ENVIRONMENTAL MANAGEMENT PLAN (EMP)

OPERATION AND MANAGEMENT OF THE BAOBAB REST CAMP IN GROOTFONTEIN, OTJOZONDJUPA REGION

JUNE 2020

DOCUMENT INFORMATION	
Title	Environmental Management Plan for the operation and management of the Baobab Rest Camp in Grootfontein, Otjozondjupa Region
ECC Application Reference number	APP-001482
Listed Activity	Tourism Development
Location	Baobab Game Farm 60 km north of Grootfontein on the Maanlig Road in Otjozondjupa region
Proponent	**Company details:** **Baobab Rest Camp** P.O. Box 1542 Tsumeb **Contact Person:** Mr. Jacobus Johannes Opperman Tel: +264 67 220121 Mobile: +264 855592500 Email: jaco_1@iway.na

Author: Cecilia Ndunge, Environmental Assessment Practitioner
Reviewer: Jonas Heita, Environmental Assessment Practitioner

Office: +264 61 225 776
Mobile: +264 811 220 114
Email:info@tec.com.na
Website:www.tec.com.na

Tortoise Environmental Consultants (TEC)
One Step @ a time

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ABBREVIATIONS

DEA	Department of Environmental Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMA	Environmental Management Act (Act No. 7 of 2007)
EMP	Environment and Social Management Plan
MET	Ministry of Environment and Tourism
TEC	Tortoise Environmental Consultants

1 INTRODUCTION

1.1 Baobab Rest Camp

Tortoise Environmental Consultancy (TEC) has compiled this Environmental Management Plan (EMP) in accordance with the Environmental Management Act, 2007 on behalf of Baobab Rest camp (herein referred to as the 'proponent') that is presently operating on the Baobab Game Farm, which is located approximately 60 km north of Grootfontein on the Maanlig Road on Farm Baobab in Otjozondjupa region. It is geographically located at 18.88625° S and 18.32227°E (Refer to the map inserted).

The site is about 509 2915 hectares which has currently five staff houses, one borehole, French derange and ablution facilities. The envisaged campsite will be 1.5 km squares with 10 bungalows, 10 campsites, restaurant and a swimming pool

The rest camp will provide activities such as Game drives, sundowner, sightseeing and visits to the Baobab (Tree 1063) which is a national monument and the National Heritage Council of Namibia (NHC) ensures that the tree is conserved and protect through the National Heritage Act 27 0f 2004 and its regulations.

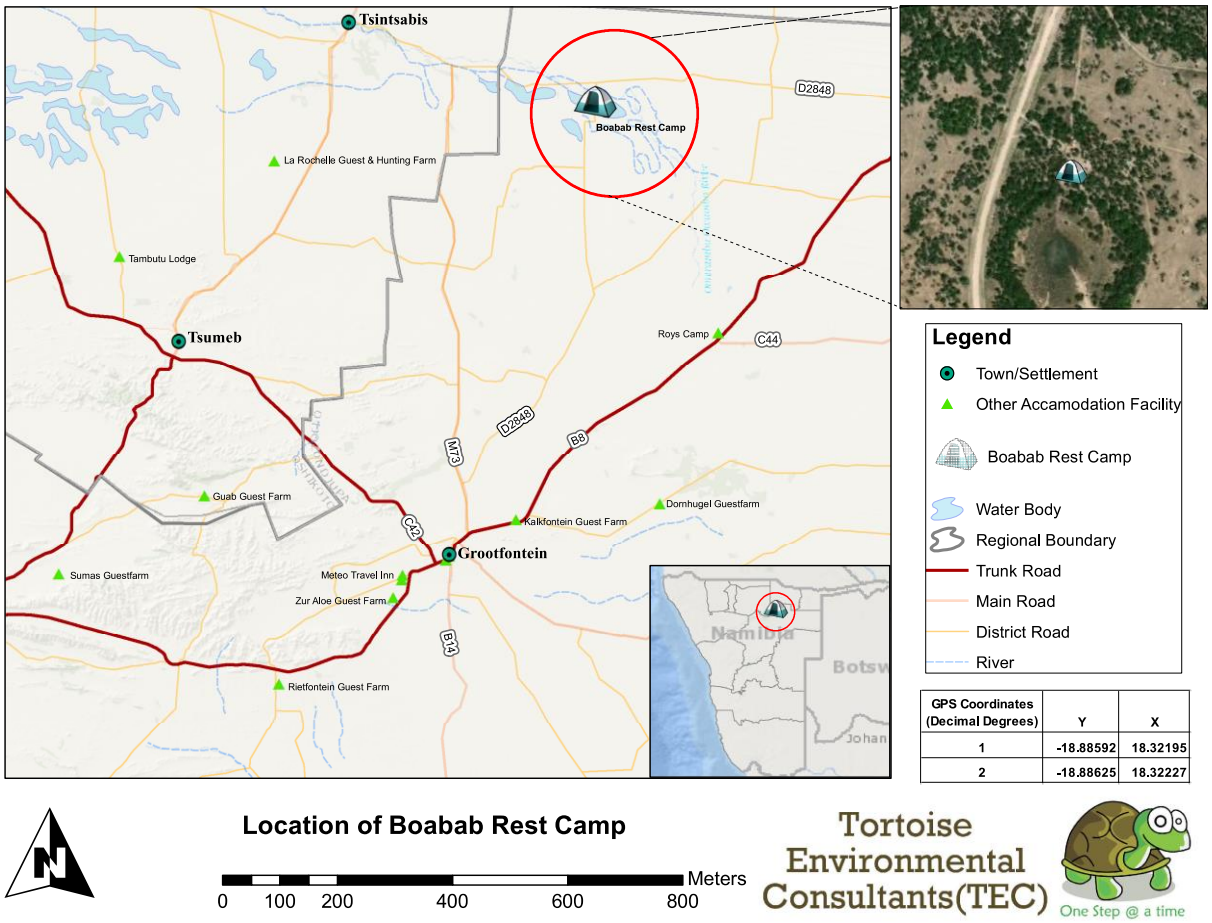

Figure 1: Proposed Project Location

1.2 Environmental management plan (EMP) Context

This document constitutes the Environmental Management Plan (EMP) for the operation and management of Baobab Rest Camp. The EMP has been developed in accordance with the provisions of the Environmental Management Act (Act No.7 of 2007), EIA Regulations of 2012 and any other relevant / applicable legislation (across all sectors).

