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REPORT:

ENVIRONMENTAL MANAGEMENT PLAN FOR THE LIANSHULU LODGE ESTABLISHMENT

PROJECT NUMBER: ECC-153-618-REP-05-D

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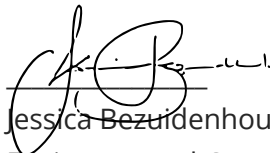
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ABBREVIATIONS

Abbreviation	Description
<	less than
>	greater than
°C	degrees celsius
dB	decibels
ECC	Environmental Compliance Consultancy (Pty) Ltd
ECC	environmental clearance certificate
ESIA	environmental and social impact assessment
EMP	environmental management plan
GPS	global positioning system
ha	hectares
IFC	International Finance Corporation
km/h	kilometre per hour
m	metre
mm	millimetre
m ²	square metre
m ³	cubic metre
MAWLR	Ministry of Agriculture, Water and Land Reform
MSDS	material safety data sheet
MEFT	Ministry of Environment, Forestry and Tourism
MIME	Ministry of Industries, Mines and Energy
NHC	National Heritage Council
Ltd.	limited
PPE	personnel protective equipment
Pty	proprietary
OSH	occupational safety health
RoD	record of decision
SHE	safety health and environment

1 INTRODUCTION

1.1 PROJECT BACKGROUND

Environmental Compliance Consultancy (Pty) Ltd (ECC) has been contracted by N/a'an Ku Sê Wildlife Experience (Pty) Ltd, on behalf of Burgland Zani Safaris (Pty) Ltd, (herein referred to as 'the Proponent' or Naankuse) to submit an environmental clearance certificate application and develop an environmental management plan (EMP) for the operation of the existing Lianshulu Lodge and Bush Lodge and development of Lianshulu Safari Lodge, a high-end lodge establishment in the Mudumu National Park, Zambezi Region, Namibia.

The Lianshulu lodge establishment is situated along the banks of the Kwando River, on an 800-ha private concession within the Mudumu National Park. It is located approximately 40 km from Kongola, to the west of the C49 main road, after entering Mudumu National Park in the Zambezi Region of Namibia. The lodge establishment occupies a prime location next to the Kwando River, with Botswana on the opposite side of the river, as shown in Figure 1.

1.2 PROJECT DESCRIPTION AND SITE LAYOUT

Burgland Zani Safaris (Pty) Ltd will provide the capital to acquire the concession and invest in the infrastructure. The concession will be operated via a property management agreement through N/a'an Ku Sê Wildlife Experience in terms of the standard policies of the N/a'an Ku Sê Group.

In this report, the Project is collectively referred to as the Lianshulu lodge establishment, or simply Lianshulu, to represent it as a single, interconnected lodge operation made up of multiple components, which include the existing Lianshulu Lodge (constructed in 1989) and Lianshulu Bush Lodge (constructed in 1998). As part of the planned expansion, a third lodge is proposed to be developed between the two existing lodges, situated along the banks of the Kwando River.

Lianshulu Lodge offers eight twin en-suite guest rooms, two double rooms and one family room, with a total capacity of 24 guests, along with two guide rooms.

Lianshulu Bush Lodge comprises 12 en-suite chalets, in addition to two guide rooms. Four chalets overlook the lagoon marsh, while another four are nestled within dense bush vegetation. All units feature private decks.

Both of these lodge areas are equipped with a reception area and a river-viewing deck, supported by spacious kitchens and service facilities. Accommodation is available on a full board or dinner, bed and breakfast basis.

Lianshulu Safari Lodge (or Ubabalela Lodge) will feature six high-end tented units elevated 2.5 meters above ground level on raised walkways. This expansion will be located between the Lianshulu Lodge and the Lianshulu Bush Lodge, as seen in Figure 1.

Additionally, the construction of the Lianshulu operations hub is planned, which will include:

- 15 staff houses;
- Laundry area;
- Workshop;
- Managers house;
- Solar installation; and
- Garden of Eden (small garden for crops, fruits and vegetables).

In terms of guest capacity, the lodges can comfortably accommodate 24 guests daily at the Lianshulu Lodge, 12 guests daily at the Bush Lodge and 12 guests daily at the Ubabalela / Lianshulu Safari Lodge, while employing 75 staff members to operate efficiently.

The lodge establishment will receive its power from solar panels on-site and is equipped with backup diesel generators. The establishment relies on a daily water supply ranging from 5 m³ to 12 m³, pumped from a local borehole. The Lianshulu lodge establishment also offers various recreational and leisure activities for guests.

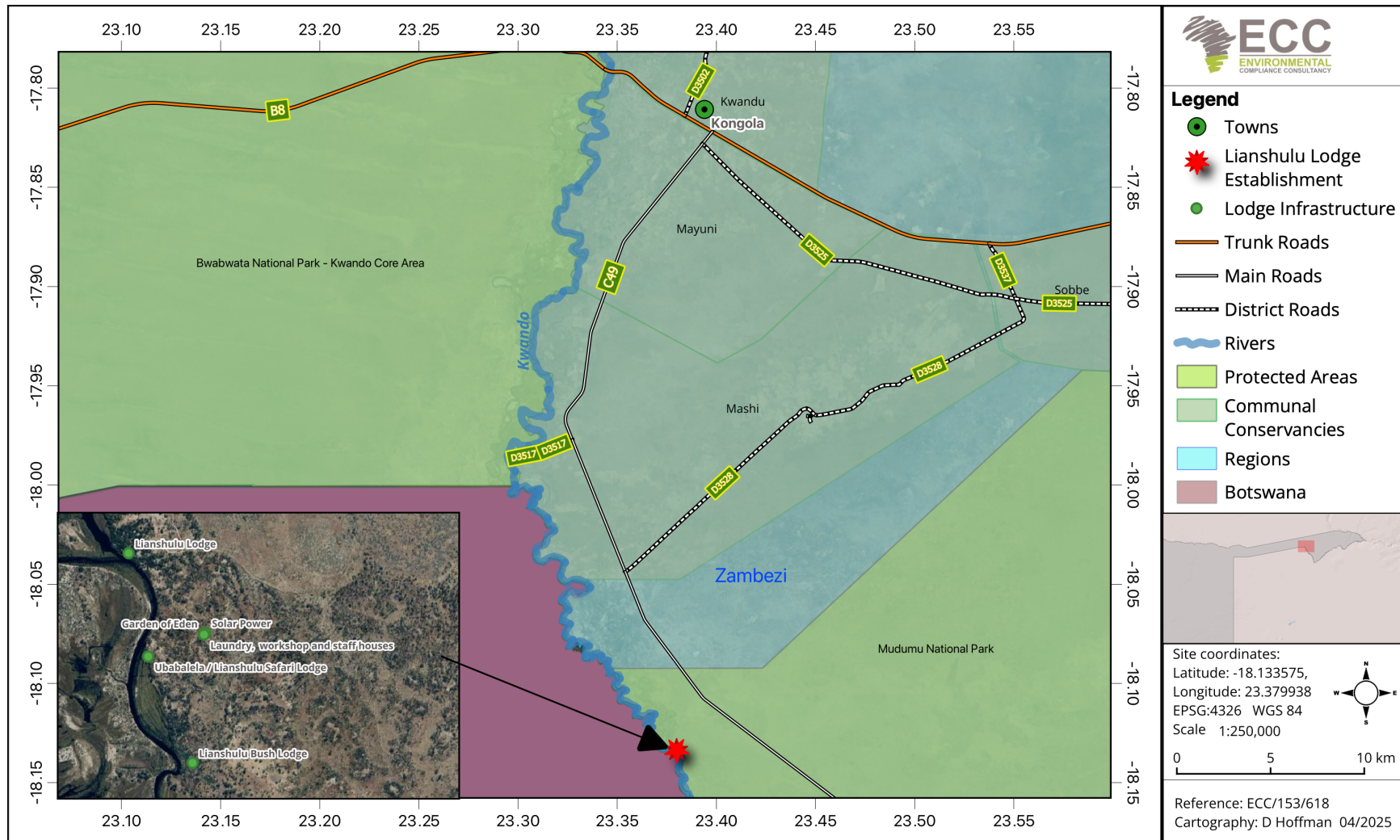


Figure 1 - Location of the Lianshulu lodge establishment

1.3 BIOPHYSICAL ENVIRONMENT INFORMATION

This section provides an overview of the existing biophysical environment through the analysis of the available baseline data regarding the receiving environment.

