
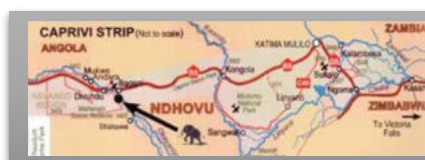




## ENVIRONMENTAL MANAGEMENT PLAN

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Erosion of soil is a deterioration of land due to the removal of its particles. It consists of three basic stages: dislodgement, transportation, and sedimentation. Their speed depends on the soil type, aggregation, infiltration, and ground cover. ....24

Erosion degrades soil quality and is a major reason for farmland loss in the world. Understanding soil erosion causes and its mechanisms will slow down field destruction. Its effects can be quite severe, but prevention and reduction measures, as well as early problem detection, will mitigate the risks.....25

5.4. Handling of Chemicals: .....26

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When managing the risks associated with hazardous chemicals and dangerous goods in the workplace, it is very important that you follow the STOREMASTA methodology. This methodology has four phases, and all phases must be applied to ensure that your workplace is protected from the risk associated with hazardous chemicals.....26

The 4 phases of this methodology are;.....26

1. Identify .....26
2. Assess .....26
3. Control .....26
4. Sustain .....26

If you don't apply this methodology, the chemical storage solution that you implement may not be the correct solution to mitigate the risk associated with the hazardous substances stored onsite.....26

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- Cease use of water during flood events in order to prevent the flooding of septic tanks and leakage of sewage. ....28
- Cease use of water if soils within the evapotranspiration area have been saturated by heavy rainfall. The use of water should only resume once the evapotranspiration area is sufficiently dry to once again allow percolation of effluent through the soil.....28
- Divert water away from the evapotranspiration area and septic tanks in order to prevent flooding and saturation of the soil.....28



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- The septic tanks must be professionally inspected and serviced after flooding events. Septic tanks must be checked in order to ensure that silt and debris has not accumulated within the system. Any silt or debris within the system must be cleaned out by a professional. ....28
- Do not pump the septic tank straight after flooding events when the soil is still saturated as this may result in the tank dislodging from the ground. ....28
- Inspect the septic tanks manhole cover after flooding to ensure that it remains secure. ....28
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### 1. Terms and Definitions

<b>Auditor:</b>	Person with the competence to conduct an audit
<b>Continual improvement:</b>	Recurring process of enhancing the environmental management system in order to achieve improvements in overall environmental performance consistent with the organisation's environmental policy.
<b>Corrective action:</b>	Action to eliminate the cause of a detected nonconformity.
<b>Environment</b>	Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation.
<b>Environmental aspect (EA)</b>	Elements of an organisation's activities or products or services that can interact with the environment.
<b>Environmental impact</b>	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
<b>Environmental management system (EMS)</b>	Part of an organisation's management system used to develop and implement its environmental policy and manage its environmental aspects.
<b>Environmental objective</b>	Overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
<b>Environmental performance</b>	Measurable results of an organisation's management of its environmental aspects.
<b>Environmental policy</b>	Overall intentions and directions of an organisation related to its environmental performance as formally expressed by top management.
<b>Environmental target</b>	Detailed performance requirement applicable to the organisation or parts thereof, that arises



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	from the environmental objectives and that needs to be set and met in order to achieve those objectives.
<b>Interested party</b>	Person or group concerned with or affected by the environmental performance of an organisation.
<b>Internal audit</b>	Systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the environmental management system audit criteria set by the organization are fulfilled.
<b>Nonconformity</b>	Non-fulfilment of a requirement.
<b>Preventive action</b>	Action to eliminate the cause of a potential nonconformity.
<b>Prevention of pollution</b>	Use of processes, practices, techniques, materials, products, services or energy to avoid, reduce or control (separately or in combination) the creation, emission or discharge of any type of pollutants or waste, in order to reduce adverse environmental impacts.

### 1.1. Acronym

### Expansion

<b>BAT</b>	Best Available Technology
<b>BID</b>	Background Information Document
<b>CO</b>	Carbon Monoxide
<b>EIA</b>	Environmental Impact Assessment
<b>EMA</b>	Environmental Management Act
<b>EMP</b>	Environmental Management Plan



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<b>GPS</b>	Global Positioning System
<b>GRN</b>	Government of the Republic of Namibia
<b>HAN</b>	Hospitality Association of Namibia
<b>HDI</b>	Human Development Index
<b>HPP</b>	The Harambee Prosperity Plan
<b>IAPs</b>	Interested and Affected Parties
<b>m<sup>2</sup></b>	square meters
<b>m<sup>3</sup></b>	cubic meters
<b>MEFT</b>	Ministry of Environment, Forestry and Tourism
<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NAMPOWER</b>	Namibia Power Corporation Pty Ltd
<b>NAMWATER</b>	Namibia Water Corporation Ltd
<b>NHC</b>	National Heritage Council
<b>NSI</b>	Namibia Standards Institute
<b>NTB</b>	Namibia Tourism Board
<b>NWR</b>	Namibia Wildlife Resort
<b>KERC</b>	Kavango East Regional Council
<b>PPE</b>	Personal Protective Equipment
<b>MCO</b>	Mukwe Constituency Office
<b>RCLB</b>	Regional Communal Land Board



## ENVIRONMENTAL MANAGEMENT PLAN

DVC	Divundu Village Council
SHE	Safety, Health & Environment
SME	Small and Medium Enterprises
SO2	Sulphur Dioxide
HTA	Hambukushu Traditional Authority

### 2. Purpose of this document:

The EMP contains the necessary mitigation and recommended actions as well as the timeframe and person responsible for the actions. The ultimate responsibility of the implementation of the EMP rests on the Lodge owner/operator. The EMP is a legally binding document that is an important part of the Environmental Assessment process and needs to be strictly adhered to. Workers and contractors must be made aware of the EMP, their responsibilities and sensitive /no go areas. Any transgressions must be treated as serious, with remedial action taken.

The purpose of this document is to provide a detailed description for the methods and procedures that are being implemented to mitigate and monitor the impacts that may be caused during daily activities. This document contains environmental objectives and targets which are set by company management and monitored annually to track and drive continuous improvement in environmental performance.