1.3 What is an EMP?

The EMP outlines mitigation measures against specific activities, steps, stages or processes of the proposed development. Thus, the EMP can be defined as the tool to prevent / minimize the impacts identified during the EIA process.

The (EMP) is a tool used to mitigate potential environmental risks associated with the proposed project/activity, and provides a risk strategy and logical framework for implementation during the operation and management of the proposed Baobab Rest Camp project, in order to mitigate potential environmental and social impacts.

Furthermore, the EMP outlines specific roles and responsibilities for role-players against which they can be evaluated and non-compliance is punishable.

1.4 EMP Scope

The purpose of the EMP is to identify potential environmental and social impacts associated with the increment of operation and management of the Baobab Rest Camp in-order to ensure compliance to the EMA.

The aim of the EMP is to ensure that the activities undertaken during the tourism development are conducted in accordance with the following:

i. Environmental Management Act (No. 7 of 2007),
ii. EIA regulations of 2012 (GN: 30), and
iii. Best environmental practices (benchmarks)
iv. Any other applicable legislation *(as presented in Table 3.1 to 3.3)*

The EMP provides environmental guidelines to be followed throughout the lifespan of the tourism development activities. The guideline comprise of the following:

a) Environmental Aspects,
b) Management Objective,
c) Mitigation Measures / Actions Required,
d) Monitoring Indicators, and
e) Party Responsible

1.5 Objective

The objective of the EMP is to prevent / minimize (where possible), unacceptable and adverse environmental, social or economic impacts that may arise from the proposed development. Overall, the EMP aims to prevent any negative impact/s (real, potential or perceived) that may result from the proposed development.

1.6 EMP Scope

The EMP does not only focus, and it is not limited to the boundaries of the proposed zones and tourism development activities, but it includes the bigger picture, and serve as the guiding tool to protecting the natural, bio-physical and socio-economic environment both in the surrounding area, and beyond the scope of the tourism development activities. The bigger picture is important because, most impacts (e.g. Water pollution, noise pollution, ecological impacts, solid waste etc.) may not be confined to the boundaries of the tourism development sites.

1.7 Possible adjustments to the EMP

The EMP is an open-ended document and maybe considered inconclusive. In other words, the EMP should allow room for adjustments if new information becomes available at a later stage, in which new/additional mitigation measures may become necessary.

The necessity of possible adjustments to the EMP at a later stage may be attributed to:

a) Lack of information at the time of drafting the initial EMP,
b) Evolution or addition of new activities, or
c) Unintended omission of potential impacts during the initial project design and development of the initial EMP.
d) Development of industry best practice.

This implies that, in-addition to the information contained herein, any other relevant information that may surface during the construction operations, through internal monitoring or auditing by the Environmental Compliance Officers (ECOs), can be added to the EMP (evolution of activities), and such changes or inclusions will be binding to the proponent and all contractors / sub-contractors.

1.8 Implementation Framework and Accountability to the EMP

For effective implementation of the EMP, the Institutional Framework is presented below. However, the specific roles and responsibilities are defined and broken down as presented in Sections 5 and 6, respectively.

Table 1: Role players, Institutional Framework

Role-player	Company / Institution	Role
Proponent	Baobab Rest camp	Compliance to the EMP
Environmental Consultant	Tortoise Environmental Consultants (TEC)	Development of the EMP

Environmental Compliance Officer/s (ECO)	Ministry of Environment &Tourism (MET) – Department of Environmental Affairs (DEA)	Monitoring Compliance to EMP: ➢ Un-announced spot checks, ➢ Warning, penalties / fines, license suspension, etc.
Public	Interested and affected parties (I&APs)	Report to the ECOs, any activity of environmental concern (e.g. Pollution, safety risks, etc.)

2 PROJECT INFORMATION

2.1 Project Description

The site is a designated for tourism development and it is located 60km north of Grootfontein in Otjozondjupa region.

The Rest camp shall cater for overnight guests as well as day visitors. Activities to be offered by the facility include the Game drives, sundowners, sightseeing and visiting the Baobab tree.

All guides shall be qualified and trained in line with best practice. The facility shall operate all year round. Approximately ten (10) employees will be permanently employed to run the facility and will be accommodated in the five (5) staff houses constructed on site.

2.2 Existing Infrastructure/Current Status

At present, the Baobab Rest camp have existing infrastructure that comprises of:

- Access roads
- Borehole (8m deep)
- French drainage
- Ablution facilities (2 Toilets for Disabled People, 4 showers for males and 4 showers for females with hot and cold water)
- Kiosk and Reception
- Water supply (pipelines and tanks)
- 5 staff houses/accommodation

Figure 2: Access road and directional sign boards

Figure 3: Entrance to the Campsite

Figure 4: Water tanks, borehole and drainage on the site

Figure 5: Ablution facilities on the camping site.

Figure 6: Staff accommodation on site.

Figure 7: Existing infrastructures on the camping site

Figure 8: The kiosk and some firefighting equipment on site.

2.3 Proposed Development

The proposed tourist facility on farm Baobab will compose of the following:

- Ten bungalows;
- Restaurant
- Campsite with ten individual camping areas;
- Swimming pool
- Storage and maintenance areas
- Fire place

2.4 Proposed Layout

Buildings shall be designed and constructed using bricks, poles and corrugated iron zincs. Other materials used for infrastructure will include steel, corrugated iron, aluminium and glass, all of which shall be sourced from Tsumeb or other major towns such as Grootfontein.

2.5 Description of Proposed Project

As there are already certain infrastructures in place, limited vegetation will require clearance or alteration. Where this is required, for example for the new bungalows, it shall be kept to the absolute minimum. Best practice measures as per the EMP shall be applied throughout the operation and management of the Rest camp.

The facility shall have several vehicles to support tourist activities, including game drive vehicles. Other activities shall include general maintenance of the running and upkeep of the facilities and infrastructure.

2.6 The Affected Environment

The site is located on Farm Baobab near Tsintsabis about 60 km north of Grootfontein and 50 km northeast of Tsumeb.