The Lianshulu lodge establishment is situated in the Zambezi Region near Kongola, as seen in Figure 1, nestled at an elevation of approximately 966 meters above sea level. This region experiences an average annual rainfall ranging from 550 to 600 mm, with distinct climatic conditions characterised by hot summers and cool winters, with a mean annual temperature of $> 22^{\circ}\text{C}$. The maximum temperatures generally range between 25°C and 35°C , while the minimum temperatures vary from 10°C to 22°C . Notably, the hottest months occur between September and November, while the coolest months fall in June and July (Bubenzer, 2002 & meteoblue, 2024).

The site lies within the Caprivi mopane woodland vegetation type and is characterised by a woodland structure, which is part of the broader Savanna biome. In terms of terrestrial diversity, this area exhibits some of the highest diversity within Namibia.

Geologically, this area is composed of the Kalahari Group and the dominant soil in the area is eutric Fluvisols (Buzenher, 2002).

The site's location places it within the Caprivi groundwater basin and the Cuando catchment area (Bubenzer, 2002 & Mendelsohn et al., 2002).

1.4 ENVIRONMENTAL REGULATORY REQUIREMENTS

The Project triggers listed activities as stipulated in the Environmental Management Act, No. 7 of 2007 and its Regulations, promulgated in 2012. An environmental scoping report, environmental and social impact assessment (ESIA) and environmental management plan (EMP) are required to be submitted as part of the application to support the decision-making process for issuing an environmental clearance certificate.

For this Project, ECC proposes to only develop a comprehensive environmental management plan (EMP) for the following reason: Lianshulu Lodge was already constructed in 1989 and Lianshulu Bush Lodge in 1998, thus predating the promulgation of the Environmental Management Act (EMA), No. 7 of 2007. The lodge establishment will primarily be located within an combined area of approximately 12 hectares, with the infrastructure occupying only about one hectare. Small to medium lodges by nature have limited environmental footprints and low potential for significant adverse impacts on their surroundings. Thus, subjecting them to a full environmental and social impact assessment (ESIA) could be excessively resource-intensive, furthermore, this is a pre-established lodge establishment. This EMP includes all

new developmental requirements for the establishment of the Lianshulu Safari Lodge and Lianshulu operations area.

This report presents the EMP which has been undertaken in terms of the requirements of the Environmental Management Act, No. 7 of 2007 and its associated Regulations.

Legislation that should be adhered to or is relevant to the Project includes the following as mentioned in Table 1.

Table 1 - Applicable laws, regulations and best practice methods

National regulatory regime	Relevance to the Project
Constitution of the Republic of Namibia of 1990	Social protection
Atmospheric Pollution Prevention Ordinance 11 of 1976	Social and biophysical landscape protection
Environmental Management Act, No. 7 of 2007 and its regulations, including the Environmental Impact Assessment Regulations, No. 30 of 2012	Environmental management and impact assessment process, includes public engagement
Soil Conservation Act, No. 76 of 1969 and the Soil Conservation Amendment Act, No. 38 of 1971	Biophysical protection
Water Resources Management Regulations (No. 269 of 2023): Water Resources Management Act, No. 11 of 2013.	Water source protection Wastewater management
The Forestry Act, No. 12 of 2001 as amended by the Forest Amendment Act, No. 13 of 2005	Vegetation protection
Nature Conservation Ordinance Act No. 4 of 1975 and its regulations.	Biodiversity protection
Labour Act, No. 11 of 2007 and regulations relating to the Health and Safety of Employees at Work (No. 156 of 1997)	Social protection
National Heritage Act, No. 27 of 2004.	Heritage protection
Namibia Tourism Board Act (No. 21 of 2000) and Regulations relating to Levy Payable by Accommodation Establishments Government Notice 137 of 2004	Regulatory board

National regulatory regime	Relevance to the Project
Draft Pollution Control; and Waste Management Bill (1999)	Biophysical landscape protection
Hazardous Substances Ordinance Ordinance No. 14 of 1974	Biophysical landscape protection

1.5 PURPOSE AND SCOPE OF THIS REPORT

The environmental management plan (EMP) provides a logical framework, mitigation measures and management strategies for the activities associated with the proposed Project. In this way ensuring that the potential environmental impacts are curbed and minimised as far as practically possible and that statutory and other legal obligations are adhered to and fulfilled. Outlined in the EMP are the protocols, procedures and roles and responsibilities to ensure the management arrangements are effectively and appropriately implemented.

This EMP is a live document and shall be reviewed at predetermined intervals, and or updated when or if the scope of work alters, or when further data or information is added. All personnel working on the Project will be legally required to comply with the requirements set out in the final EMP that is approved by the competent authority, the Ministry of Environment, Forestry and Tourism (MEFT).

1.6 MANAGEMENT OF THIS EMP

The Proponent will hold the environmental clearance certificate for the proposed Project and will be responsible for the implementation and management of this EMP. The implementation and management of this EMP, and thus the monitoring of compliance, will be undertaken through daily duties and activities, as well as monthly inspections.

1.7 LIMITATIONS, UNCERTAINTIES, AND ASSUMPTIONS RELATED TO THIS EMP

This EMP does not include measures for compliance with statutory occupational health and safety requirements. This will be provided in the safety management plan to be developed by the Proponent.

Where there is any conflict between the provisions of this EMP and any contractor's obligations under their respective contracts, including statutory requirements (such as licences, Project approval conditions, permits, standards, guidelines, and relevant laws), the contract should be amended, and statutory requirements are to take precedence.

The information contained in this EMP is based on the Project description as provided in this document. Where the design or operation method is different, this EMP may require updating and potential further assessment may be undertaken.

1.8 ENVIRONMENTAL ASSESSMENT PRACTITIONER

The report has been prepared by Environmental Compliance Consultancy (Pty) Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent. Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.

All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the following address:

Environmental Compliance Consultancy
PO Box 91193, Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

2 ENVIRONMENTAL MANAGEMENT FRAMEWORK

2.1 OBJECTIVES AND TARGETS

Environmental objectives and targets have been developed so that lodge operations can minimise potential impacts on the environment, as far as reasonably practicable.

Environmental objectives for the Project are as follows:

- Zero pollution incidents;
- Minimal impact on regional groundwater users;
- Protect local flora and fauna; and
- Use natural resources effectively and efficiently.

2.2 ORGANISATIONAL STRUCTURE, ROLES AND RESPONSIBILITIES

The Proponent shall be responsible for:

- Ensuring all members of the Project team, including contractors, comply with the procedures set out in this EMP;
- Ensuring that all persons are provided with sufficient training, supervision, and instruction to fulfil this requirement;
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood; and
- Contractors shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this EMP, and meet the responsibilities listed above.

Table 2 lists the roles and responsibilities allocated to different management levels in the company and specific personnel.