#### 2.1 OBJECTIVES OF THE EMP

This EMP has the following objectives:

- ✓ To outline functions and responsibilities of the responsible persons involved in the operation of the lodge;
- ✓ To state standards and guidelines which are required to be achieved in terms of environmental legislation;
- ✓ To outline mitigation measures and environmental specifications which must be implemented to ensure environmental and social protection of the surrounding environment;
- ✓ To prevent long-term or permanent environmental degradation; and





## ENVIRONMENTAL MANAGEMENT PLAN

- ✓ To ensure alignment with the National Management Plan of the Reserve. This Management Plan was used to guide the formulation of the EMP and ensure it meets the overall mission, goals and rules.

### 2.3 Different Phases Of The Emp

The EMP provides mitigation and management measures for the following phases of the project:

- **Lodge Operation**

This section of the EMP provides management principles for Lodge commencement. Environmental actions, procedures and responsibilities as required for this phase of lodge operations, are specified.

- **Rehabilitation Phase**

This section of the EMP provides management principles for the rehabilitation phase after construction and if decommissioning of the project is required. Rehabilitation must be viewed as an on-going process and not confined to one phase.

### 2.4 Key Role Players

- **Lodge Applicant/Owner**

The Applicant (Bluebush Eight Investment CC) is ultimately accountable for ensuring compliance with the EMP and the conditions contained in the Environmental Authorisation (EA). The Project Manager will report directly to the Applicant regarding all environmental issues regarding the Lodge.

- **Project Manager**

The Project Manager has the responsibility of managing the project, contractors, and consultants and for ensuring that the environmental management requirements are met. It is of vital importance for the Project Manager to be familiar with the recommendations and mitigation measures of this EMP and ensuring that these measures are implemented. If transgressions occur on site, immediate corrective action must take place and the responsible parties notified. All decisions regarding environmental procedures must be approved by the Project Manager.

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### ▪ Contractor/s

The contractor is responsible for ensuring that construction methods comply with the recommendations and conditions of the EA and EMP.

### 3. Overview:

#### 3.1. Company Background:

Situated along the banks of the great Okavango River and fronted by the breathtaking Buffalo Game Park, Ndhovu Safari lodge offers visitors a pristine river system with a vast adjoining floodplain that is a habitat to both bird and game species. It affords visitors some spectacular vistas over the river into the Buffalo Core area of the Bwabwata national park. These unique spectrum and natural beauty are a treasure that the management of the lodge intends to keep without hinderance. An environmental Management Plan (EMP) is thus developed with the following objectives;



## ENVIRONMENTAL MANAGEMENT PLAN

### 3.2. Lodge Map:



The figure above represents parcel

UPI: K01TJ3A000063

Size: 12.9 ha



1 centimeter = 60 meters  
scale: 1:5 000

Corner points and map display:  
Projection: Geographic  
Datum: WGS84  
Units: Decimal Degree

Corner points:

Point	Latitude	Longitude	Point	Latitude	Longitude	Point	Latitude	Longitude	Point	Latitude	Longitude
1	-18.13312	21.67832	2	-18.13362	21.67756	3	-18.1337	21.67643	4	-18.13667	21.67569
5	-18.13547	21.67737	6	-18.13667	21.67747	7	-18.13693	21.67793	8	-18.13781	21.67849
9	-18.13803	21.6797	10	-18.13776	21.68062	11	-18.13625	21.67967	12	-18.13504	21.67823
13	-18.13437	21.67583									

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### 3.3. Environmental Context:

#### 3.3.1. Topography:



Located at the Kamutjonga village of the Mukwe constituency in the Kavango eastern region of Namibia, Ndhovu Safari lodge is located at the banks of the Okavango River overlooking the Bufalo game park from the southern side. Its vegetation is unharmed except for the areas where construction was done but the lodge is still home to some of the tallest trees in the area. The soil type is semi clay in some areas but loam in most parts of the lodge.

Ndhovu Safari Lodge stands in a beautiful location on the west bank of the Kavango River, between Divundu and the Botswana border at Muhembo. It's just 2km north of the Mahango National Park, making it one of the closest lodges to this small and seldom visited park on Namibia's Caprivi Strip.

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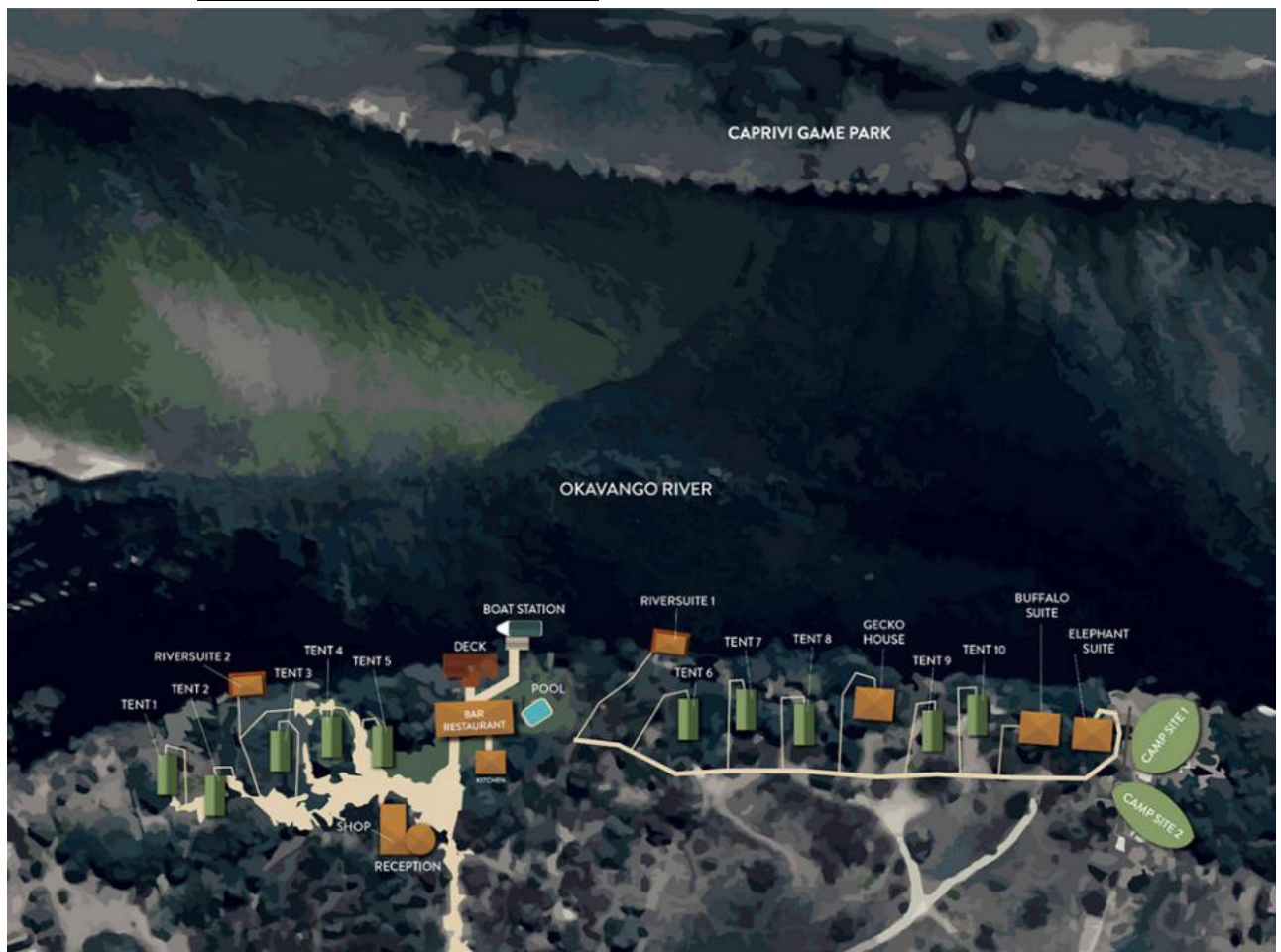
### 3.3.2. Meteorology:

The climate of the region is sub-tropical. Approximately 592 mm of precipitation falls annually, mainly in the summer months. Evenings are usually cool, and temperatures may dip below 10°C (50°F) overnight. In January the area has a variable weather: clear, hot & dry, or cloudy & humid with some rain; Occasional, highly localised thunderstorms but a green vegetation. Access to the lodge during flood season use to be a challenge with cars before which prompted visitors to cross to the lodge using rafts and canoes but now there is an option to use the bridge.

### 3.3.3. Legal Framework:

There exists various legislation that relates to the environmental industry in Namibia. The environmental legislation continues to evolve, resulting in both legislative and regulatory changes that have a material impact on any company and its operations. Environmental legislation in Namibia was promulgated because environmental degradation must at the very least be minimised and at the most prevented.

### 3.3.4. Ndhovu Safari Location:





## ENVIRONMENTAL MANAGEMENT PLAN

### 4. Environmental Policy

#### NDHOVU SAFARI LODGE

#### ENVIRONMENTAL POLICY

The management and employees of **NDHOVU SAFARI LODGE** are aware of our responsibility to act as custodians of our natural environment. In order to ensure sustainable production and enhance product confidence, we are committed to:

- Ensuring compliance with relevant environmental legislation
- Ensuring responsible use of our natural resources
- Minimising the generation of waste and the responsible handling of any waste generated
- Ensure energy efficiency and reduce greenhouse gas emissions
- Improve water-use-efficiency
- Control alien invasive plants (IAP)
- Make use of healthy soil practices
- Prevent contamination to soil and water bodies
- Restore natural ecosystems

**NDHOVU SAFARI LODGE** is committed to continual improvement of environmental performance. This policy will be reviewed annually and the necessary changes will be communicated to all staff, contractors and suppliers.

Endorsed by: **Mr. Daniel Hausladen,**  
**The Manager**  
**Ndhovu Safari Lodge**

Signature:  \_\_\_\_\_

Date: 28 August 2023



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### 5. Environmental Management

#### 5.1. Environmental Management Structure and Management

Ndhovu Safari Lodge team should seek and record evidence that Top management is taking a 'hands-on' approach to the management of the EMS. Be prepared to constructively challenge Top management's commitment to the EMS. Auditing this tier of management is likely to be a new experience for many people, so it is important that they have a good understanding of management activities in order to effectively engage with them.

Top management is now required to emphasize the importance of conforming to the EMS requirements. Additionally, it must also ensure that the EMS is achieving its intended results, and that continual improvement is driven within the organization. If it is evident that the Top management is not involved with the EMS, a major non-conformance is likely.

Auditors should look for evidence that top management has a 'hands-on' approach to the management of their EMS during interviews and auditing other requirements e.g. Context of the organization, policies and objectives, Management review minutes, Resources etc. Evidence of Top management involvement may be found in:

- a. Business strategy plans and meetings;
- b. Environmental goals and communications;
- c. Information provided on the organization's website;
- d. Annual reports;
- e. Management meeting minutes.

Management involvement must now be demonstrated and cannot be simply confined to annual management reviews. Auditors should ensure that they are well prepared to interview the Top management in respect of their commitment to their EMS. A good understanding of management-related processes and language used by Top management can be helpful to engage with management on a range of issues.

Without solid management commitment, you will not have a successful environmental management system. This is not a commitment in words; it is the continuous and active demonstration to everyone in the organization that the need to meet customers' expectations is vital. The actions required of Top management must include:

- I. Supporting EMS and actively promote the agenda;



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- II. Encouraging the goal of meeting, customer, regulatory and statutory requirements.
- III. Develop and support the EMS by:
- Defining and communicate the EMS policies;
  - Establishing organizational EMS objectives;
  - Ensuring appropriate resources are available.

Implement and improve the EMS by:

- Encouraging employees to achieve requirements;
- Reviewing EMS performance;
- Ensuring resources are available to improve the EMS.

Provide the names and positions of the personnel that are responsible for different aspects of environmental management in your company, for example waste management, water usage, energy and fuel monitoring etc. Give a brief description of the roles and responsibilities of each identified person and provide the environmental responsibilities of subcontractors at your company.