2.6.1 Vegetation

The biome of Oshikoto Region is a savannah biome consisting of common trees such as *Terminalia prunioides*, *Lonchocarpus nelsii* and *Albizia anthelmintica*. Shrubs found in the area include *Acacia mellifera*, *Acacia nilotica*, *Croton gratissimus*, *Dichrostachys cinerea*, *Commiphora glandulosa* and *C.africana*, as well as *Grewia flava*, *G. bicolor* and *G. flavescens*. Some common dwarf shrubs are *Hibiscus elliotiae*, *Rhus tenuinervis* and *Gossypium herbacium*. There are both perennial and annual grasses (which are far more prominent) in the area (Strohbach, 2001). Part of the landscape comprises of the Kalahari Woodland, with broadleaved tree and shrub Savanna prenominating. The overall terrestrial diversity of Oshikoto region is high compared to the rest of Namibia. Plant diversity is between 400 – 499; bird diversity more than 230; and mammal diversity is between 91 and 105 (Mendelsohn, 2003).

3 COMPLIANCE AND LEGAL REQUIREMENTS

This chapter outlines the regulatory framework applicable to the proposed project. Table 2 provides an overview of applicable policies, plans and strategies and Table 3 provides a list of applicable national legislation.

3.1 Compliance to the EMP

The EMP is binding to the proponent, and all contractors/sub-contractors to be engaged in the development of the Rest camp. This implies that each entity that may have any kind of engagement or involved in/with the activities of the tourism development should comply with the EMP throughout the project lifespan. Non-compliance may have serious consequences e.g. withdrawal of licenses by the authorities, which means project closure.

3.2 Environmental Management Act (No.7 of 2007)

Section 27 of the Environmental Management Act 2007 (Act No. 7 of 2007) (EMA) provides a list of activities that may not be undertaken without an Environmental Clearance Certificate (ECC) (herein referred to as: listed activities).

The EMP should conform to the provisions of the Environmental Management Act (EMA), Act No. 7 of 2007 and EIA regulations of 2012 (Government Notice: 30).

The EIA Regulations defines a '*Management Plan*' as:

"…a plan that describes how activities that may have significant impacts on the environment are to be mitigated controlled and monitored."

3.3 EMP Requirements

Table 2: EMP Requirements as outlined in Section 8 of the EIA Regulations

Requirement
(j) a draft management plan, which includes – *(aa) information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure;* *(bb) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of the activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and*

(cc) a description of the manner in which the applicant intends to modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation remedy the cause of pollution or degradation and migration of pollutants.

3.4 Listed Activities

Listed Activities may not be undertaken without an Environmental Clearance Certificate (ECC), and hence an Environmental Impact Assessment (EIA) is required. The EIA entails the development of the EIA Scoping Report and Environmental Management Plan (EMP) which should be submitted to the MET as part of the application for the ECC.

The proposed project triggers a number of Listed Activities as set out in the Environmental Management Act, 2007 (Act No. 7 of 2007) (herein referred to as the EMA) and the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011) (herein referred to as the EIA Regulations).

Table 3 below provides an overview of applicable policies, plans and strategies, Table 4 provides a list of applicable national legislation and Table 5 provides National Statutes.

Table 3: Listed Activities triggered by the proposed project

Listed Activity	Activity Description	Relevance to the proposed project
Activity 4 Forestry Activities	4.1 The clearance of forest areas, deforestation, afforestation, timber harvesting or any other related activity that requires authorization in terms of the Forest Act, 2001 (Act No. 12 of 2001) or any other law.	Construction of the Rest Camp area entails vegetation clearing. About 4 *Ha* of vegetation will be cleared for the construction of the camp. However, the threshold to apply for a forestry permit is 15 *ha*. Hence, no Forestry permit will be required.
Activity 6 Tourism Development Activities	6.1 The construction of resorts, lodges, hotels or other tourism and hospitality facilities.	Construction of lodge bungalows and camp site
Activity 8 Water Resource Developments	8.1 The abstraction of ground or surface water for industrial or commercial purposes	Abstraction of ground water for the construction and operation of the proposed development
	8.6 Construction of industrial and domestic wastewater treatment plants and related pipeline systems	Construction and operation of a wastewater treatment plant and associated sewer pipelines

Listed Activity	Activity Description	Relevance to the proposed project
	8.8 Construction and other activities in water courses within flood lines	Construction of boat launching platforms

Table 4: Policies, Plans and Strategies

Policy / Plan	Summary	Applicability to the Proposed Project
5th National Development Plan (NDP) and Vision 2030	Namibia's overall long-term development ambitions are provided in the National Vision 2030, which is implemented by five yearly national development plans (NDP's). NDP5 is the current development plan. NDP5 incorporates the principals and recommendations contained in the Stockholm Declaration on the Human Environment (1972) and associated Action Plan, as well as Agenda 21 which merged from the Convention on Biological Diversity, Rio De Janeiro (1992).	The proposed project is a development that forms part of the bigger picture of achieving economic progression, social transformation and environmental sustainability. Tourism is a key area for growth and thus the proposed project supports the goals for this sector's growth.
National Policy on Tourism for Namibia	Provides a framework for the mobilisation of tourism resources to realise long term national goals defined in Vision 2030 and the more specific targets of the NDP, namely, sustained economic growth, employment creation, reduced inequalities in income, gender as well as between the various regions, reduced poverty and the promotion of economic empowerment.	The policy was reviewed during the preparation of the EIA process. The proposed project aligns with the policy; in particular, the development provides competitive tourism amenities and services, creating a competitive business environment that is market driven.
National Tourism Investment Profile and Promotion Strategy 2016 - 2026	Sets out a strategy with the aim of creating a favourable and conducive regulatory environment for tourism investment with the objective of lowering transaction costs to allow the private sector to invest	The Government has recognised and prioritised tourism development in various legislative and policy documents, setting out the approach to growing the tourism industry into the most

Policy / Plan	Summary	Applicability to the Proposed Project
	and grow the tourism sector through a superior tourism superstructure. Has been developed in conjunction with the National Sustainable Tourism Growth and Development Strategy	competitive tourism destination in Africa. The Strategy has identified nine areas that shall be a key focus to support the Strategy. Wildlife tourism, trophy hunting tourism and community-based tourism are three of these subsectors.