Table 2 – Roles and responsibilities

Role	Responsibilities and duties
Lodge manager / Proponent	<ul style="list-style-type: none"> - Responsible for ensuring compliance with this EMP, including overseeing the day-to-day activities during operations, and routine and non-routine maintenance works during operations; - Ensuring employees understand and comply with the requirements of this EMP; - Ensuring that all personnel are provided with enough training, supervision and instructions to fulfil this requirement; - - Ensure the environmental policy is communicated to all personnel; - Responsible for providing the required resources (including financial and technical) to complete any required tasks;

Role	Responsibilities and duties
	<ul style="list-style-type: none"> - Responsible for the management, maintenance and revisions of this EMP; - Maintain community issues and concerns register and keep records of complaints and responses provided; - Maintain an up-to-date register(s) of employees who have completed the onboarding site induction; - Ensure that best environmental practice is undertaken throughout the operations of the lodge establishment - Notifying the relevant authorities of serious environmental incidents promptly; - Being responsible for all management plans and environmental monitoring; and - Receiving, recording, and responding to environment-related complaints received from the public and other stakeholders.
Lodge foreman (appointed HSE responsible person)	<p>The lodge foreman will be responsible for the implementation of the EMP for the lodge establishment. The foreman will be available as required throughout the construction, renovations and operation of the lodge establishment and is tasked with the following roles:</p> <ul style="list-style-type: none"> - Bearing authority and independence to demand reasonable steps as required to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant construction/maintenance activities be ceased immediately should an adverse impact on the environment be likely to occur; - Complete weekly checklists and submit findings to the lodge manager; - Complete monthly EMP checklists and submit findings to the lodge manager; - Provisioning of environmental awareness/management training, capacity building and inductions; - Ensuring that best environmental practices are undertaken throughout the operations of the lodge; - Timely distribution of any relevant environmental documentation, including revisions to this EMP to all staff; - Ensuring site inductions are conducted throughout the different phases of the Project; - Reporting of any operations and conditions that deviate from the EMP or any non-compliant issues or accidents to the Proponent; and

Role	Responsibilities and duties
	<ul style="list-style-type: none"> - Responsible for compliance with conditions as set out in this EMP.
Employees, contractors and visitors	<p>Contractors hired for construction, operations or maintenance activities at the lodge establishment should comply with this EMP and shall be responsible for the following:</p> <ul style="list-style-type: none"> - Undertaking activities in accordance with this EMP, as well as relevant policies, procedures, management plans, statutory requirements and contract requirements; - Implementing appropriate environmental management measures; - Reporting environmental issues, including actual or potential environmental incidents and hazards to the Proponent or foreman; and - Ensuring appropriate corrective or remedial actions are taken to address all environmental aspects and incidents.

2.3 EMPLOYMENT

The Proponent and all contractors shall comply with the requirements of the Republic of Namibia's regulations for Labour, Health and Safety, and any amendments to these regulations. The following shall be complied with:

- In liaison with local government and community authorities, the Proponent shall ensure that local people have access to information about job opportunities and are considered first for construction/maintenance contract employment positions;
- The number of job opportunities shall be made known together with the associated skills and required qualifications;
- The maximum length of time the job is likely to last shall be indicated;
- Foreign workers with no proof of permanent legal residence shall not be hired;
- Every effort shall be made to recruit from the group of unemployed workers living in the surrounding area; and
- Every employee hired must be provided with a valid employment contract stating the position hired and the hourly remuneration offered.

3 COMMUNICATION AND TRAINING

To ensure potential risks and impacts are minimised, personnel must be appropriately informed and trained on how to properly implement the EMP. It is also important that regular communications are maintained with stakeholders (if applicable) and made aware of potential impacts and how to minimise or avoid them. This section sets out the framework for communication and training in relation to the EMP.

3.1 COMMUNICATION

During renovations, construction or maintenance, the Project manager and lodge manager shall communicate site-wide environmental issues to the Project team through the following means (as and when required):

- Site induction;
- Audits and site inspections;
- Toolbox talks, including instruction on incident response procedure, and
- Briefings on key Project-specific environmental issues, like feedback on complaints.

This EMP shall be distributed to the construction team, including any contractors, to ensure that the environmental requirements are adequately communicated. Key activities and environmentally sensitive operations will be highlighted to workers and contractors.

Communications between the management team shall include discussing any complaints received and actions to resolve them, any inspections, audits, or non-conformance with this EMP, and any objectives or target achievements.

3.2 ENVIRONMENTAL EMERGENCY AND RESPONSE

An emergency is any abnormal event, which demands immediate attention. It is any unplanned event, which results in the temporary loss of management control at the site, but where functional resources can manage the response. An emergency response plan document will be put in place that manages the response in relation to emergencies including environmental emergencies. Table 3 contains a list of emergency contact numbers.

Table 3 - Emergency contact details

Town	Ambulance	Police	Hospital
Katima Mulilo	+264 (66) 25-3012	+264 (66) 1-0111	+264 (66) 25-3012

For large-scale spills (i.e., greater than 200 litres) and other significant environmental incidents, the fire service should be notified as required and MEFT office should be informed of the incidents (telephone +264 61 284 2111) as well as the Ministry of Industries, Mines and Energy (MIME) by completing form PP/11, if the nature of spillage is of a fuel source. All correspondence with MIME/MEFT should be undertaken by the lodge manager as guided by the lodge foreman. Due to the proximity of the Kwando River to the lodge establishment, the

Department of Water Affairs (DWA) within the Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR) should also be contacted and informed.

3.3 COMPLAINTS HANDLING AND RECORDING

Any complaints received verbally by any personnel on the Project site or during operations shall be recorded by the receiver including:

- The name of the complainant;
- The contact details of the complainant;
- Date and time of the complaint; and
- The nature of the complaint.

The information shall be given to the lodge manager, who is overall responsible for the management of complaints. The lodge manager shall do the following:

- Inform the Project manager of issues, concerns, or complaints;
- Maintain a complaint register that required details of the complaint; and
- Provide a written response to the complainant of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons why are to be recorded in the register.

The workforce shall be informed about the complaints register, its location and the person responsible, to refer residents or the public who wish to lodge a complaint. The complaints register shall be kept for the duration of the Project and will be available for government or public review upon request.

3.4 TRAINING AND AWARENESS

All personnel working on the lodge establishment shall be competent to perform tasks that have the potential to cause an environmental impact. Competence is defined in terms of appropriate education, training and experience.

3.5 SITE INDUCTION

All personnel involved in the lodge establishment shall be inducted to the site with specific environmental and social awareness training, and health and safety issues. The environmental and social awareness training shall ensure that personnel are familiar with the principles of this EMP, the environmental impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures. The project manager shall ensure a register of completed training is maintained.

The site induction should include, but is not limited to the following:

A general site-specific induction that outlines:

- What is meant by “environment” and “social”;

- What are the environmental risks and impacts associated with lodge construction, maintenance and operations;
- How can any additional construction/maintenance activities impact the environment; and
- What can be done to mitigate against impacts.

The inductee's role and responsibilities concerning implementing the EMP:

- The site's environmental rules and commitments;
- Details of how to deal with, and who to contact should any environmental impacts occur;
- The potential consequences of non-compliance with this EMP and relevant statutory requirements, and
- The role of responsible people working on the Project and lodge establishment.

4 REPORTING, COMPLIANCE AND ENFORCEMENT

4.1 OPERATIONS: ENVIRONMENTAL INSPECTIONS AND COMPLIANCE MONITORING

Annual inspections of the lodge operational areas will be undertaken by the lodge manager to determine any non-conformances. Any non-conformance will be recorded, including the following details: a brief description of non-conformance; the reason for the non-conformance; the responsible party; the result (consequence); the corrective action taken and any necessary follow-up measures required.

4.2 REPORTING

There will be a requirement to ensure that any incident or non-compliance, including any environmental issue, failure of equipment or accident, is reported to the lodge manager.

4.3 NON-COMPLIANCE

Where it has been identified that works are not compliant with this EMP, the lodge manager will implement corrective actions to the extent that the works return to being compliant as soon as possible. In instances where the requirements of the EMP are not upheld, a non-conformance and corrective action notice will be produced. The notice will be generated during the inspections and the lodge manager and/or the Project manager will be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming.