### 5.2. Legal Compliance

We, NDHOVU SAFARI LODGE, declare that we comply with the following Namibian Environmental Legislation that is applicable to our company or lodge. These legislations vary from natural to heritage resources and those that are included in the SIZA Environmental Standard are:

- NEMA – the National Environmental Management Act 7 of 2007
- WRAMA – the Water Resource Management Act 11 of 2013
- SCA – the Soil Conservation Act 76 of 1969 (RSA)
- NHRA –the National Heritages Act 27 of 2004
- Acts of Parliament, Regulations, Ordinances, Proclamations
- The Constitution of the Republic of Namibia 1990 (and First Amendment Act 34 of 1998, Second Amendment Act 7 of 2010, and Third Amendment Act 8 of 2014)
- Public Health Act 36 of 1919 (as amended by SWA (South West Africa) Proclamation 36 of 1920) (to be repealed by the Public and Environmental Health Act 1 of 2015 when that Act comes into force)
- Employees' Compensation Act 30 of 1941 (as amended in South Africa prior to Namibian independence) (Amendment Act 5 of 1995 amends the Act substantially and changes its name from the Workmen's Compensation Act to the Employees' Compensation Act) (and the General Regulations 1961 (as amended))
- Water Act 54 of 1956 (as made applicable in Namibia)





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- Soil Conservation Act 76 of 1969 (as amended in South Africa to March 1978)
- General Health Regulations (Government Notice 121 of 14 October 1969 as amended)
- Accommodation Establishments and Tourism Ordinance 20 of 1973 (and Amendments 25 of 1973, 17 of 1974, 12 of 1975, 5 of 1977, 14 of 1977, 4 of 1978, 11 of 1978 and 14 of 1979) (and the Regulations on Tourist Recreation Areas 1974 and the Regulations relating to Accommodation Establishments and Tourism 1974))
- Hazardous Substance Ordinance 14 of 1974 (and the General Regulations 1979; no post-independence regulations have been promulgated)
- International Health Regulations Act 28 of 1974 (as amended to December 1977)
- Nature Conservation Ordinance 4 of 1975 (and the Regulations Relating to Nature Conservation 1976 and the amended Regulations)
- Atmospheric Pollution Prevention Ordinance 11 of 1976 (Regulations are authorized by several sections of the Act; no post-independence regulations have been promulgated)
- Regional Councils Act 22 of 1992 (and Amendment Acts 17 of 1997, 30 of 2000, 12 of 2002, 12 of 2010, 16 of 2010, and 7 of 2017) (and the Regulations: Commercialization Regulations 2001; Joint Business Venture Regulations 2001; and Tender Board Regulations 2001)
- Social Security Act 34 of 1994 (as amended by the State-owned Enterprises Governance Act 2 of 2006/ Public Enterprises Governance Act 2 of 2006, and the Labor Act 11 of 2007 (and the General Regulations 1995, and amendments))
- Affirmative Action (Employment) Act 29 of 1998 (as amended by Act 6 of 2007 and the Labor Act 11 of 2007) (and the General Regulations 1999)
- Road Traffic and Transport Act 22 of 1999 (as amended by the Road Traffic and Transport Amendment Act 6 of 2008) (and the Road Traffic and Transport Regulations 2001)
- Namibia Tourism Board Act 21 of 2000 (as amended by the State-owned Enterprises Governance Act 2 of 2006/Public Enterprises Governance Act 2 of 2006) (and the Regulations relating to levies payable by accommodation establishments 2004, the Regulations relating to the registration of regulated businesses 2004, the Regulations relating to the registration of accommodation establishments 2004, and the National Star Grading Regulations relating to Accommodation Establishments 2012)



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- Traditional Authorities Act 25 of 2000 (and the Regulations 2001)
- Inland Fisheries Resources Act 1 of 2003 (and the Regulations)
- Environmental Management Act 7 of 2007 (and the Environmental Impact Assessment Regulations 2012)
- Labor Act 11 of 2007 (and the Labor Amendment Act 2 of 2012) (and the Regulations relating to the Health and Safety of Employees at Work 1997, the Labor General Regulations 2008, and the Regulations relating to Domestic Workers 2017)
- Tobacco Products Control Act 1 of 2010 (and the Regulations 2014)
- Water Resources Management Act 11 of 2013 (to be brought into force on a date set by the Minister by notice in the Government Gazette)
- Public and Environmental Health Act 1 of 2015 (to be brought into force on a date set by the Minister by notice in the Government Gazette)
- Policies, Guidelines, National Strategies & Action Plans
- Policies
- Conservation of Biotic Diversity and Habitat Protection 1994
- Namibia: National Code on HIV/AIDS in Employment 2000
- National Water Policy White Paper - Policy Framework for Equitable, Efficient, and Sustainable Water Resources Conservation of Biotic Diversity and Habitat Protection 1994
- Namibia: National Code on HIV/AIDS in Employment 2000
- National Water Policy White Paper - Policy Framework for Equitable, Efficient, and Sustainable Water Resources
- Management and Water Services 2000
- Namibia's Draft Wetland Policy 2004
- National Policy on HIV/AIDS 2007
- Policy on Tourism and Wildlife Concessions on State Land 2007
- Water Supply and Sanitation Policy (WASP) 2008
- National Policy on Tourism for Namibia 2008
- National Gender Policy 2010 - 2020
- National Health Policy Framework 2010-2020 - "towards quality health and social welfare services"
- National Policy on Climate Change for Namibia 2011
- National Policy on Community Based Natural Resource Management 2013
- Revised National Policy on Human Wildlife Conflict Management 2018-2027
- Guidelines



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- Code of Practice: Volume 1 Septic Tank Systems General Guidelines June 2007
- \*Draft Water Quality Guidelines and Standards for Potable Water, as well as Water Quality Standards for Effluent 2008
- Petroleum Products Regulations, 2000 Guidelines for Consumer Installations
- National Strategies & Action Plans
- Namibia's Green Plan 1992
- Vision 2030 2004
- National Climate Change Strategy & Action Plan (2013 - 2020)
- Namibia's Second National Biodiversity Strategy and Action Plan (NBSAP 2) (2013 - 2022)
- Third National Action Programme for Namibia to Implement the United Nations Convention to Combat Desertification (2014 - 2024)
- Namibia's 5th National Development Plan (NDP5) - Working together towards prosperity (2017/18 - 2021/22)
- National Solid Waste Management Strategy 2018
- Town Planning Schemes, Structure Plans, & Land Use Plans
- Strategic Environmental Assessments (SEAs)
- International Law
- African Union (AU)/Regional
- African Charter on Human and Peoples' Rights (Banjul Charter) 1981, the Protocol to the African Charter on Human and Peoples' Rights on the establishment of the African Court on Human and Peoples' Rights 1998 (non-binding), and the Protocol to the African Charter for Human and Peoples' Rights on the Rights of Women in Africa 2003
- Revised (Algiers) Convention on the Conservation of Nature and Natural Resources 2003 African Convention on the Conservation of Nature and Natural Resources (Revised Version) 2003 (non-binding)
- Agreement for the Establishment of the Africa Institute for the Environmentally Sound Management of Hazardous and Other Wastes Agreement 2004
- Treaty on the Establishment of the Kavango Zambezi Trans frontier Conservation Area (KAZA TFCA) 2011
- Regional Policy Guidelines Economic Instruments for the Environmentally Sound Management of Waste Oil 2013
- Southern African Development Community (SADC)
- Treaty of the Southern African Development Community 1992 (and Agreement Amending the Treaty 2001; Agreement