Table 5: Other Legal Instruments / National Statutes

National Statutes	Summary	Applicability to the Proposed Project
Environmental Assessment Policy (1995)	Promotes Sustainable development and Environmental Conservation emphasize the importance of environmental assessments as a key tool towards environmental sustainability	Environmental Protection
Environmental Management Act, 2007 (Act No. 7 of 2007) and associated regulations, including the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011)	The Act aims to promote sustainable management of the environment and the use of natural resources by establishing principles for decision-making on matters affecting the environment. It sets the principles of environmental management as well as the functions and powers of the Minister. The Act requires certain activities to obtain an environmental clearance certificate prior to project development. The Act states an EIA may be undertaken and submitted as part of the environmental clearance certificate application. The MET is responsible for the protection and management of Namibia's natural environment.	This EIA and EMP report documents the findings of the EIA process undertaken for the proposed project, which will form part of the environmental clearance application. The EIA process and associated report have been undertaken in line with the requirements under the Act and associated regulations.

	The Department of Environmental Affairs under the MET is responsible for the administration for the EIA process.	
Water Act, 1956	This rather out-dated Act that remains in force provides for the control, conservation and use of water for domestic, agricultural, urban and industrial purposes; to make provision for the control, in certain respects, of the use of sea water for certain purposes; and for the control of certain activities on or in water in certain areas. The Ministry of Agriculture, Water and Forestry (MAWF) Department of Water Affairs is responsible for administration of the Water Act.	Water pollution is an offence as per Section 23 of the Water Act. The Act stipulates obligations in Part 13 of general provisions relating to water pollution and prohibits the discharge of wastewater, effluent or waste without licence and sets forth specific requirements for such licence. The EMP sets out measures to avoid polluting the environment.
Water Resources Management Act, 2013 (No. 11 of 2013) Promulgated, but not gazetted	Provides a framework for managing water resources based on the principles of integrated water resource management. It provides for the management, protection, development, use and conservation of water resource	Section 44 stipulates the requirements for a licence to be held for the abstraction and use of water. Section 68 makes provisions for water pollution. Section 69 and 72 makes provisions for wastewater treatment plants and stipulates the requirement for a licence to operate wastewater treatment plant and discharge effluent. These have been incorporated into the EMP to minimise water pollution. Permits shall be obtained by the proponent.
Soil Conservation, 1969 (Act 76 of 1969) and the Soil Conservation Amendment Act (Act 38 of 1971)	Makes provision for the prevention and control of soil erosion and the protection, improvement and the conservation, improvement and manner of use of the soil and	Through vegetation, removal there may be the risk of affecting soil quality. Measures shall be taken to avoid this which are set out in the EMP.

	vegetation.	
Forest Act 12 of 2001 Forest Act Regulations 2015	To provide for the protection of the environment and the control and management of forest. The Act and Regulations have the following stipulations that may be relevant to the proposed project: - Approval from the Director may be required for the clearance of vegetation on more than 15 hectares (Section 23, subsection 1 (b)). - Provision for the protection of various plant species. This includes the proclamation of protected species of plants and the conditions under which these plants can be disturbed, conserved, or cultivated.	There shall be some vegetation removal as part of the proposed project. The total area of the development camp site is approximately 4 hectares and it is unlikely that an area of more than 15 hectares shall be cleared. The proponent shall undertake all activities in line with the conditions stipulated in the Permit and a valid permit shall be obtained throughout vegetation clearance activities. It is unlikely that a permit shall be required.
National Heritage Act, No. 27 of 2004.	The Act provides provision of the protection and conservation of places and objects with heritage significance.	There is potential for heritage objects to be found on the development site, therefore the stipulations in the Act have been taken into consideration and are incorporated into the EMP.
Public Health Act (Act No. 36 of 1919)	Advocates for Public Health and safety	Protective clothing
The Occupational Safety and Health Act No. 11 of 2007	Advocates for employee and public safety, health	In the working context “SAFETY” implies “free from danger”
National Heritage Act, No. 27 of 2004.	The Act provides provision of the protection and conservation of places and objects with heritage significance.	Refer to handling procedures presented in the Scoping Report

3.5 Water abstraction and wastewater discharge Permits

An abstraction and discharge permit will be applied for at the Department of Agriculture Water and Forestry for the abstraction of water from the underground aquifer, the operations of the

waste water treatment plant and the discharge of waste water as per the Water Resources Management Act, 2013 (No. 11 of 2013).

3.6 Disciplinary Action

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

- Fines / penalties,
- Legal action,
- Withdrawal of license/s
- Suspension of work.

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

3.7 Non-Compliance

The Proponent and Site Manager shall be deemed to have **not** complied with the EMP if:

- There is evidence of contravention of the EMP and associated indicators.
- The Proponent and SM have failed to comply with corrective or other instructions issued by the ECO or qualified authority.
- The Proponent and SM fail to respond to complaints from the public.

4 ROLES AND RESPONSIBIILTIES

This section outlines the roles and responsibilities of the key personnel responsible for the day-to-day management of activities to ensure effective implementation of the EMP.

4.1 Roles and Responsibilities

To ensure accountability, it is necessary to assign responsibilities. The key role-players for project implementation are;

a) The **Environmental Compliance Officer (ECO)** representing the Ministry of Environment and Tourism (MET), or an appointed independent environmental officer, who is responsible for monitoring and auditing.

b) **The Proponent**: Owner/Project Manager.

c) **The Site Manager** the person responsible for the day-to-day management of the project.

4.1.1 The Environmental Compliance Officer (ECO):

The ECO refers to the party responsible for the environmental monitoring and auditing to ensure that the provisions of the EMP are complied with.

The ECO shall have adequate environmental knowledge to understand and interpret the EMP and pertaining environmental aspects associated with the project. The specific tasks of the ECO are as follows:

- To undertake all monitoring and auditing activities in-order to ensure compliance with the EMP.
- Conduct site inspection prior to the commencement of activities; and at reasonable intervals (e.g. every month, quarterly or annually), throughout the duration of the project. Depending on the risks, some projects may be inspected more frequently (e.g. every month).
- Conduct regular inspections (unannounced spot checks) and shall submit compliance or non-compliance reports to the respective authorities (MET or any other relevant authority).
- Compile Progress Reports immediately after site inspections, Compliance Reports, pertaining to any non-compliance incident/s, and a Rehabilitation Report following the conclusion a specific activity.
- The ECO shall liaise closely with all key stakeholders i.e. the Site Manager and the Environmental Commissioner.

- Shall provide guidance on any environmental management issues, incidents or emergencies that may arise throughout the project lifespan.
- Shall assist in providing recommendations for remedial action in the event of non-compliance.
- Auditing or monitoring activities may involve investigation, as well as structured observation, measurement, and evaluation of environmental data over a period of time.