Activities shall be stopped in the event of a non-compliant event identified until corrective actions have been completed.

4.4 INCIDENT REPORTING

The lodge manager must ensure that an accident and incident (including minor or near-miss) reporting system is maintained by the lodge foreman so that all applicable statutory requirements are covered. For any serious incident involving a fatality, or permanent disability, the incident scene must be left untouched until witnessed by a representative of the police. This requirement does not preclude immediate first aid being administered and the location being made safe.

The foreman must investigate the cause of all work accidents, significant incidents, provide the results of the investigation and recommendations on how to prevent a recurrence of such incidents. A formal root-cause investigation process should be followed.

4.5 DISCIPLINARY ACTION

This EMP is a legally binding document and non-compliance with it shall result in disciplinary action being taken against the perpetrator(s). Such action may take the form of (but is not limited to):

- Fine/penalties;
- Legal action;
- Monetary penalties imposed by the Proponent on the contractor;
- Withdrawal of licence; and
- Suspension of work.

The disciplinary action shall be determined according to the nature and extent of the transgression / non-compliance, and penalties are to be weighed against the severity of the incident.

4.6 RELEVANT PERMITS OR LICENCES

The Project should comply with the Water Resources Management Regulations (No. 269 of 2023): Water Resources Management Act, No. 11 of 2013.

Table 4 gives an overview of potential permit and/or licence requirements for the Project.

Table 4 – Permit requirements

Permit, licences or registration	Relevant authority	Project bearing
Water abstraction licence	Ministry of Agriculture, Fisheries, Water and Land Reform	An abstraction licence is required for the abstraction of water from a borehole for commercial purposes. Part 11 (sections 44 - 45) of the Water Resources Management Act, 2013 and Part 5 (sections 44 - 45) of the Water Resources Management Regulations (No. 269 Of 2023).
Effluent discharge licence	Ministry of Agriculture, Fisheries, Water and Land Reform	An effluent discharge licence related to the sewage systems and effluent discharge should be obtained. Part 13 (sections 68 - 72) of the Water Resources Management Act No.11 of 2013 and Part 8 (sections 66 - 68) of the Water Resources Management Regulations (No. 269 Of 2023) (Annexure 11).

5 ENVIRONMENTAL AND SOCIAL IMPACTS

The Proponent recognises that the construction, maintenance and operational activities may have impacts on the environment and surrounding community. Environmental management procedures are implemented to ensure the prevention and mitigation of such impacts. Monitoring and reporting on the implementation of the EMP is required. This chapter provides management plans of environmental aspects and their related impacts, which identifies mitigation and monitoring measures, as well as responsible party(ies) regarding implementation of commitments. This chapter is subject to regular review by the Proponent and will be updated when necessary.

5.1 ASPECT 1: HEALTH AND SAFETY

In accordance with the Namibian occupational health and safety legislation, including the Labour Act (Act No. 11 of 2007), related regulations and best practices, Lianshulu should adhere to strict health and safety measures to promote a secure and well-maintained environment for guests and staff. These measures are important for the operation of lodge establishments within protected areas such as Mudumu National Park and form a crucial part of sustainable and responsible tourism

As part of its operational framework, Lianshulu should be committed to providing a healthy and safe workplace to all of their staff. This should include the use of personal protective equipment (PPE) where necessary, regular training and awareness in health and safety procedures and the implementation of emergency protocols. Fire safety should also be a key focus area given the lodge establishment's location within a national park, with emergency protocols and fire prevention integrated into daily operations.

All staff members should receive ongoing instruction in emergency protocols, wildlife awareness and risk management, with regular drills conducted to prepare for various emergency scenarios. Furthermore, all infrastructure should be well-maintained including the elevated walkways and accommodation units, to mitigate and eliminate potential risks and hazards associated with the bush and riverine environments.

Lianshulu should also ensure that guest safety is prioritised through clear communication of park rules, guided activities led by trained professionals and on-site availability of emergency support.

Table 5 outlines the management plan for health and safety.

Table 5 - Environmental management plan for health and safety; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s)

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Ensure a safe and healthy working environment for all staff and guests; and – Comply with national health and safety regulations. 				
Activity	Aspect	Impact	Management commitments	Responsibility
<ul style="list-style-type: none"> – Lodge establishment renovation, construction and operational phases (includes maintenance) 	Health and safety	<ul style="list-style-type: none"> – Occupational health and safety concerns, potential injury and loss of life during the renovation, construction and operational phases 	<p>To promote a safe and conducive working environment, the following mitigation measures should be considered:</p> <ul style="list-style-type: none"> – A health and safety management plan should be developed and implemented on-site by the Proponent; – The Labour Act No. 11 of 2007 and Regulations relating to occupational health and safety should be adhered to; – Appropriate PPE should be worn by employees (e.g., safety boots, overalls, and gloves), where this is required by the nature of their work; – Conduct safety induction for employees and field guides or security should be trained on weapon handling (if applicable); 	<ul style="list-style-type: none"> – Proponent – Lodge manager – Lodge foreman

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Ensure a safe and healthy working environment for all staff and guests; and – Comply with national health and safety regulations. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			<ul style="list-style-type: none"> – Appropriate safety/warning signs should be erected in areas considered to cause a certain degree of harm (including wildlife zones); – Risk assessment in the workplace must be done to identify facility areas that could cause some degree of impact and suitable prevention measures should be identified; – Regular medical check-ups should be conducted on personnel to ascertain fitness for work levels (where required); – Frequent maintenance of all equipment and machinery; – Occupational incidents and accidents on-site should be reported to the authorities (i.e., Occupational Safety & Health (OSH) at the 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Ensure a safe and healthy working environment for all staff and guests; and – Comply with national health and safety regulations. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			Ministry of Labour, by using form F.5); <ul style="list-style-type: none"> – Emergency contact details should be readily accessible or on display to contact relevant services in emergencies; – No un-authorised use of equipment should be allowed; – Radios, satellite phones, and vehicle tracking systems can also be utilised on-site to enhance communication; – In the unlikely event of a death occurring within the lodge establishment boundaries from occupational negligence or otherwise from a "freak accident event", the area should be secured, and all personnel removed from the scene; – A root cause analysis of the event should be undertaken as soon as practicably possible; and 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Ensure a safe and healthy working environment for all staff and guests; and – Comply with national health and safety regulations. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			<ul style="list-style-type: none"> – Counselling should be provided to the witnesses and other personnel members who may have been impacted by the event. 	
Monitoring requirement	<ul style="list-style-type: none"> – Daily supervision and monitoring of processes on-site. 			

5.2 ASPECT 2: WASTEWATER MANAGEMENT

Effective wastewater management should be a key component of Lianshulu's environmental strategy, especially considering its location within Mudumu National Park and along the Kwando River. All wastewater generated on-site, primarily from guest accommodation, laundry, kitchen and staff facilities, is considered domestic effluent.

To minimise environmental impact, the use of biodegradable cleaning products is recommended throughout lodge operations. Staff should be trained in responsible water use and wastewater handling, and all wastewater infrastructure should be located at safe distances from the river to prevent contamination. Table 6 outlines the management plan for wastewater management.