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- Amending Article 22 of the Treaty 2007; Agreement Amending the Treaty 2008; Agreement Amending the Treaty 2009
- DES; and Agreement Amending the Treaty 2009 – ORGAN)
- Charter of the Regional Tourism Organisation of Southern Africa (RETOSA) 1997
- Protocol on the Development of Tourism 1998
- Protocol on Health 1999
- SADC Protocol on Shared Watercourse Systems 1995 - Note: This Protocol has been repealed and replaced by the
- SADC Revised Protocol on Shared Watercourses, 2000, for the SADC member states that are parties to the Revised
- Protocol. The 1995 Protocol remains in force between Namibia and SADC states that are a party to it but not to the
- Revised Protocol.
- Charter of Fundamental Social Rights in SADC 2003
- SADC Protocol on Environmental Management for Sustainable Development 2014 (non-binding)
- United Nations (UN) / International Conventions
- Constitution of the Food and Agriculture Organization of the United Nations (FAO) 1945
- Constitution of the World Health Organization (WHO) 1946 (and Amendment to Article 7 of the Constitution of the World
- Health Organization 1965; Amendment to Article 74 of the Constitution of the World Health Organization 1978;
- Amendments to Articles 24 and 25 of the Constitution of the World Health Organization 1986; and Amendments to
- Articles 24 and 25 of the Constitution of the World Health Organization 1998)
- International Convention on the Elimination of All Forms of Racial Discrimination 1966
- International Covenant on Economic, Social and Cultural Rights (ICESCR) 1966
- Statutes of the World Tourism Organization (UNWTO) 1970 (Amendment to Article 38 of the Statutes of the World
- Tourism Organization 1979)
- Declaration of the United Nations Conference on the Human Environment 1972
- Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) 1979 and Optional Protocol to



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- the Convention on the Elimination of all Forms of Discrimination against Women 1999
- Vienna Convention for the Protection of the Ozone Layer 1985 and Montreal Protocol on Substances that Deplete the
- Ozone Layer 1987 (and Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, Adopted
- at the Second Meeting of the Parties on 29 June 1990; Amendment to the Montreal Protocol on Substances that Deplete
- the Ozone Layer, Adopted at the Fourth Meeting of the Parties at Copenhagen on 25 November 1992; Amendment to
- the Montreal Protocol on Substances that Deplete the Ozone Layer, Adopted by the Ninth Meeting of the Parties at
- Montreal on 17 September 1997; and Amendment to the Montreal Protocol on Substances that Deplete the Ozone
- Layer, at the Eleventh Meeting of the Parties on 3 December 1999)
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal 1989
- Convention on Biological Diversity (Biodiversity Convention) 1992, the Cartagena Protocol on Biosafety to the
- Convention on Biological Diversity, Montreal 2000, and the Nagoya Protocol on Access to Genetic Resources and the
- Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity 2010
- United Nations (UN) Framework Convention on Climate Change 1992 and the Kyoto Protocol to the UN Framework
- Convention on Climate Change 1997
- United Nations Convention to Combat Desertification (UNCCD) in those Countries Experiencing Serious Drought and/or
- Desertification, Particularly in Africa 1994
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in
- International Trade 1998 with Annexes as amended
- Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances
- 2000 (OPRC-HNS Protocol)
- Stockholm Convention on Persistent Organic Pollutants (POPs) 2001 with Annexes (as amended in 2009, 2011, 2013
- and 2015)
- Convention for the Safeguarding of the Intangible Cultural Heritage 2003



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- WHO Framework Convention on Tobacco Control (WHO FCTC) 2003
- Convention on the Protection and Promotion of the Diversity of Cultural Expressions 2005
- World Health Organization (WHO) International Health Regulations 2005
- United Nations Guiding Principles on Business and Human Rights 2011
- Paris Agreement (United Nations Framework Convention on Climate Change) 2016
- International Best Practice
- International Finance Corporation (IFC) Environmental Health and Safety (EHS) Guidelines 2007 and the EHS
- Guidelines for Tourism and Hospitality Development 2007
- \*The Department of Water Affairs and Forestry, Ministry of Agriculture, Water and Forestry prepared Water Quality Guidelines and these were adopted in 1998. Subsequently (in 2008), draft Water Quality Guidelines and Standards for Potable Water, as well as Water Quality Standards for Effluent were prepared to become Regulations under the Water Resources Management Act 24 of 2004 (which never came into force). The latter Guidelines/Standards may be used, but

**NDHOVU SAFARI LODGE** is committed to the above-mentioned legislation and compliance will be reviewed annually to ensure that we remain up-to-date with the Environmental Legislation of Namibia.

Endorsed by: **Mr. Daniel Hausladen,**  
**The Manager**  
**Ndhovu Safari Lodge**

Signature: \_\_\_\_\_

Date: 28 August 2023

## ENVIRONMENTAL MANAGEMENT PLAN

### 5.2.1. Pollution Prevention & Incidents (Buffer zones)

Buffer zones protect and enhance water quality and aquatic habitat by providing shade that moderates sunlight and water temperature, infiltrating and slowing runoff flows, trapping sediment and other pollutants in stormwater, providing habitat for fish and wildlife, and stabilizing shorelines and preventing erosion.

Buffers also provide visually appealing shorelines, all of which can improve surrounding property values. Maintaining buffer zones during construction is important to preserving these benefits.

**Natural buffers** must remain undisturbed and must not be used as sediment treatment areas or as storage areas for construction equipment or materials.

### 5.2.2. Monitoring of water quality (Water samples)

**License:** Ensure that a water use license for the property is obtained from the line ministry and is kept up to date.

**Consumption:** Monitor water consumption to ensure that there is no undue waste. If a consumption limit is granted ensure that consumption does exceed such limits.