4.1.2 The Proponent:

The specific responsibilities of The Proponent are as follows:

- Appoint a Site Manager (SM) to oversee the daily onsite activities.
- Liaise closely with the SM and ECO on any environmental management issues, incidents or emergencies.
- Ensure that all activities on and around the site are conducted in accordance with the requirements of the EMP at all times.
- Ensure that all sub-contractors and visitors to the site are conversant with the requirement of the EMP, relevant to their roles on site.
- Shall develop a **communication strategy** between The Proponent, Site Manager, workers, the ECO and any other relevant stakeholder.
- Shall develop an **organisational structure** to ensure that:

  - There are clear channels of communication;
  - There is an organisational hierarchy for effective implementation of the EMP; and
  - Conflicting or contradictory instructions are eliminated;
  - Ensure that all instructions and official communications regarding environmental matters shall follow the organisational structure as determined
  - Ensure that EMP requirements are assigned to specific people / positions with the capacity and experience required for implementation.

4.1.3 The Site Manager:

The **Site Manager (SM)** should:

- Ensure that each team recruited to work at the sites, adheres to the EMP;
- Ensure that a **copy of the EMP is kept on site at all times and as it may be requested by authorities conducting spot checks at any time**.
- Ensure that all staff attend an induction session before commencement of any work on site and that they are adequately informed of the requirements of the EMP;
- Shall take special care to prevent irreversible damage to the environment;
- Ensure that activities are within the boundaries of the proposed zones as specified Site Map and boundary markings (visible pegs, tape etc.).

4.2 Instructions

All instructions and official communications regarding environmental matters shall follow the organisational structure as determined by the Proponent. Based on the adopted structure, it is essential that responsibilities outlined are assigned to specific parties with adequate capacity and experience required to implement the EMP.

4.3 EMP Implementation Context

Environmental management is not only concerned with the final results of The Proponent's operations, but also with how such operations are carried out. Tolerance with respect to environmental matters applies not only to the finished product but also to the standards of the day-to-day operations required to complete the Works.

The EMP is an important tool and necessary to mitigate / counter negative environmental or social impacts that may arise from the project. However, in the absence of audits and monitoring, it will become ineffective.

5 POTENTIAL IMPACTS AND MITIGATION MEASURES

5.1 Impact Themes and Recommended Mitigation Measures

The EMP has been categorised into different themes, which serve as a quick guide to the recommended EMP remedial actions during the construction and Operation stages (Table 7 to 13).

Table 6: Overall themes that serves as a quick guide

EMP Themes	Specific Aspects
A – Staff induction	Induction
	Site Demarcation
	Communication
B – Health and Safety	General safety at work place
	Road Safety
	Ablution facilities
	Dust and Noise
C – Pollution and Waste Management	General waste: *Material waste (off cuts), concrete rubble, garden & domestic waste,*
	Vehicle emissions (smoke)
	Oil Spills
	Any other waste
D – Environment	Limited access roads
	Soil and Water Pollution
	Ablution facilities
	Waste Disposal
E – Socio economic	Employment opportunities for Locals
	Alcohol and Drug use

	Working hours
	HIV / AIDS
	Safety and Security
F – Cultural Heritage	Heritage resources / artefacts
G – Rehabilitation	Clean-up and maintain natural/original appeal

SECTION A: STAFF INDUCTION

Table 7: Mitigation measures pertaining to staff Recruitment and Induction

Potential Sources of Impacts:

- ✓ Employees working without employment contracts (recipe for labour disputes)
- ✓ Lack of adequate induction to inform the workers about the Do's and Don'ts
- ✓ Lack of formal orientation of the construction workers process (confusing and disorientation of workers)
- ✓ Poor Communication
- ✓ No formal presentation of the EMP and employees are not aware of the content and risks associated with the activities / actions

Impact	Objective	Mitigation Measures	Indicators for Monitoring and Compliance	Responsible Party
Recruitment	To ensure that all workers have employment contracts (Labour Act No. 11 of 2007)	Formalize recruitment of all staff with Contracts, stating nature of employment, duration and remuneration to protect both parties and to avoid labour disputes later on	Copy of staff contracts	Proponent/ Site Manager
Staff Induction	To ensure that all staff/employees are conversant with the requirements of the EMP	Induction for all workers on the provisions of the EMP before work commencement, covering but not limited to: Safety, Health and Environmental (SHE) measures, emergency response, reporting of incidents, HIV/AIDS awareness, alcohol and substance abuse, etc. Staff operating equipment (such as trucks, loaders, jack hammers, compressors etc.) shall be adequately trained and sensitised against potential hazards Conduct Quarterly induction reviews and reflect on workers	Induction Minutes and Attendance Register, Signed by each and every staff member Staff members appointed at a later stage should also undergo induction Quarterly minutes	Site Manager

	Availability of the EMP on site for ease of reference	**Ensure that a copy of the EMP is kept on site and accessible by team leaders**	Availability of EMP on site and accessibility by team leaders	Site Manager
	Punitive measures for staff, to ensure compliance	Adopt a disciplinary system to discipline staff for non-compliance, for offences such as littering, speeding, safety risk (both to themselves and to others), not using ablution facilities, etc.	Number of fines issued daily/per month	Site Manager
Communication	Ensure effective communication throughout the and construction period (project lifespan)	Develop a communication strategy (Chanel & medium of communication) All correspondence should be written and signed off by witnesses (e.g. Site Manager / team leaders) The contact numbers for the Site Manager and Team Leaders must be available onsite (displayed) in case of emergencies.	Communication Strategy Letters, e-mail, Notices, Minutes List of contact numbers available on site	Site Manager
Site Demarcation	To contain all project activities within the site boundaries and prevent and construction activities from extending beyond the and construction claims	Demarcate the construction site with visible marking (e.g. fence, pegs, tape etc.) If need be, obtain permission from relevant authorities to make use adjacent land e.g. for temporary staff accommodation or machinery warehouse	Temporary fencing or any other visible site demarcation in place and construction activities are contained within the project site	Site Manager
Notice Board	To warn any person (employees and public) entering the and construction site	Erect a notice board at the site entrance to notify employees and the public that they entering a and construction site	Visible notice board	Site Manager

SECTION B: OCCUPATIONAL HEALTH AND SAFETY

Table 8: Mitigation measures pertaining to Health and Safety

Potential Sources of Impacts:

- ✓ Inadequate training of employees or contractors on risks associated with tourism development activities
- ✓ Safety hazards may occur if equipment is not handled in the correct manner
- ✓ Employees not receiving the correct Personal Protective Equipment (PPE) for their specific responsibilities.
- ✓ Employees not adhering to safety rules implemented at the site
- ✓ Noise generated by vehicles and equipment during the proposed activities

Impact	Objective	Mitigation Measures	Indicators for Monitoring and Compliance	Responsibility
General Occupational Health and Safety of the employees (injuries)	To ensure safe working conditions and adhere to the Health and Safety Regulations, Government Notice 156/1997 (GG 1617)	Develop a Health and safety Plan Identify potential hazards and develop responses to eliminate sources of risk or minimize workers' exposure to hazards Provide adequate and appropriate personal protective equipment for all workers Provide training to all workers on relevant aspects of occupational health and safety associated with their daily work Provide sufficient fire extinguishers and train staff on how to use them and the applications	Health and Safety Plan Hazard risk report Safe work condition audit Personal protective equipment issue (Distribution register) Adequate protective gear for all staff Training schedule and attendance register	Site Manager

		thereof	Availability fire extinguishers and evidence training (e.g. minutes, training pictures etc.	
Accidents and incidents	To ensure safe working conditions	Document and report occupational injuries, illness and fatalities, including near misses. Investigate causes and take appropriate action to eliminate risks where possible Provide adequate access to first aid and medical assistance in cases of work related accidents or injuries	Accidents and incidents register (including near misses) Root causes analysis report Incident review (cause and elimination of hazard) First aid kit availability and adequacy audit report	Site Manager
Physical Hazards to workers	To ensure safe working conditions	Eliminate physical hazards to workers and mitigate any residual risks	Hazards risk report	Site Manager
Road Safety	To prevent traffic hazards / inconveniences from earth moving machinery during and construction period	Signage for vehicles and earth moving machinery All trucks transporting materials (e.g. sand /gravel) should be covered with suitable material (e.g. net, tarpaulin, canvas etc.) Adhere to traffic rules and speed limits	Public Complaints/Incident report/s	Site Manager
Ablution Facilities	To reduce health risks and environmental pollution and ensure healthy working	Ensure adequate, hygienic (clean) and user-friendly ablution facilities for all staff.	Inspect ablution facilities regularly (daily)	Site Manager

	environment with appropriate and user-friendly ablution facilities	Wastewater should be discharged in accordance with the effluent discharge regulations. No faecal waste should be discharged on site Acts of excretion and urination, other than at the toilet facility provided, shall be strictly prohibited. Appoint cleaner or rotate cleaning responsibilities among workers. If necessary, designate Male and Female toilets Ablution facilities must be located at least 100 m away from streams or freshwater systems and regularly serviced	Availability of toilets, cleanliness and hygienic ablution facilities Incidents or complaints of waste discharge into the environment	
Dust and Noise	To mitigate dust and noise impacts to both employees and the public To minimise noise disturbances during the construction phase.	Adopt applicable dust suppression measures to mitigate dust impacts, Provide dust masks and ear muffs to all employees operating in a dusty or noisy environment Alert the community and general public of noisy undertakings prior to carrying out such activity (e.g. blasting)	Dust and Noise Incident Reports Monitoring of dust and noise levels using modern equipment such as: *Galvimetric Dust Sampler, Personal Dust Monitor, Data Ram, Sound Level Meter, etc.*	Site Manager
Fire Risk/Hazard	To mitigate fire risk	Use and Contain fire for cooking purposes and apply caution to prevent an un-controlled	Staff induction to demonstrate the use of fire	Site Manager

		fire throughout the project lifespan. Any fire outbreak could lead to loss of life, property and grazing The same fire caution should be adopted by smokers (smother the cigarette bud before disposing in appropriate waste bin or burry underground. Provide/install Fire extinguishers in accordance with safety regulations	extinguishers and fire hydrants Adequate and Service record	

SECTION C: POLLUTION AND WASTE MANAGEMENT

Table 9: Mitigation measures pertaining to Waste Management

Potential Sources of Impacts: ✓ Disregard of the pollution impacts (often considered insignificant e.g. littering, oil spills etc.) ✓ Poor management, storage and disposal of concrete and cement or spillages from equipment (e.g. cement mixers), and general spillage of contaminated wash or wastewater ✓ Oil spills (includes fuel, grease, etc.) ✓ Leaking or broken sewerage pipes ✓ Storage of unwanted waste (e.g. old/waste tyres) and poor disposal systems dispose				
Impact	**Objective**	**Mitigation Measures**	**Indicators for Monitoring and Compliance**	**Responsible Party**
Vehicle emissions	Reduce greenhouse gas (GHG) emissions from poorly maintained or malfunctioning equipment (vehicles / machinery	All vehicles and equipment shall be kept in good working order and serviced regularly (in accordance with the servicing frequency of the specific machinery), in order to prevent emission of poisonous smoke etc.	Vehicle servicing records Reports of smoke emissions from machinery	Site Manager
Oil Spills	Manage oil spills and leak from vehicles and Machinery	1. There must be an immediate spill response kit on site 2. Ensure all vehicle and machinery must be well serviced and leak inspections are done. 3. Provide drip trays to stationary vehicle and machinery 4. The onsite re-fuelling area must be on concrete bund 5. Storage of fuel, oil and lubricants must be	Physical verification and routine monitoring	Site Manager

		kept on bunded structure 6. If an oil spill occurs, collect the contaminated soil, store in drums and dispose at appropriate waste disposal site (e.g. Municipal disposal site)		
Solid Waste	To prevent pollution and maintain a clean environment	Classify waste into different categories e.g. Material waste (wood, steel, corrugated iron etc.), Building rubble (concrete), Garden Waste (tree stumps, branches etc.), and Domestic Waste (Litter – cans, plastics, tissues etc.) Each category should be disposed off in accordance with the Municipal Regulations and in the most suitable and environmentally acceptable manner All waste produced on site should be contained and disposed as per Municipal regulations No onsite burying, dumping or burning of waste material shall be permitted. Ensure appropriate waste collection and removal from the site and dispose at appropriate municipal waste disposal sites	Scattered waste, littering and any other unsightly waste at the site (eyesore)	Site Manager/dedicated Waste Disposal Officer
Waste Water	To avoid effluent discharge	Refer to regulations on effluent disposal	No leakage of sewer pipes	Site Manager

	into the environment	Be on the look-out and repair any leaking or broken sewer pipes (regardless of how small it may be perceived)		or dedicated Plumber