Table 6 - Environmental management plan for wastewater management; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s)

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Minimise the potential impacts to the environment from domestic effluent. 				
Activity	Aspect	Impact	Management commitments	Responsibility
<ul style="list-style-type: none"> – Sewage systems installed on-site – Portable chemical 	Wastewater management	<ul style="list-style-type: none"> – Possible sewage discharge runs the risk of pathogen /disease 	<ul style="list-style-type: none"> – Ensure compliance with the Water Resources Management Regulations (No. 269 Of 2023); Water 	<ul style="list-style-type: none"> – Lodge foreman – All staff

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> Minimise the potential impacts to the environment from domestic effluent. 				
Activity	Aspect	Impact	Management commitments	Responsibility
toilets used during construction or maintenance phases		transmissions and odours during construction/renovation, maintenance, operational and decommissioning phases. <ul style="list-style-type: none"> Effluent discharged into the environment Possible nutrient enrichment of groundwater due to leakage of sewage into the groundwater or the Kwando River Potential risk associated with the discharge of wastewater into the environment 	Resources Management Act, No. 11 of 2013. Specifically, Part 13 (sections 68 - 72) of the Water Resources Management Act No. 11 of 2013 and Part 8 (Sections 66 - 68) of the Water Resources Management Regulations (No. 269 of 2023); <ul style="list-style-type: none"> A valid effluent waste discharge licence should be in place and licence conditions should be adhered to (if required – for example routine sampling and water quality analysis); The sewage treatment system needs to be well inspected for leakages at all times by competent and trained employees or operators; Effluent water should be tested yearly or as required in line with licence conditions, to ensure that it complies with relevant legislation and 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> Minimise the potential impacts to the environment from domestic effluent. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			standards (if applicable); <ul style="list-style-type: none"> Effluent should not be discharged into a sensitive habitat/area (i.e., dam, river or stream); If a major pipe burst or leak has been discovered in the sewage system, groundwater and surface water needs to be monitored and tested to ensure that there is no contamination; The kitchen fat trap should be well maintained and cleaned monthly or more regularly as required. This waste should also be disposed of as hazardous waste at a registered landfill site; Ensure toilets are always clean and dry; Provide adequate sanitary facilities, including clean water, soap, disposable paper towels; Provide suitable personal protective equipment that may 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> Minimise the potential impacts to the environment from domestic effluent. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			include waterproof/abrasion-resistant gloves, footwear, eye, and respiratory protection; <ul style="list-style-type: none"> The monitoring of wastewater discharges should be conducted regularly (if applicable); The regular cleaning, handline, storage and disposal of sewage sludge, in line with licence conditions; and During the decommissioning phase, if the lodge establishment ownership is not transferred (private or community), ensure that all sewage tanks are fully emptied and removed from the site. 	
Monitoring requirement			<ul style="list-style-type: none"> Daily monitoring and observations. Water quality testing, if required as per licence conditions. Monitor and evaluate all pipes, equipment and septic tanks every 6 months or earlier if required. 	

5.3 ASPECT 3: BIODIVERSITY CONSERVATION

The Lianshulu lodge establishment is located within an 800-hectare private concession in Mudumu National Park, an important conservation area in Namibia's Zambezi Region. Situated along the Kwando River, the lodge establishment is surrounded by diverse ecosystems that support a high diversity of flora and fauna, including various rare and threatened species. Biodiversity conservation should form a central part of lodge establishment's operational objectives and sustainability goals.

Lianshulu operates under a conservation-compatible land-use model that promotes minimal ecological disturbance, the sustainable use resource and the conservation of native habitats and species. All development, construction and activities should be guided by the EMP ensuring compliance with the Environmental Management Act (No. 7 of 2007) and related regulations.

To maintain a healthy ecological balance and reduce human-wildlife conflict Lianshulu should have strict waste management practices in place, environmentally friendly infrastructure designs and regulated guest movement in sensitive areas around the lodge establishment. The elevated walkways and designated pathways at the lodge help preserve ground vegetation and prevent habitat fragmentation, while informative signage and experienced guides can promote awareness of the region's biodiversity and ecology among tourists.

The Proponent also collaborates with local conservation authorities, community conservancies, and partner organisations to support broader regional efforts in anti-poaching, wildlife monitoring and ecological research.

Table 7 outlines the management plan for biodiversity conservation.

Table 7 - Environmental management plan for biodiversity conservation; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s).

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Protect and promote biodiversity conservation during operational activities; and – Ensure sustainable land use practices that support ecosystem health. 				
Activity	Aspect	Impact	Management commitments	Responsibility
– Daily lodge establishment activities during the construction, maintenance and operational phases of the Project	Biodiversity	– The possibility of encountering and interacting with biodiversity on-site during construction/ renovation, maintenance and	The Nature Conservation Ordinance Act No. 4 of 1975 and its Regulations, Controlled Wildlife Products and Trade Act 9 of 2008 and the Animals Protection Act 71 of 1962 should be closely followed with regard to any encounters with wildlife within site boundaries. <ul style="list-style-type: none"> – Wildlife encountered should be ethically treated; 	<ul style="list-style-type: none"> – Lodge manager – Lodge foreman – All staff

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Protect and promote biodiversity conservation during operational activities; and – Ensure sustainable land use practices that support ecosystem health. 				
Activity	Aspect	Impact	Management commitments	Responsibility
		operational activities <ul style="list-style-type: none"> – Potential removal of protected plant species during land clearing activities (i.e., during renovations and construction phases) – The potential spread of invasive species – Injury and or fatalities occurring from interactions with wildlife during all Project phases 	<ul style="list-style-type: none"> – No living organism should be removed from site boundaries by anyone other than by a professional/registered animal handler, pest control company, MEFT/MAFWLR or relevant rehabilitation or wildlife organisations (this includes the handling of snakes and any dangerous wildlife); – Prohibit illegal hunting/ poaching, consumption and possession of game and game products (i.e., illicit trade of pangolins for scales); – Police and MEFT should be notified of any illegal hunting incident involving sensitive or protected species or if such an animal is found on someone within or surrounding lodge establishment boundary; – All staff should be informed in writing about the consequences with regards to rules that are broken (i.e., possession of a firearm, illegal hunting, stock 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Protect and promote biodiversity conservation during operational activities; and – Ensure sustainable land use practices that support ecosystem health. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			theft and removal of protected species etc.); – Nests discovered on infrastructure within site boundaries should not be removed or destroyed; – Pesticides and herbicides should not be used as far as reasonably possible; – If there is no other possibility, the relevant pesticides/herbicides/chemicals should be used by a professional/registered pest control company and the material safety data sheet (MSDS) of the substance used should be followed closely; – Invasive plant species should be removed, and their spread should be prevented; – Waste on-site should be well managed and removed daily or regularly from the site to prevent rodents, snakes and scorpions from breeding/living on-site; – In the case of decommissioning dismantle and remove any structures or abandoned buildings	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Protect and promote biodiversity conservation during operational activities; and – Ensure sustainable land use practices that support ecosystem health. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			<p>that could serve as potential hideouts for poachers or other illegal activities. Implement measures to restore natural habitats and prevent the site from becoming a threat to local wildlife;</p> <ul style="list-style-type: none"> – To counteract the potential impacts of removing certain protected plant species, the following control management measures should be implemented (if applicable): <ul style="list-style-type: none"> • Prior to any new land clearing event (if applicable), a site inspection should be conducted to determine the presence of any unique plant species; – Protected plant species should not be removed, without the relevant permission or permits; – Large trees or shrubs should not be removed (could be essential for breeding birds); – Identify rare, endangered, threatened and protected species; 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Protect and promote biodiversity conservation during operational activities; and – Ensure sustainable land use practices that support ecosystem health. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			<ul style="list-style-type: none"> – Conduct toolbox talks and inductions, highlighting the importance of protected plant species; – Where possible, rescue and relocate plants of significance; – Promote revegetation of cleared areas upon completion of construction activities; – All Project equipment arriving on-site from elsewhere should have an internal weed and seed inspection completed before such equipment is used, this will prevent the introduction of invasive species; – Ensure contractors receive induction on preventing the spread of invasive vegetation/weeds; and – Ensure the correct removal of alien invasive vegetation and prevent the establishment and spread of alien invasive plants. 	
Monitoring requirement			<ul style="list-style-type: none"> – Daily site observations to ensure sensitive habitats are not disturbed during operational activities. – Data recording and photographic evidence of any animal mortalities. 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Protect and promote biodiversity conservation during operational activities; and – Ensure sustainable land use practices that support ecosystem health. 				
Activity	Aspect	Impact	Management commitments	Responsibility
	– Daily and weekly checks for any potential poaching activities.			

