

UPDATED ENVIRONMENTAL MANAGEMENT PLAN(UEMP): LIVINGSTONE'S CAMP, LINYANTI, ZAMBEZI REGION: NAMIBIA



Environmental Consultant:

EnviroPlan Consulting cc

Project Proponent:

Livingstone Lodge (PTY)
LTD

February 2020

APP-001191

PROJECT TITLE:

UPDATED ENVIRONMENTAL MANAGEMENT PLAN
(UEMP): OPERATION OF LIVINGSTONE'S CAMP,
LINYANTI, ZAMBEZI REGION: NAMIBIA

PROPONENT:

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Project Name:

Operation of Livingstone's Camp, Linyanti, Zambezi Region: Namibia

Period

This audit report and updated EMP covers the period starting from June 2014 to December 2019, this was necessitated by the fact that no biannual reports were submitted during the operational period after the Environmental Clearance Certificate was issued on 16 April 2014.

Stage of Report

Final Report

Client

Livingstone Lodge (Pty) Ltd

Date of Release:

February 2020

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Acronyms

TERMS	DEFINITION
BID	Background Information Document
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
EMR	Environmental Monitoring Report
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&APs	Interested and Affected Parties
MET: DEA	Ministry of Environment and Tourism's Directorate of Environmental Affairs
NHC	National Heritage Council
NEMA	Namibia Environmental Management Act
PRP	Pit Rehabilitation Plan
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change

1. CHAPTER ONE: BACKGROUND

1.1. INTRODUCTION

Livingstone's Camp is an operational camping site located in Sangwali Village - Linyanti Area and it focuses on photographic, historical and cultural tourism. The camp is serving as a specialty provider of excellent camping and associated services for middle and upper-income clients.

LIVINGSTONE LODGE (PTY) LTD herein referred to as the "proponent" intends to continue operating the existing campsites and expand by establishing more campsites, all to be done in an environmentally responsible manner on their current operating Site in Linyanti.

Thus, in accordance to the requirements of the Environmental Management Act, No. 7 of 2007 Section 40 the companies' environmental clearance certificate granted on in April 2014 has come to its lapse period as section 40 of the Act states that:

- (1) An environmental clearance certificate becomes effective and operates from the date endorsed on the certificate.
- (2) An environmental clearance certificate remains effective for a period not exceeding three years, subject to cancellation or suspension under section 42.

It is under this background that this document has been prepared following a request by the proponent, to the consultant (EnviroPlan Consulting cc) to conduct an environmental audit and develop an environmental management plan to accompany the application for renewal of the expired Environmental Clearance Certificate Renewal to the MET: DEA.