SECTION D: ENVIRONMENT

Table 10: Mitigation measures pertaining to Environmental impacts

Potential Sources of impacts: ✓ Uncontrolled routes (everyone drives wherever they want) ✓ Disregard of environmental values, concerns and recommendations ✓ Lack of awareness amongst workers and contractors of how their actions may impact on the environment ✓ Soil erosion and biodiversity loss due to the clearance of vegetation, excavations etc. ✓ Unauthorized, over-utilization and wastage of water resources				
Impact Description	**Objective**	**Mitigation Measures**	**Indicators for Monitoring and Compliance**	**Responsible Party**
Landscape alteration (damage)	Limit the number of access roads	Only create access routes as necessary (in line with the site layout plan) and instruct drivers to stick to demarcated roads	Instructions / Meeting Minutes, signed by drivers	Site Manager
Ecological disturbances (both fauna and flora)	Remove trees only as necessary (if it obstructs the and construction process) Where possible, minimize disturbance to prevent loss biological diversity	Acquire permits from relevant authority for the removal or cutting down of protected trees (Permits to remove protected trees required from MAWF – Forestry)	Photographic records of site before and construction commencement Regular review of photographic records	Site Manager
High Water Demand and wastage of water resources	Limit water abstraction and water use Recycle and re-use water as far as possible	Obtain water abstraction permits from MAWF – Water Affairs. Permits are required to collect water from a borehole	Water demand and records for water use, water saving mechanisms and recycling efforts	Site Manager
Land	To reduce soil erosion	Adopt soil protection measures to mitigate	Photographic records of	Site Manager

degradation and loss of topsoil leading to soil erosion		soil erosion against storm water (run-off) Re-use the topsoil / overburden for backfilling If there is not enough topsoil available, as alternative, topsoil of a similar quality may be used Compacted soil should be ripped to ensure effective re-vegetation	site before commencement	
Pollution of surface and groundwater resources	To avoid any potential water contamination or pollution	Prevent, control and manage contaminate runoff from the and construction site Maintain a buffer of 100 m from watercourses. Measures include oil and grease traps, cleaning up spills immediately and proper disposal of contaminated material. Rubble, sand and waste material resulting from the and construction activities must be cleared up but not disposed in any stream or drainage channels as it will impede on the flow in these channels Train staff on the cautious use of all hazardous chemical substances used onsite including	Adequate drainage system/channel in place Inventory register for all chemicals ECO to verify implementation of the mitigation measures proposed in this EMP and compile the report	Site Manager

		fuel, greases and oils Keep a stock inventory register in the store and ensure that all chemicals are properly labelled Proper storage of chemicals (e.g. lockable storeroom) and access control Storage area for hazardous chemicals should comply with standard fire safety regulations. Safety signage including (e.g. No Smoking, Danger etc.), to be clearly displayed in areas housing chemicals. Appropriate equipment to deal with emergency spill incidents must be readily available on site. This includes spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks, drums or containers for contaminated water. Personnel handling hazardous chemicals and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE). Immediately clean all spillage of fuels,		

		lubricants and other petroleum based products. No hazardous chemicals must be discharged in the sewage / water systems. Soil contaminated with hazardous chemical substances shall be treated as hazardous waste and removed from site.		
Poor waste management, including Nuisance caused by odours and unsightly appearance of waste onsite.	To prevent pollution due to poor waste management	The management of waste must be in accordance with the waste disposal regulations (if available) Installation of sufficient waste bins skips or bulk containers. Containers must be present on site at all times. All containers (bins, skips or bulk containers) shall be kept clean and hygienic Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored on site	Regular site inspections Internal audits against this EMP must be conducted every 3 months and records kept onsite Shortcomings must be addressed immediately	Site Manager

		General waste shall be stored in a manner that prevents the harbouring of pests. General waste material should always be stored or disposed off separately from hazardous waste material (e.g. oil, diesel). General and hazardous waste can be deposited into appropriately demarcated bins Skips or bulk containers should be removed to a licensed landfill site on a weekly basis or more often if required. No littering is permitted and site clean-ups must be regularly undertaken		
Soil and groundwater pollution from unsanitary conditions onsite	To prevent soil, and groundwater pollution from unsanitary conditions onsite.	Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers. Ablution facilities are to be serviced weekly or more frequently if required. Toilet paper must be provided at all times. Defecating / urinating anywhere other than in the toilets should be prohibited	Availability of adequate, clean and hygienic sanitary facilities (toilets) on each and construction site	Site Manager
Soil and groundwater pollution from leaking or broken sewerage	To prevent soil and groundwater pollution from leaking or broken sewerage pipes	Ablution facilities should be maintained to prevent blockage and leakages. Create employee awareness about the proper use of ablution facilities and the importance of	Regular site inspections. Internal audits against this EMP must be conducted every 6 months and records kept onsite. Shortcomings	Site Manager

pipes.		proper hygiene. **No** cigarette butts, fat, oil, paper towels etc. may be disposed of into toilets or washbasins.	must immediately be addressed	
Visual Impact	Minimize / limit visual impact	Limit Landscape alteration Colour Schemes for infrastructure (buildings, walls, fences etc.) should blend in with the natural environment	Colour Schemes presented and approved by authorities	Proponent (Architect)

SECTION E: SOCIO-ECONOMIC

Table 11: Mitigation measures pertaining to Socio Economic impacts

Sources of impacts:

- ✓ Unfair labour practices and unwillingness to recruit locals
- ✓ Lack of awareness on HIV-AIDS
- ✓ Drug and alcohol abuse
- ✓ Lack of bridges to cross river streams during rainy season

Impact Description	Objective	Mitigation Measures / Management Actions	Indicators for Monitoring and Compliance	Responsible Party
Employment opportunities for Locals	Promote benefits to the local community Promote benefits to local communities	Recruit locals for unskilled labour For all other jobs it should be specified in the contractor's contract that all positions shall only be filled by non-locals if it can be demonstrated that the required capacity is not available locally Where possible, procure materials from local suppliers	Employee structure and proportion of local employment	Proponent
Alcohol and Drug use	Prevent alcohol and drug use at the tourism development site	Ban and warn the employees against the use of alcohol and drug at the site	Drunk/Misbehaving employees	Site Manager