5.4 ASPECT 4: AIR QUALITY

Given the Lianshulu lodge establishment's remote location within the Mudumu National Park and the use of gravel access roads, dust generation from vehicle movement and occasional construction or maintenance activities are recognised as a potential impact on local air quality. To mitigate this, Lianshulu should implement practical measures aimed at minimising dust emissions and maintaining air quality standards (where possible).

By managing dust and emissions effectively, Lianshulu ensures that air quality is preserved for guests, staff and wildlife, contributing to a healthier and more sustainable environment within the park.

Table 8 outlines the management plan for air quality.

Table 8 - Environmental management plan for air quality; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s).

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Minimise the potential impacts of emissions to air during operational, construction and maintenance activities. 				
Activity	Aspect	Impact	Management commitments	Responsibility
<ul style="list-style-type: none"> – Dust generation during construction and renovation activities and vehicle movement on gravel access roads – Dust generation 	Air quality	<ul style="list-style-type: none"> – Potential air pollution and disturbance to staff, guests, neighbouring communities or tourists in the area 	To minimise the potential for dust generation, the following management measures should be implemented, as required: <ul style="list-style-type: none"> – Restrict speed of vehicles (<40 km/h); – Vehicles and machinery should be maintained to limit exhaust fume emissions; 	<ul style="list-style-type: none"> – Lodge manager – Lodge foreman

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> Minimise the potential impacts of emissions to air during operational, construction and maintenance activities. 				
Activity	Aspect	Impact	Management commitments	Responsibility
during maintenance and operational phase			<ul style="list-style-type: none"> Dust-generating activities should be avoided during strong wind events; Where an effect is profound, ensure dust suppression measures are in place; Maintenance plan for gravel roads; Implement dust suppression measures where required'; and Employees should use and wear appropriate personal protective equipment (PPE) (e.g. dust masks). 	
– Monitoring requirement	– Daily observations and monitoring.			

5.5 ASPECT 5: SOIL MANAGEMENT

Protecting soil integrity should be a key component of environmental management practices, given the sensitive ecosystems of Mudumu National Park and the lodge establishment's location adjacent to the Kwando River. Soil contamination, compaction and erosion are identified as potential impacts associated with construction, maintenance and operational activities.

Construction activities should be confined to clearly demarcated areas, with erosion control measures, such as retention of natural vegetation buffers, that can be used to protect exposed soils, especially during the rainy season.

All maintenance and operational activities should be managed to avoid soil contamination. This includes appropriate handling and storage of waste materials, chemicals, fuels and cleaning products in compliance with Namibian regulations and best practices. Spill prevention plans and response protocols should be in place to address any accidental releases.

Table 9 outlines the management plan for soil management.

Table 9 - Environmental management plan for soil management; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s).

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Prevent soil degradation and erosion during operations; and – Maintain soil health to support sustainable land use. 				
Activity	Aspect	Impact	Management commitments	Responsibility
– Operational, construction, renovation and maintenance activities	Soil management	– Emergency incidents/ accidental release of hazardous substances (hydrocarbons, chemicals, domestic effluent etc.) leading to soil contamination during construction/renovation, maintenance, operational and decommissioning phases	<ul style="list-style-type: none"> – The following measures should be taken into consideration regarding storage, handling and spill management of fuel, chemicals or hazardous substances: Storage <ul style="list-style-type: none"> – Hazardous chemicals should be stored separately from non-hazardous chemicals; – Chemical containers should be labelled correctly- clear guidance on the compatibility of different chemicals can be obtained from the MSDS which should be readily available; – Store chemicals in a dedicated, enclosed, and secure facility with a roof and a paved/concrete floor; 	<ul style="list-style-type: none"> – Lodge manager – Lodge reman – All staff

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Prevent soil degradation and erosion during operations; and – Maintain soil health to support sustainable land use. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			<ul style="list-style-type: none"> – Diesel tanks should be completely contained within secondary containment such as bunding (if applicable); – Consider the feasibility of substituting hazardous chemicals with less hazardous alternatives; and – Fuels, lubricants, and chemicals are to be stored within appropriately sized, impermeable bunds or trays with a capacity not less than 110% of the total volume of products stored. <p>Spills</p> <ul style="list-style-type: none"> – Spill kits with the following items as a minimum should be made available on-site: – Absorbent materials; – Shovels; – Heavy-duty plastic bags; – Protective clothing (e.g., gloves and overalls); – Major servicing of equipment shall be undertaken offsite or within appropriately equipped onsite workshops; 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Prevent soil degradation and erosion during operations; and – Maintain soil health to support sustainable land use. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			<ul style="list-style-type: none"> – For small repairs and required maintenance activities, all reasonable precautions to avoid oil and fuel spills must be taken (e.g., spill trays, impervious sheets); – Provision of adequate and frequent training on spill management, spill response and refuelling must be provided to all onsite staff; – No refuelling is to take place within 50 m (meters) of groundwater boreholes, surface water bodies or streams; – Vehicles and machinery are to be regularly serviced to minimise oil and fuel leaks; and – Should there be major petroleum product spills on site, (spill of more than 200 litres per spill) such incidences should be reported to the Ministry of Industries, Mines and Energy (MIME) on Form PP/11 titled "Reporting of major petroleum product spill". The 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Prevent soil degradation and erosion during operations; and – Maintain soil health to support sustainable land use. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			<p>incidents should also be reported to MAFWLR and MEFT.</p> <ul style="list-style-type: none"> – The following points apply to all areas on site: – Assess the situation for potential hazards; – Do not come into contact with the spilt substance until it has been characterised and necessary personal protective equipment (PPE) is provided; and – Isolate the area as required. – Spill management procedures: – Spills are to be stopped at the source as soon as possible (e.g., close valve or upright drum); – Spilt material is to be contained to the smallest area possible using a combination of absorbent material, earthen bunds or other containment methods; – Spilt material is to be recovered as soon as possible using appropriate equipment. In most cases, it will be necessary to excavate 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Prevent soil degradation and erosion during operations; and – Maintain soil health to support sustainable land use. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			the underlying soils until clean soils are encountered; <ul style="list-style-type: none"> – All contaminated materials recovered after a spill, including soils, absorbent pads and sawdust, are to be disposed of at an appropriately licenced facility; – A written incident report must be submitted to the lodge manager; and – In the case of decommissioning, remove all fuel storage tanks, chemicals, containers, and associated infrastructure to prevent soil and water contamination. Any remaining fuel should be safely disposed (hazardous waste) of or transferred to an appropriate facility. 	
– Monitoring requirement	– Daily monitoring and observation of operational, construction and maintenance activities.			

5.6 ASPECT 6: WATER MANAGEMENT

Sustainable water use and management should be key priority for Lianshulu, given its location next to the Kwando River in the Mudumu National Park. Lodge operations should be designed to minimise water usage and prevent the contamination of natural water sources.

Water for lodge operations should be used efficiently and sourced sustainably. Guests should be encouraged to support water conservation efforts through informative signage and responsible tourism practices.

Water quality should be conserved by preventing the release of harmful chemicals and waste near drainage areas and ensuring that all operational activities (i.e., washing of vehicles and construction) are conducted in designated areas with runoff measures in place. Water infrastructure should be checked periodically to detect and address leaks or inefficient water use promptly.

Table 10 outlines the management plan for water management.

Table 10 - Environmental management plan for water management; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s).

