagtail			
<i>Ispidina picta</i>	African Pygmy Kingfisher			
<i>Otus senegalensis</i>	African Scops-Owl v			
<i>Bradypterus baboecala</i>	African Sedge-Warbler			
<i>Myrmecocichla formicivora</i>	Anteating Chat		Endemic	

<i>Turdoides jardineii</i>	Arrow-Marked Babbler			
<i>Recurvirostra avosetta</i>	Avocet			
<i>Tyto alba</i>	Barn Owl			
<i>Hirundo rustica</i>	Barn Swallow v			
<i>Terathopius ecaudatus</i>	Bateleur v		Endangered	
<i>Dendropicus namaquus</i>	Bearded Woodpecker v			
<i>Campethera bennettii</i>	Bennett's Woodpecker			
<i>Egretta ardesiaca</i>	Black Egret v			
<i>Prinia flavicans</i>	Black-Chested Prinia			
<i>Lybius torquatus</i>	Black-Collared Barbet v			
<i>Tchagra senegala</i>	Black-Crowned Tchagra v			
	Black-Eyed Bulbul v			
<i>Elanus caeruleus</i>	Black-Shouldered Kite v			
<i>Vanellus armatus</i>	Blacksmith Lapwing v			
<i>Himantopus himantopus</i>	Black-Winged Stilt v			
<i>Uraeginthus angolensis</i>	Blue Waxbill v			
<i>Halcyon albiventris</i>	Brown-Hooded Kingfisher v			
<i>Nilais afer</i>	Brubru v			
<i>Pterocles burchelli</i>	Burchell's Sandgrouse v			
<i>Lamprotornis australis</i>	Burchell's Starling v		Near Endemic	
<i>Eremomela usticollis</i>	Burnt-Necked Eremomela			
<i>Lamprotornis nitens</i>	Glossy Starling v			
<i>Streptopelia capicola</i>	Cape Turtle-Dove v			
<i>Dendropicus fuscescens</i>	Cardinal Woodpecker v			
<i>Merops nubicoides</i>	Carmine Bee-Eater v			
<i>Bubulcus ibis</i>	Cattle Egret v			
<i>Bradornis infuscatus</i>	Chat Flycatcher		Near Endemic	
<i>Batis molitor</i>	Chin-spot Batis v			
<i>Cisticola pipiens</i>	Chirping Cisticola			
<i>Tringa nebularia</i>	Common Greenshank v			
<i>Gallinula chloropus</i>	Common Moorhen v			
<i>Charadrius hiaticula</i>	Common Ringed Plover			
<i>Actitis hypoleucos</i>	Common Sandpiper v			
<i>Rhonpomastus cyanomelas</i>	Common Scimitarbill v			
<i>Cinnyris cupreus</i>	Copper Sunbird			
<i>Centropus cupreicaudus</i>	Coppery-Tailed Coucal v			
<i>Peliperdix sephaena</i>	Crested Francolin			
<i>Tockus alboterminatus</i>	Crowned Hornbill v			
<i>Rhinoptilus africanus</i>	Double-Banded Courser			
<i>Pterocles bicinctus</i>	Double-Banded Sandgrouse - Banded Sandgrouse v		Near Endemic	
<i>Alopochen aegyptiacus</i>	Egyptian Goose v			
<i>Turtur chalcospilos</i>	Emerald-Spotted Wood-Dove v			
<i>Merops apiaster</i>	European Bee-Eater v			
<i>Acrocephalus scirpaceus</i>	European Reed-Warbler v			
<i>Coracias garrulus</i>	European Roller v			