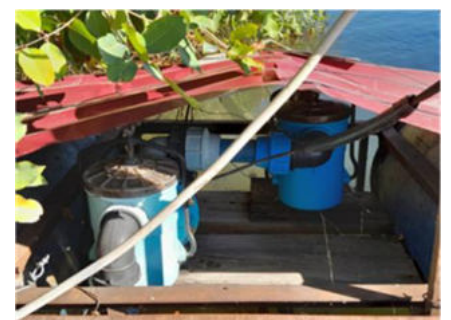
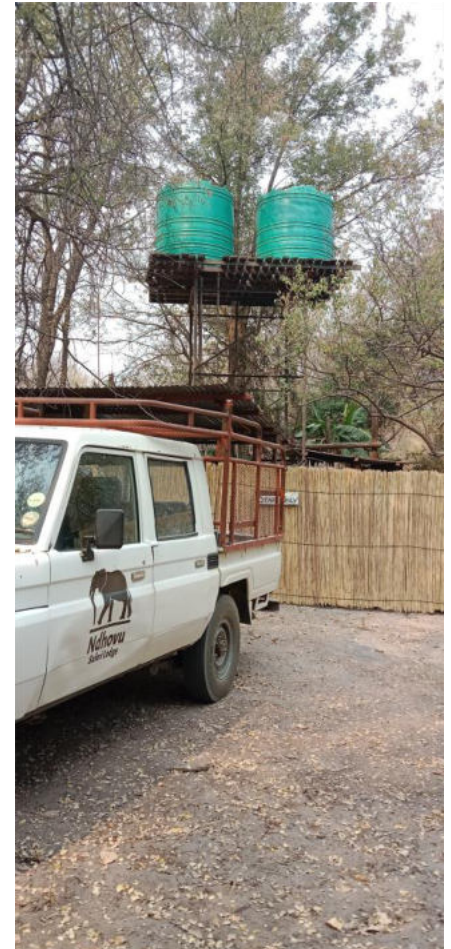
**Leaks:** Install a leak detection system, and promptly attend to any leaks when detected

**Quality:** Conduct water quality monitoring periodically to ensure that the output quality of the water complies with the minimum prescribed water quality standards.

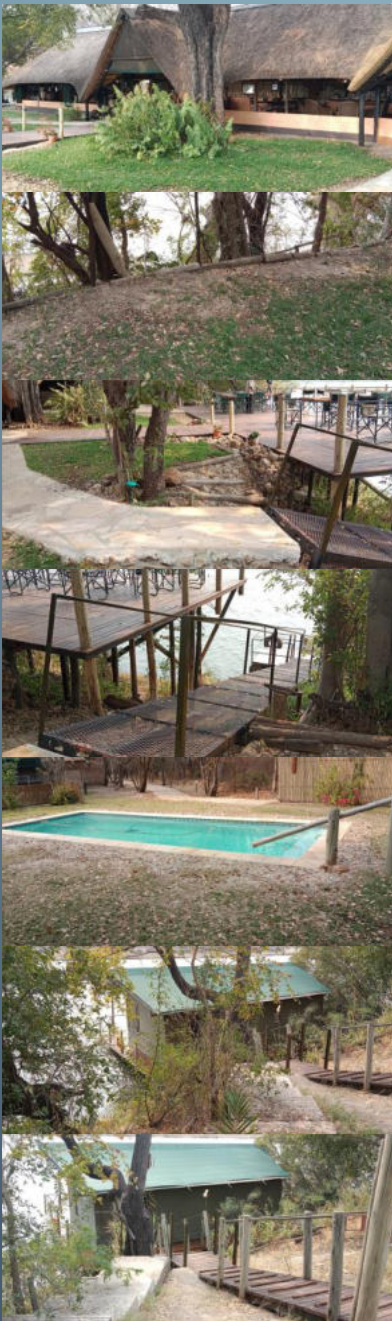
### 5.2.3. Pollution incidents and corrective actions

If any water pollution incident(s) occurred on the lodge;

1. The best way to protect streams from water pollution is to prevent at the source! This means



## ENVIRONMENTAL MANAGEMENT PLAN



SOIL EROSION  
REDUCTION EFFORTS

keeping litter and other trash out of creeks in Raleigh. It's also important to keep trash out of yards.

### 2. Ways to Prevent Water Pollution

3. Pick up litter and throw it away in a garbage can.

4. Blow or sweep fertilizer back onto the grass if it gets onto paved areas. Don't put fertilizer on the grass right before it rains. The chemicals will wash into storm drains and waterways.

5. Mulch or compost grass or yard waste.

6. Wash your car or outdoor equipment where it can flow to a gravel or grassy area instead of areas near the river banks.

7. Don't pour your motor oil down the storm drain. Take it to the nearest auto parts store. It's free!

8. Never clean up a spill by hosing it into a storm drain. Place kitty litter, sand, or another absorbent on the spill. Once the liquid becomes solid - sweep it up and throw it in a garbage can.

### 5.3. Soil Management:

#### 5.3.1. Pollution prevention practices

Soil pollution (also referred to as land contamination) is defined as the condition in which the land and soil present an existing or potential risk to our health or the surrounding environment. It is often linked to the fact that in the affected area, contaminants (such as chemicals and waste) are present in levels that are above the acceptable amount.

Soil contamination can be caused by a number of factors. Three common causes of soil pollution include:

1. Industrial activity
2. Waste disposal
3. Agriculture





## ENVIRONMENTAL MANAGEMENT PLAN

### 5.3.2. Use of healthy soil practices (conservation & restoration)

#### ✓ *Use bio-fertilisers*

A bio-fertiliser is a substance containing living microorganisms. When it is given to plants, soil and seeds, it increases the supply of nutrients to the host plant. This is a much healthier fertiliser option for our environment (as opposed to chemical fertiliser).

Chemical fertilisers - while they do increase crop yield - actually cause the soil to lose its valuable fertility. Aside from the effect on soil, chemical fertilisers are harmful to other aspects of the environment, too. In areas with high rainfall, for example, chemical fertilisers can pollute groundwater and waterways.

#### ✓ **Reduce your toxic waste levels**

Chemical and oil spills do occur in the areas that are most synonymous with soil pollution (i.e. agriculture, waste disposal, mining and other industrial activity). And spills don't just affect soil integrity - they're a pollutant of groundwater as well.