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> - Protect surface and groundwater resources from contamination; and - Promote efficient and responsible water use practices. 				
Activity	Aspect	Impact	Management commitments	Responsibility
<ul style="list-style-type: none"> - Operational, construction, renovation and maintenance activities 	Water management	<ul style="list-style-type: none"> - Potential decrease in water availability due to the abstraction of water - Contamination of water resource and bodies due to lodge activities 	<ul style="list-style-type: none"> - Ensure compliance with the Water Resources Management Regulations (No. 269 Of 2023): Water Resources Management Act, No. 11 of 2013. Specifically, part 11 (sections 44 - 45) of the Water Resources Management Act, No. 11 of 2013 and Part 5 (sections 44 - 45) of the Water Resources Management Regulations (No. 269 Of 2023); 	<ul style="list-style-type: none"> - Lodge manager - Lodge foreman - All staff

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Protect surface and groundwater resources from contamination; and – Promote efficient and responsible water use practices. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			<ul style="list-style-type: none"> – Abstraction licence should be in place (for abstracting water from boreholes or the river) and reporting as required; – Turn off pumps when abstraction is not required; – Adopt a water-wise mindset on site; – Water should not be wasted, especially with high water use activities like swimming pools; – Effective and water saving methods should be used for the watering of the vegetable garden on-site; – Water leakages or pipe bursts should be reported and fixed as soon as possible; – Maintain a safe buffer distance between project activities and the river to reduce the risk of runoff or accidental spills reaching the water 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Protect surface and groundwater resources from contamination; and – Promote efficient and responsible water use practices. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			resources or the Kwando river; – Implement strict protocols for storing, handling, and disposing of hazardous materials (e.g. fuel, chemicals) to prevent leaks or seepage into nearby water sources or the Kwando river; – Should there be a desire for ornamental plants on site, drought-resistant species should be considered; – Eco-friendly and low water use equipment should be considered i.e. eco-friendly showerheads and taps (where possible); and – Activities that require a lot of water should be monitored to ensure water is used efficiently.	
– Monitoring requirement	– Daily monitoring and observation of operational, construction and maintenance activities.			

5.7 ASPECT 7: WASTE MANAGEMENT

Effective waste management is a key component for environmental responsibility, particularly given the lodge establishments location in the Mudumu National Park. Waste generated by lodge operations, including domestic waste, construction waste, recyclables and hazardous materials, should be managed in an effective manner that minimises potential environmental impacts as well as support the conservation objectives of the Mudumu National Park.

Any solid waste generated should be sorted into categories such as recyclable materials, general waste, organic waste and hazardous materials. Recyclables, including metals, plastics and glass should be separated and transported to appropriate recycling facilities (where feasible). Organic waste from kitchens can be composted where practical or disposed of in a controlled manner to avoid attracting wildlife and influencing the behavioural patterns of the animals. Fat trap waste (kitchen grease etc.) from the kitchens should be managed as hazardous waste.

General waste that cannot be recycled should be stored at an appropriate secure area and should be disposed of at an approved landfill site to reduce and prevent accumulation and potential contamination. Hazardous waste, such as cleaning/chemical containers, oils, batteries and cleaning chemicals, should be handled according to Namibian regulations and lodge-specific protocols, ensuring proper labelling, safe storage and disposal through appropriate channels.

Staff should be trained in waste separation and handling procedures to maintain high standards of cleanliness, good housekeeping and safety across the lodge establishment.

Table 11 outlines the management plan for waste management.

Table 11 - Environmental management plan for waste management; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s).

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Ensure responsible waste separation, recycling, and disposal; and – Minimise environmental impact through efficient waste management. 				
Activity	Aspect	Impact	Management commitments	Responsibility
– Operational, construction, renovation and maintenance activities	Waste management	– Environmental pollution (littering and poor storage of	Waste management should follow the International Finance Corporation (IFC) standards as follows: <ul style="list-style-type: none"> – Implement a waste management plan (from 	<ul style="list-style-type: none"> – Lodge manager – Lodge foreman – All staff

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Ensure responsible waste separation, recycling, and disposal; and – Minimise environmental impact through efficient waste management. 				
Activity	Aspect	Impact	Management commitments	Responsibility
		solid waste) during construction/renovation, maintenance, operational and decommissioning phases – Mixing of hazardous and non-hazardous waste – Incorrect handling, storage and disposal of hazardous waste	“cradle to grave” methodology) covering all aspects of waste generated on-site; – Training and toolbox talk about the importance of waste management; – Ensure a high standard of housekeeping across/within site boundaries; – Hazardous and non-hazardous waste must be properly segregated; – If hazardous waste is generated, it must be disposed of at a registered hazardous waste landfill site; – Any fuels or chemicals stored on-site should be clearly labelled; – Chemicals and fuels should be handled with care in clearly designated areas; – All chemicals must be used in accordance with their respective MSDS; – Solid waste shall be stored in an appointed area in labelled, covered, tip-proof metal drums/skips for collection and disposal	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Ensure responsible waste separation, recycling, and disposal; and – Minimise environmental impact through efficient waste management. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			at an approved waste management site; <ul style="list-style-type: none"> – The waste storage areas shall always be kept clean and tidy; – Ensure solid waste on site are removed timeously to ward off unwanted scavengers; – Implement the waste management hierarchy across the site: avoid, reuse, recycle, and then dispose of; and – Ensure that all temporary and permanent infrastructure that is not being repurposed or transferred is dismantled and safely removed from the site during decommissioning. Any remaining structures should be secured or rehabilitated to prevent environmental degradation. 	
– Monitoring requirement	– Daily monitoring and observation of operational, construction and maintenance activities. – Records of safe disposal of hazardous waste,			

5.8 ASPECT 8: NOISE MANAGEMENT

Given the lodge establishments location within the Mudumu National Park, maintaining low noise levels is crucial to preserving the area's quiet natural environment as well as having a minimal impact on the ecosystem and guest experience.

All lodge operations, including vehicle movements, construction, maintenance and guest activities, should be managed to minimise noise generation, especially during times when wildlife is most active like early mornings and evenings. Construction and repair work should be scheduled during limited daytime hours to reduce disturbance to both wildlife and guests as far as reasonably possible.

Staff should be trained to conduct activities with minimal noise and guests encouraged to respect the tranquillity of the surrounding environment. Through careful noise management, Lianshulu can help maintain the serene character of the park and supports local conservation efforts.

Table 12 outlines the management plan for noise management.

Table 12 - Environmental management plan for noise management; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s).

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Minimise noise from lodge operations to protect wildlife and guest experience; and – Schedule and control activities to reduce disturbance during sensitive times. 				
Activity	Aspect	Impact	Management commitments	Responsibility
– Operational, construction, renovation and maintenance activities	Noise	– Noise generation from construction/renovation, maintenance and operational activities leading to noise nuisance and potential hearing loss towards site-based employees and	– The Labour Act No.11 of 2007 and Regulations relating to the Health and Safety of Employees at Work (GN 156/177) should be followed for occupational noise exposure (Chapter 6, section 197, sub-section 1-3). These sections state that no employee shall work in an environment where noise levels equal or exceed 85 decibels (dB).	<ul style="list-style-type: none"> – Lodge manager – Lodge foreman – All staff

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Minimise noise from lodge operations to protect wildlife and guest experience; and – Schedule and control activities to reduce disturbance during sensitive times. 				
Activity	Aspect	Impact	Management commitments	Responsibility
		disturbance to biodiversity	<p>The following mitigation measures should be implemented, as required:</p> <ul style="list-style-type: none"> – The Proponent should develop a healthy and safety management plan that considers noise generation; – Restrict noise-generating activities to day- time operations; – Appropriate PPE should be worn during noise-generating activities (i.e., earplugs, earmuffs, ear protective equipment); – Vehicles, equipment and machinery on site should be maintained regularly to exhaust noise levels; and – Ensure noise complaints are recorded and responded to timeously. 	
– Monitoring requirement	– Daily monitoring and observation of operational, construction and maintenance activities.			