		Provide awareness on the dangers and health impacts of alcohol and drug use	Monitor presence of alcohol at the site	
Excessive working hours	Adhere to the Labour Act No. 11 of 2007	Adhere to prescribed working hours as per the Namibian Labour laws and regulations. Provision for overtime or compensatory time off for long hours worked	Verification of working hours against the labour Act	Site Manager
HIV/AIDS	Provide HIV/AIDS awareness to employees	Provide HIV/AIDS awareness at induction Avail Condoms (e.g. in toilets)	Availability of condoms at and construction site	Site Manager
Security	Orientation of workers about security for both equipment and themselves	Orientate all staff about the security of equipment and themselves & provide contact numbers for Police and other emergency services e.g. Ambulance	Proof of security orientation and emergency contact numbers	Site Manager

SECTION F: CULTURAL HERITAGE

Table 12: Mitigation measures pertaining to Cultural Heritage impacts

Sources of impacts: ✓ Disregard of Cultural Heritage and artefacts				
Impact Description	**Objective**	**Mitigation Measures/**	**Indicators for Monitoring and Compliance**	**Responsible Party**
Heritage Resources/artefacts	Reduce the impacts of and construction and associated earthworks on heritage resources/artefacts	Heritage remains or artefacts discovered on site must be reported to the National Museum (+264 61 276800) or the National Forensic Laboratory (+264 61 240461) No artefacts must be removed or be interfered with prior to authorisation from the Namibian National Heritage Council (NHC) Recovery of heritage remains or artefacts discovered and removal thereof should be directed by the National Museum	Sighting report/s of heritage resources/artefacts	Site Manager

Table 13: Heritage Remains Chance Find Procedure

CHANCE FIND PROCEDURE FOR DISCOVERY OF UNEARTHED HERITAGE REMAINS	
Responsible Heritage Resources Authority	National Heritage Council of Namibia 52 Robert Mugabe Avenue, Windhoek, Private Bag 12043, Ausspannplatz, Windhoek. Tel +264 - 61 - 244 375 Email info@nhc-nam.org Web http://www.nhc-nam.org
Potential finds	Human remains (e.g. bones), cultural and archaeological items (e.g. physical artefacts and intangible attributes of the Namibian society such as indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), and natural heritage items (e.g. fossils, subfossil wood).
Protocol	1. Once alerted to occurrence(s): alert site supervisor, stop work in area immediately (*N.B.* safety first!), safeguard site with security tape / fence / sand bags if necessary.
	2. Contact the Group Manager
	3. Record key data while finds are still *in situ:* Accurate geographic location – describe and mark on site map / 1: 50 000 map / satellite image / aerial photo Context – describe position of finds within stratigraphy (rock layering), depth below surface Photograph find(s) *in situ* with scale, from different angles, including images showing context (*e.g.* rock layering) Send finds to the Group Manager if they cannot visit the site.
	4. Group Manager to identify if a suitably qualified specialist such as an archaeologist needs to visit the site. Group Manager to liaise with National Heritage Council of Namibia to determine next steps and obtain the correct approval (e.g. a permit).

	4. If feasible to leave *in situ*: Ensure site remains safeguarded until clearance is given by the Authority for work to resume	4. If *not* feasible to leave *in situ* (emergency procedure only): *Carefully* remove finds, as far as possible still enclosed within the original sedimentary matrix (*e.g.* entire block of fossiliferous rock) Photograph finds against a plain, level background, with scale Carefully wrap finds in several layers of newspaper / tissue paper / plastic bags Safeguard finds together with locality and collection data (including collector and date) in a box in a safe place for examination by a palaeontologist Liaise with the National Heritage Council of Namibia, move finds to National Museum or other location as advised.
	5. Implement any further mitigation measures proposed by the National Heritage Council of Namibia	

SECTION G: REHABILITATION

Table 14: Potential impacts and Mitigation measures pertaining to Rehabilitation

Sources of impacts:

- ✓ Landscape alteration due to lack of rehabilitation
- ✓ Biodiversity loss due to lack / poor rehabilitation
- ✓ Loss of topsoil due to lack of restoration measures
- ✓ Steep edges of and construction pits may become a death trap for animals
- ✓ Waste (Left over of broken equipment, material offcuts etc.)

Impact Description	Objective	Mitigation Measures/	Indicators for Monitoring and Compliance	Responsible Party
Habitat alteration and permanent environmental scars of the and construction operations	To minimize habitat alteration and environmental scars	Limit environmental damages and re-use e.g. the overburden may be collected and piled and used for re-filling of pits Plant indigenous trees to fill the gaps for trees removed during construction	Re-filling of and construction pits with the overburden Indigenous Trees planted	Site Manager
	Landscaping	Landscaping – refers to re-shaping man-made landforms to blend in with the environment and in order to limit the damage to the natural landscape	Landscaping efforts and modification towards natural state	Site Manager
Waste discarded all over the place	Clean-up	Remove any foreign objects (including infrastructure), that is not needed at site upon project completion	Clean-up after project closure	Site Manager

6 CONCLUSION

The EMP recommends measures to be implemented by the proponent, the contractor and sub-contractors in order to manage the tourism development activities on behalf of Baobab Rest camp (the Proponent), in an environmental friendly manner, and in accordance with the provisions of the Environmental Management Act and EIA regulations.

In-addition, the aim of the EMP is to ensure legal compliance to prevent environmental fatal flaws. As a result, the EMP recommends mitigation measures in order to ensure that the recommended activity (upscaling of irrigation activities) is conducted in an environmental friendly manner, and in accordance with the provisions of the Environmental Management Act and EIA regulations.

Non-compliance against the EMP is punishable and specific responsibilities have been assigned to role players' in-order to ensure that the EMP is implemented. The key role-players (Proponent, Contractor, and Site Manager) as defined under section 4 should:

- ***Read*** the EMP (particularly the Site Manager) and ensure that they are fully conversant with provisions of the EMP,
- If need be, ***Ask for clarity*** from the Environmental Assessment Practitioner (EAP), Environmental Compliance Officer (ECO) or relevant authority,
- Ensure implementation of the recommended mitigation measures, and
- Communicate defaults / challenges to the ECO as soon as possible.

It is recommended that an Environmental Control Officer (ECO) should monitor (conduct periodic and unannounced EMP audits) throughout the development phase, in-order to ensure compliance in-accordance with the mitigation measures prescribed in the EMP.

The proponent is advised to apply for the Wastewater Purification and Effluent Disposal Permit for the ablution facilities.

7 REFERENCES

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