One way that you can reduce the likelihood of an undetected spill is to conduct regular inspections of your chemical containers to ensure there are no leakages. You should also ensure each chemical is clearly labelled and that the lids are firm and secure. Another area for review is your waste disposal method. Are you disposing of the chemicals in a way that is as environmentally friendly as possible?

Perhaps the best way to reduce the chance of a spill is to only use chemicals when absolutely necessary. It can be helpful to review your stock levels and assess whether you really need that new batch of chemicals.

### 5.3.3. Erosion and Compaction

Erosion of soil is a deterioration of land due to the removal of its particles. It consists of three basic stages: dislodgement, transportation, and sedimentation. Their speed depends on the soil type, aggregation, infiltration, and ground cover.



## ENVIRONMENTAL MANAGEMENT PLAN

Erosion degrades soil quality and is a major reason for farmland loss in the world. Understanding soil erosion causes and its mechanisms will slow down field destruction. Its effects can be quite severe, but prevention and reduction measures, as well as early problem detection, will mitigate the risks.

### **I. Natural Factors Of Soil Erosion**

- **Strong wind gusts.** Heavy winds remove dry tiny earth particles, which is a typical problem in semi-arid regions leading to desertification.
- **Climate change.** Abnormal rainfalls or temperature leaps destroy the field surface. Another effect of climate change on soil erosion is stunted vegetation growth that reduces field cover and exposes it to rains and winds.
- **Rainfall and Flooding.** Excessive rains wash away topsoil particles, while large raindrops hit the field surface and destroy it with heavy splashes. Running currents during floods is another cause of soil erosion.
- **Wildfires.** Trees and shrubs slow down water run-offs. When forests or buffer zones are destroyed by wildfires, water streams have no obstacles in their way.

### **II. Soil Erosion By Human Activities**

Apart from natural factors, soil erosion occurs due to irresponsible farm management or deforestation for urban area expansion, tourism development, road construction, and more.

### **Solutions To Soil Erosion**

Decision-making in soil erosion control depends on factors like the soil type, topography, or climate specifics. It is important to analyze the effectiveness of undertaken methods and adjust them for individual fields.

Success starts with early problem detection and the choice of suitable methods depending on its severity. For example, replanting, cover crops, or mulching can be good ways to reduce soil erosion in the initial stages because vegetation protects fields from destruction by water run-offs, raindrops, and wind. In severe cases, the impact can be mitigated with terrace farming or check dams.

## ENVIRONMENTAL MANAGEMENT PLAN

Other soil erosion control measures include contour cropping and planting perennials with strong root systems to fix the ground and slow down water streams

### 5.4. Handling of Chemicals:

The incorrect usage of chemicals, particularly pesticides and fungicides, can cause irreparable harm to humans and the environment. Procedures and requirements pertaining to the handling, storage and disposal of agricultural remedies on farms are contained in SANS 10206:2010.

#### 5.4.1. Handling and application of chemicals

When managing the risks associated with hazardous chemicals and dangerous goods in the workplace, it is very important that you follow the STOREMASTA methodology. This methodology has four phases, and all phases must be applied to ensure that your workplace is protected from the risk associated with hazardous chemicals.

The 4 phases of this methodology are;

1. Identify
2. Assess
3. Control
4. Sustain

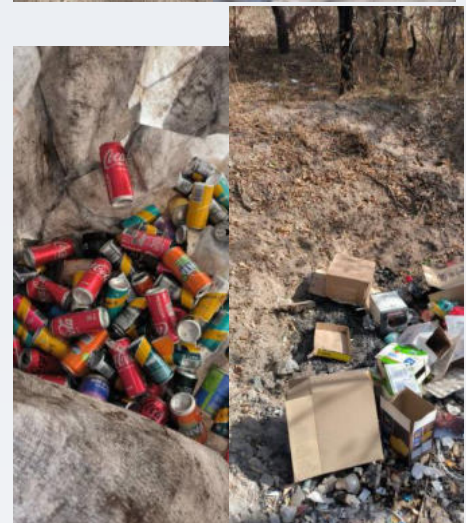
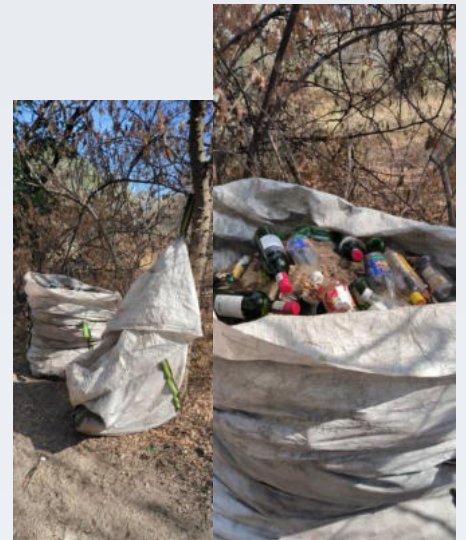
If you don't apply this methodology, the chemical storage solution that you implement may not be the correct solution to mitigate the risk associated with the hazardous substances stored onsite.

### 5.5. Waste Management:

#### 5.5.1. Waste Categories:

The operations of NDHOVU SAFARI LODGE will generate a range of waste. Produced waste is then classified into the following categories:

## Waste Management





## ENVIRONMENTAL MANAGEMENT PLAN

- Re-use: If surplus materials can be used in future operations it is classified as materials which can be re-used. Materials that can be reused in its present form and meet the necessary requirements, will be labelled and stored for future reference.
- Recycling: If surplus materials cannot be reused in its present form, but could be used in a different form, it will be sent for recycling or labelled as future recycling.
- Landfill: If the above-mentioned options cannot be satisfied, the only alternative left is to send the surplus materials to landfill. Under no circumstances will biological or non-biological waste be dumped in water resources.

### 5.5.2. Record Keeping of all Waste Streams:

There are five main types of waste streams: municipal solid waste, commercial and industrial waste, construction and demolition waste, liquid waste, and hazardous waste. Within these, there are subcategories of waste and various smaller waste streams.

The municipal solid waste industry has four components: recycling, composting, disposal, and waste-to-energy via incineration. There is no single approach that can be applied to the management of all waste streams. Ndhovu Safari lodge follows a similar approach in waste management.

A 5000 liters gravity **French drain** concrete **sewage system** has been constructed to serve the property. Sewage from the two sections (guestrooms and kitchen/restaurant) of the property will flow under gravity to a collective double chamber screened septic tank. There is a fat trap system at the kitchen area for grey water from the main lodge and laundry. The volume of the fat trap system has not been indicated.