5.9 ASPECT 9: FIRE MANAGEMENT

Fire management should form a critical part of Lianshulu's lodge operations due to its location within the fire prone woodland and savannah ecosystem.

Lianshulu should maintain a detailed fire prevention and management plan, including the installation of firebreaks (where possible), fire extinguishers in all required areas and clearly marked evacuation routes. Staff should regularly participate in fire drills and receive fire safety training, to ensure preparedness in the event of a fire. Open flames should be strictly

controlled and campfires or outdoor cooking should only occur in designated areas under supervision.

Firefighting equipment should be well-maintained, checked regularly and be in a good condition. In collaboration with MEFT and neighbouring communities, Lianshulu can support and promote a broader fire management initiatives to protect both human life and biodiversity in this region.

Table 13 outlines the management plan for fire management.

Table 13 - Environmental management plan for fire management impacts; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s).

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Prevent and minimise the risk of wildfires through proactive safety measures; and – Ensure rapid and effective response to any fire incidents. 				
Activity	Aspect	Impact	Management commitments	Responsibility
– Operational, construction, renovations and maintenance activities	Fire management	<ul style="list-style-type: none"> – Potential risk of fire occurrences and veld fire leading to ecosystem interruption, health and safety concerns and lodge infrastructure damage. – Fires that potentially result from lodge equipment (i.e., kitchen or “BBQ or Braai” areas), human activities 	<ul style="list-style-type: none"> – Develop a fire management system and emergency procedures through the process of risk identification and assessment; – Identify and signpost dedicated assembly points at the lodge areas; – Ensure that all lodge areas, including rooms and restaurants, are equipped with appropriate firefighting equipment (such as fire extinguishers) or fire suppression 	<ul style="list-style-type: none"> – Lodge manager – Lodge foreman – All staff

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Prevent and minimise the risk of wildfires through proactive safety measures; and – Ensure rapid and effective response to any fire incidents. 				
Activity	Aspect	Impact	Management commitments	Responsibility
		(construction, maintenance, arson or nearby communities) or natural (lighting)	systems (such as sprinklers). <ul style="list-style-type: none"> – Developing site-specific work procedures as part of the fire management system; – Induction on fire prevention and toolbox talks; – Control and reduce the potential risk of fire by segregating and safe storage of flammable materials; – Avoid potential sources of ignition for example, by prohibiting smoking in and around areas where chemicals/fuel is stored; – Ensure suitable fire-extinguishing equipment is accessed immediately and conveniently whenever necessary. This can include pails of water, buckets of 	

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Prevent and minimise the risk of wildfires through proactive safety measures; and – Ensure rapid and effective response to any fire incidents. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			sand, or portable extinguishers; <ul style="list-style-type: none"> – For veld fires, appropriate firefighting equipment should be available on-site; – Fire breaks to be regularly checked and maintained around the lodge establishment; – Injuries from fire should also be included in the health and safety management plan; – Emergency contact details should be readily available on-site; and – Ensure key personnel are trained to manage an emergency fire situation and aware of the emergency procedures. 	
Monitoring requirement	<ul style="list-style-type: none"> – Regularly inspect and maintain firefighting equipment and firebreaks. – Conduct and document periodic fire safety drills for staff. 			

5.10 ASPECT 10: CULTURAL HERITAGE

All lodge operations should be directed by a commitment to preserve cultural resources, create awareness and promote appreciation and understanding among guests. Should any archaeological or cultural artifacts be discovered during construction or operational activities,

work in the immediate area will cease and appropriate authorities will be notified for guidance and protection.

Lianshulu can also integrate local cultural elements into its guest experience, offering opportunities for visitors to learn about the local traditions, crafts and stories of the surrounding communities, thereby also supporting cultural preservation.

Table 14 outlines the management plan for cultural heritage related impacts.

Table 14 - Environmental management plan for cultural heritage impacts; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s).

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> - Mitigate against cultural heritage impacts; and - Protect sites of cultural and historical significance. 				
Activity	Aspect	Impact	Management commitments	Responsibility
- Operational, construction, renovation and maintenance activities	Heritage	- Potential damage to heritage or undiscovered archaeological finds during construction/r enovation, maintenance and operational activities	In case of discovering or unearthing undiscovered heritage sites, the following measures (chance-find procedure) shall be applied: <ul style="list-style-type: none"> - Works to cease and the area to be demarcated with appropriate tape by staff, and the lodge manager to be informed; - The National Heritage Council (NHC) to be informed of the chance find; - Archaeological/heritage artefacts/graves are to remain undisturbed until an investigation is conducted by the NHC; 	- All staff

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> - Mitigate against cultural heritage impacts; and - Protect sites of cultural and historical significance. 				
Activity	Aspect	Impact	Management commitments	Responsibility
			<ul style="list-style-type: none"> - Heritage consent to be acquired by the NHC; - Develop and maintain a chance find procedure; and - Regular awareness with lodge and contractor staff. 	
Monitoring requirement			<ul style="list-style-type: none"> - Report any chance finds to the lodge manager. - Maintain an on-site register. 	

5.11 ASPECT 11: SOCIO ECONOMIC

The Lianshulu lodge establishment can play an important role in promoting socio-economic development in the Zambezi Region by creating employment opportunities, supporting local establishments and contributing to community upliftment.

Wherever possible, the lodge establishment should prioritise the hiring of local staff and supporting local suppliers. Skills development and on the job training should be implemented to boost staff skills and promote career growth. Lianshulu can also support and promote community-based tourism initiatives and conservation efforts.

Table 15 outlines the management plan for socio-economic related impacts.

Table 15 - Environmental management plan for the socio-economic aspects; listing environmental objectives, aspects, impacts, associated mitigation measures, monitoring requirements and responsible person(s).

Performance objectives				
The management objectives are to: <ul style="list-style-type: none"> – Support local employment, training and procurement to strengthen community livelihoods; and – Contribute to regional development through sustainable tourism initiatives. 				
Activity	Aspect	Impact	Management commitments	Responsibility
<ul style="list-style-type: none"> – Operational, construction, renovation and maintenance activities 	Socio-economic	<ul style="list-style-type: none"> – Beneficial socio-economic impacts on a local and regional scale 	<ul style="list-style-type: none"> – Maximise local employment and local business opportunities; – Enhance the use of local labour and local skills as far as reasonably possible; and – Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible. 	<ul style="list-style-type: none"> – Proponent – Lodge manager
Monitoring requirement	<ul style="list-style-type: none"> – Evaluate and ensure that local workers and contractors/services are considered where possible. 			

6 DECOMMISSIONING PHASE

In the event that the Proponent plans to cease with lodge operations (and/or if ownership is transferred), the Proponent and the new owner should mutually agree on the way ahead for the site and associated infrastructure. If the new owner intends not to use the infrastructure, the Proponent will be responsible for removing all equipment, machinery, chemicals, fuel and any other element from the site. If infrastructure is removed at the decommissioning stage, it is recommended that the Proponent implement a rehabilitation plan for the site to ensure that the site is returned to its natural state as feasibly possible and that no further degradation to the site is foreseen.

7 IMPLEMENTATION OF THE EMP

The operations of Lianshulu will be carried out in compliance with the relevant regulations. Minor to moderately significant impacts are anticipated, hence management and mitigation measures are in place to eliminate or reduce the severity of potential impacts.

This environmental management plan:

- A. Has been prepared according to a contract with the Proponent;
- B. Has been prepared based on information provided to ECC up to June 2025;
- C. Is for the sole use of the proponent, for the sole purpose of an EMP
- D. Must not be used (1) by any person other than the proponent or (2) for any purpose other than an EMP;
- E. Must not be copied without the prior written permission of ECC.

8 REFERENCES

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