<i>Cisticola juncidis</i>	Fantailed Cisticola v			
<i>Camprimulgus pectoralis</i>	Fiery-Necked Nightjar v			
<i>Discurus adsimilis</i>	Fork-Tailed Drongo v			
<i>Megaceryle maximus</i>	Giant Eagle-Owl v			
<i>Plegadis falcinellus</i>	Giant Kingfisher v			
<i>Anthus cinnamomeus</i>	Grassveld Pipit v			
<i>Lamprotornis chalybaeus</i>	Greater Blue-Eared Starling v			
<i>Falco rupicoloides</i>	Greater Kestrel			
<i>Acrocephalus rufescens</i>	Greater Swamp-Warbler			
<i>Egretta alba</i>	Great-White Egret v			
	Green Wood-Hoopoe v			
<i>Butorides striatus</i>	Green-Backed Heron v			
<i>Ardea cinerea</i>	Grey Heron v			
<i>Corythaixoides concolor</i>	Grey Lourie v			
<i>Camaroptera brevicaudata</i>	Grey-Backed Camaroptera v			
<i>Halcyon leucocephala</i>	Grey-Headed Kingfisher v			
<i>Bucorvus leadbeateri</i>	Ground Hornbill v			
<i>Psophocichla litsitsirupa</i>	Groundscraper Thrush v			
<i>Polyboroides typus</i>	Gymnogene v			
<i>Scopus umbretta</i>	Hamerkop v			
<i>Lagonosticta rhodopareia</i>	Jameson's Firefinch v			
<i>Streptopelia senegalensis</i>	Laughing Dove v			
<i>Coracias caudatus</i>	Lilac-Breasted Roller v			
<i>Merops pusillus</i>	Little Bee-Eater v			
<i>Egretta garzetta</i>	Little Egret V			
<i>Tachybaptus ruficollis</i>	Little Grebe v			
<i>Accipiter minullus</i>	Little Sparrowhawk v			
<i>Sylvietta rufescens</i>	Long-Billed Crombec v			
<i>Corvinella melanoleucus</i>	Longtailed Shrike v			
<i>Lamprotornis mevesii</i>	Longtailed Starling v			
<i>Vanellus crassirostris</i>	Long-Toed Lapwing v			
<i>Alcedo cristata</i>	Malachite Kingfisher v			
<i>Ardeola idea</i>	Malagasy Pond Heron			
<i>Leptoptilos crumeniferus</i>	Marabou Stork v		Near Threatened	
<i>Polemaetus bellicosus</i>	Martial Eagle v		Endangered	
<i>Poicephalus meyeri</i>	Meyer's Parrot v			
<i>Hirundo senegalensis</i>	Mosque Swallow v			
<i>Oena capensis</i>	Namaqua Dove v			
<i>Pternistes natalensis</i>	Natal Francolin			
<i>Anastomus lamelligerus</i>	Openbilled Stork v			
<i>Pandion haliaetus</i>	Osprey v			
<i>Glaucidium perlatum</i>	Pearl-Spotted Owlet v			
<i>Ceryle rudis</i>	Pied Kingfisher v			
<i>Dryoscopus cubla</i>	Puffback Shrike v			
<i>Ardea purpurea</i>	Purple Heron v			
<i>Cisticola chiniana</i>	Rattling Cisticola v			

<i>Tockus erythorhynchus</i>	Red-Billed Hornbill v		Near Endemic	
<i>Eupodotis ruficrista</i>	Red-Crested Koraan v			
<i>Streptopelia semitorquata</i>	Red-Eyed Dove v			
<i>Phalacrocorax africanus</i>	Reed Cormorant v			
<i>Mirafra africana</i>	Rufous-Naped Lark v			
<i>Ephippiorhynchus senegalensis</i>	Saddle-Billed Stork v		Endangered	
<i>Sagittarius serpentarius</i>	Secretarybird v			
<i>Prodotiscus regulus</i>	Sharpbilled Honeyguide v			
<i>Egretta vinaceigula</i>	Slaty Egret v	Vulnerable	Endangered	✓
<i>Burhinus capensis</i>	Spotted Thick-Knee v			
<i>Francolinus swainsonii</i>	Swainson's Francolin			
<i>Aquila rapax</i>	Tawny Eagle v		Endangered	
<i>Prinia subflava</i>	Tawny-Flanked Prinia v			
<i>Phyllastrephus terrestris</i>	Terrestrial Brownbul v			
<i>Charadrius tricollaris</i>	Three-Banded Plover v			
<i>Tchagra australis</i>	Three-Streaked Tchagra v			
<i>Burhinus vermiculatus</i>	Water Thick Knee v			
<i>Bugeranus carunculatus</i>	Wattled Crane v	Vulnerable	Critically Endangered/Endangered	✓
<i>Prionops plumatus</i>	White Helmet-Shrike			
<i>Thalassornis leuconotus</i>	White-Backed Duck -Backed Duck			
<i>Cercotrichas leucophrys</i>	White-Browed Scrub-Robin v			
<i>Dendrocygna viduata</i>	White-Faced Duck v			
<i>Phylloscopus trochilus</i>	Willow Warbler v			
<i>Tringa glareola</i>	Wood Sandpiper v			
<i>Halcyon senegalensis</i>	Woodland Kingfisher v			
<i>Egretta intermedia</i>	Yellow-Billed Egret			
<i>Eremomela icteropygialis</i>	Yellow-Billed Eremomela			
<i>Tockus leucomelas</i>	Yellow-Billed Hornbill		Near Endemic	
<i>Milvus parasitus</i>	Yellow-Billed Kite			
<i>Apalis flava</i>	Yellow-Breasted Apalis			
<i>Pogoniulus chrysoconus</i>	Yellow-Fronted Tinkerbarbet			
<i>Oriolus oriolus</i>	African Golden Oriole			
<i>Clamator jacobinus</i>	Jacobin cuckoo			
<i>Halcyon chelicuti</i>	Striped kingfisher			
<i>Laniarius aethiopicus</i>	Tropical boubou			
<i>Corvus albus</i>	Pied Crow			