Once the sewage collects in the septic tank, heavy solids would settle to the bottom where bacteria break them down to form a sludge layer. The liquid portion of the wastewater would move through the middle or clear zone of the tank and flows out of the outlet pipe into a drain field. Normally for every liter of wastewater that enters the septic tank, one liter of water is pushed out of the tank through the baffle and enters the drain field. Solids remain in the septic tank and gradually build up and should be removed at least three times in 12 months.



## ENVIRONMENTAL MANAGEMENT PLAN

### 5.5.3. SEPTIC TANK FLOODING

In the unlikely event of flooding, the following actions must take place:

- Cease use of water during flood events in order to prevent the flooding of septic tanks and leakage of sewage.
- Cease use of water if soils within the evapotranspiration area have been saturated by heavy rainfall. The use of water should only resume once the evapotranspiration area is sufficiently dry to once again allow percolation of effluent through the soil.
- Divert water away from the evapotranspiration area and septic tanks in order to prevent flooding and saturation of the soil.
- The septic tanks must be professionally inspected and serviced after flooding events. Septic tanks must be checked in order to ensure that silt and debris has not accumulated within the system. Any silt or debris within the system must be cleaned out by a professional.
- Do not pump the septic tank straight after flooding events when the soil is still saturated as this may result in the tank dislodging from the ground.
- Inspect the septic tanks manhole cover after flooding to ensure that it remains secure.
- Inspect areas above septic tanks as well as the evapotranspiration area for disturbance.
- Repair any erosion damage and reseed areas as necessary to provide cover.

### 5.5.4. Disposal & Transportation of Waste:

Waste which cannot be disposed of at the lodge, is transported to Divundu dumpsite and disposed of there.

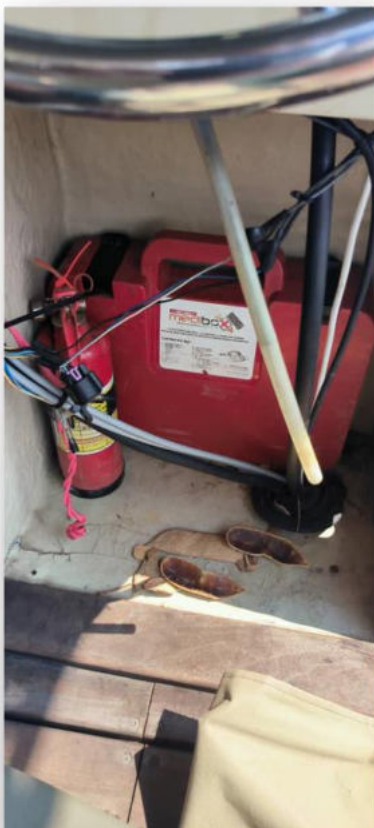
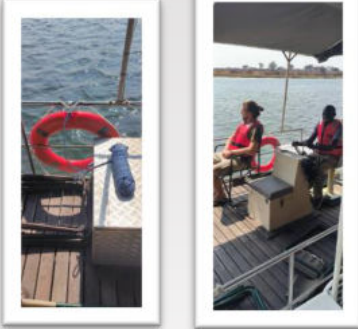
## 6. FIRE FIGHTING

Procedures for firefighting must be implemented. It is the responsibility of the Lodge Manager to ensure that the lodge meets with the minimum Legislative requirements and ensure that firefighting equipment is maintained and in good working order as in accordance with the Ndhovu Safari Lodge Management Plan.

In case of a fire, all guests and employees must assemble as quickly as possible at the assembly point assigned to each section of the lodge.

## BOAT SAFETY

## ENVIRONMENTAL MANAGEMENT PLAN

**7. Fire Fighting Equipment:**

Ndhovu Safari Lodge is equipped with Personal Protective Clothing. Including:

- ✓ One fire resistant overall;
- ✓ One pair leather boots; and
- ✓ One pair leather gloves.

**7.1.1. Waste Reduction Plan & Goal:**

To reduce the amount of waste that is being produced at NDHOVU SAFARI LODGE, we will implement all possible waste reduction procedures and therefore reduce the amount of waste to be removed from sites. Management, staff, contractors and suppliers will be encouraged to explore ways to minimise the amount of waste generated at the work site. We make use of the following practices to reduce the amount of waste that is being produced on site:

1. Using refillable dispensers for soaps, shampoos, and conditioners
2. Using washable cloth products and dishware instead of disposable ones
3. Using water filters instead of plastic bottles
4. Reducing and reusing supplies packaging materials
5. Reducing the number of paper products
6. Switching to LED lights

All vehicles are equipped with fire extinguishers. The rooms and tents are fitted with portable fire syrens. In case of a fire a petrol centrifugal pump is used to pump water from the river to help combat its spread.

## ENVIRONMENTAL MANAGEMENT PLAN

Due to a natural fire break occurring around the proposed Mahangu River Lodge site, fire from surrounding areas is unlikely to impact on the lodge. Minimum firefighting equipment must include

### 7.1.2. Emergency Plan/Procedure:

In case of a fire, all guests and employees must assemble as quickly as possible at the assembly point assigned to each section of the lodge.

### 8. Training:

Training that the employers and employees conducted in terms of Environmental Management.

- Safe and appropriate handling of agrochemicals, fuels etc.
- Appropriate IAP clearing methods & techniques
- Fire Fighting
- Basic First Aid

### 9. Summary of Conservation Actions (APO):

The World Wildlife Fund Namibia (WWF) initiated this rapid systematic conservation plan (SCP) or conservation prioritization plan for the Zambezi and Kavango East Regions of Namibia. The area forms part of the Kavango Zambezi (KAZA) Transfrontier Conservation Area (TFCA). It is a priority conservation landscape given that it supports critical wildlife corridors linking Namibia to its neighbouring TFCA countries, Angola, Botswana, Zambia and Zimbabwe. Ndhovu Safari Lodge intends to be part of this conservation action plan.

The lodge has put up rules to conserve the natural habitation for the river fish and mammals to remain undisturbed and unhindered. The following rules are set enforce this conservation:

1. No fishing is aloud near the banks of the lodge boundaries.
2. No loud noise.
3. No disturbance of the river wild.
4. No swimming in the river.
5. No hunting.
6. No harvesting of reeds at the banks of the river within the lodge boundaries