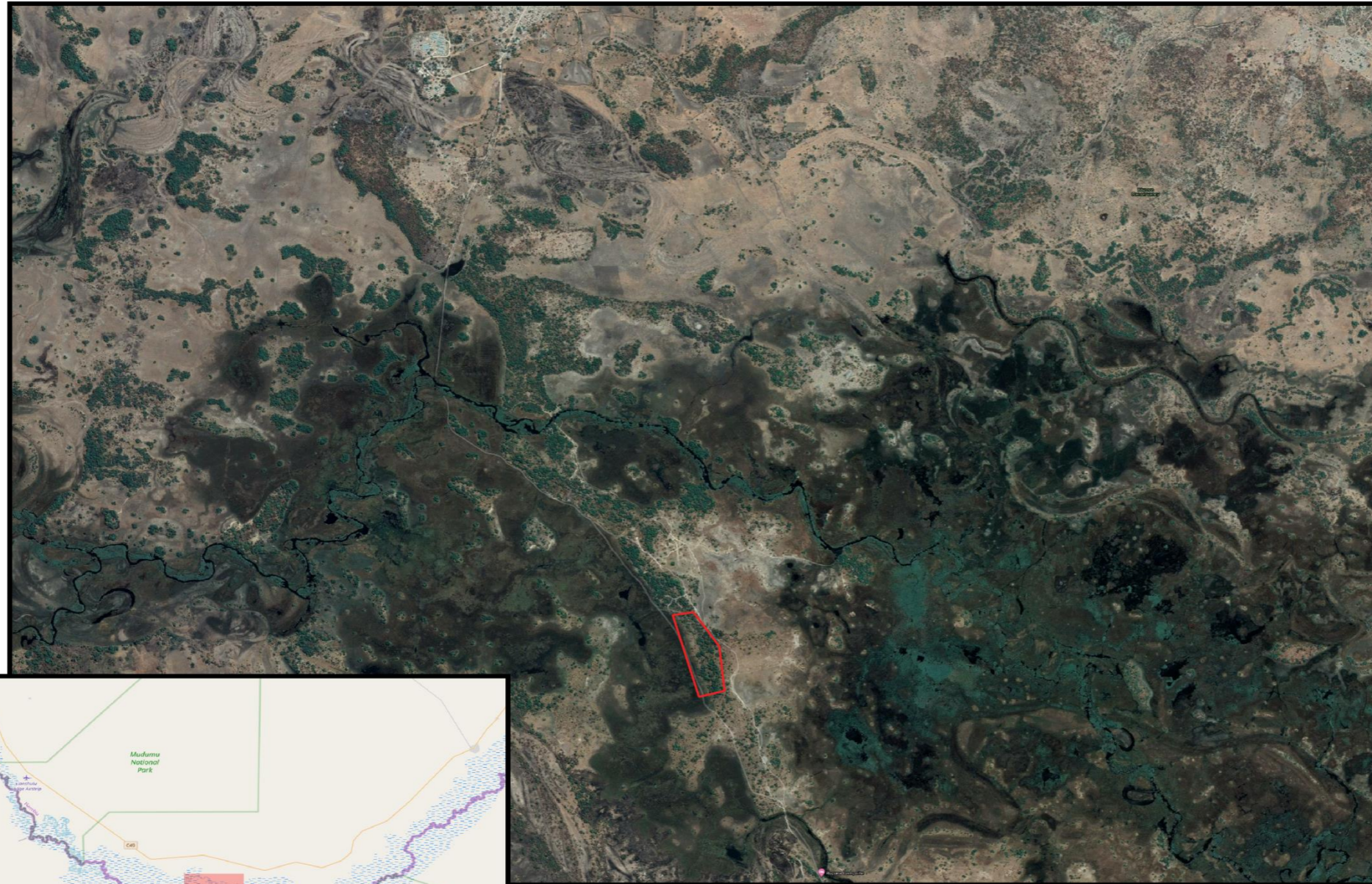
1.2. PROJECT LOCATION

Livingstone's Camp is located in Sangwali Village within Wuparo Conservancy area, the project site coordinates are as follows:

	Lat	Long
a)	-18.297330°	23.651821°
b)	-18.302021°	23.655531°
c)	-18.305261°	23.656253°
d)	-18.305609°	23.654252°
e)	-18.299525°	23.650525°

The map below (Fig 1) gives a locality overview of the project site

LIVINGSTONE'S CAMP LOCALITY



LEGEND

-  Livingstone's Camp
- OpenStreetMap

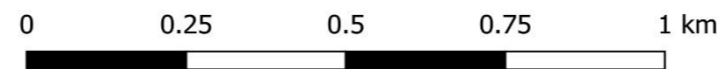
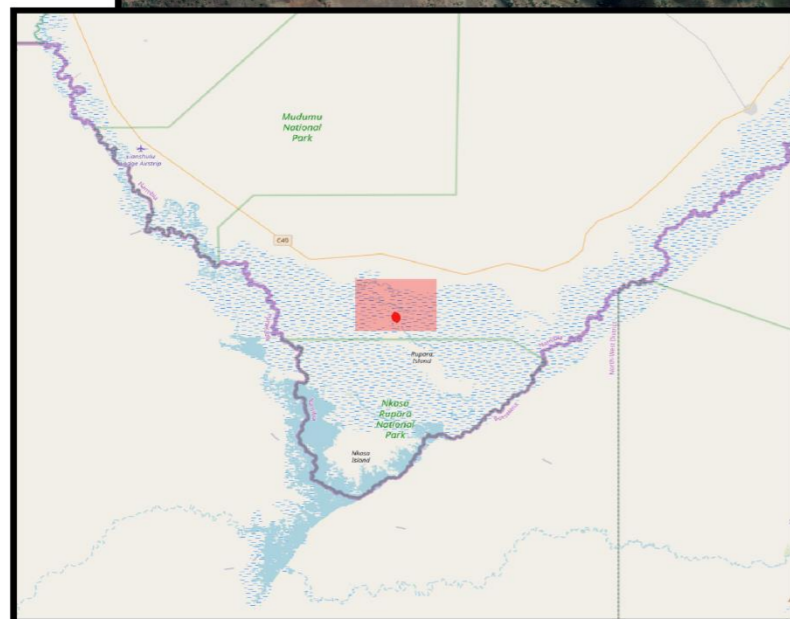


Figure 1: Livingstone's Camp Site, Zambezi Region-Namibia

1.3. PROJECT DESCRIPTION

Livingstone's camp has five exclusive campsites and Eight more camp sites are proposed for establishment. Each tent has an en suite ablution facility of a shower and toilet and a spacious private deck. In addition, existing on site is a main building which shall have a viewing deck, dining area, kitchen, bar and a library. This shall command a view of the floodplain.

The proposed upgrade involves:

- a) Establishment of 8 campsites with associated services

Existing on site are:

- a) 5 Campsites with ablution facilities
- b) Central area incorporating viewing platform, dining area, library and communal kitchen
- c) Manager's tent
- d) Modest workshop and storage area
- e) Simple laundry

The following services are offered on site:

- a) Lodging in upmarket self-catering tented accommodation
- b) High-end exclusive campsites
- c) Guided game/natural history drives with well-trained guides
- d) Guided hiking trails
- e) Historical tours and cultural visits to neighbouring villages
- f) Mukoro rides in nearby channels which do not pose a threat from hippos
- g) Limited angling on a "catch & release" basis



Figure 2: Livingstone's Camp Facilities

(Right Image: Shows the blending of Livingstone's camp sites with the surrounding environment, Centre: Illustrates proposed site for new camps and Right indicates Fire extinguisher at all camp sites to ensure fire safety.)



Figure 3: Livingstone's Camp Services

(Right Image: Shows ablution facility on each camp stand, Centre: Illustrates conservancy tanks for sewage waste and Right indicates use of solar energy usage to power the campsite energy needs.)

1.4. OBJECTIVES OF THIS STUDY

The objectives of Re-certification assessment as conducted in January 2020, was to establish the extent to which the environmental management plan approved by the DEA is being followed as well as to determine the extent to which non-compliance issues can be rectified for the effective implementation of the environmental management plan. The following issues have been looked at:

- An assessment of legal and another requirements compliance.
- Analyse the Implementation of the Environmental Management Plan in managing environmental impacts/aspects from daily operational activities.
- Document a corrective action Environmental Management Plan.
- Apply for ECC renewal with MET: DEA

1.5. SCOPE OF ASSESSMENT

The assessment was conducted based on a sample of the organisation's activities, were no non-conformances were recorded in an area of the organisation's activities, or against any requirement of the relevant standard, it does not necessarily indicate that no non-conformances exist. It should be noted that it is imperative to understand that the purpose and scope of the assessment is not to identify and record all non-conformances but only to obtain sufficient information upon which the ECC was issued.

It therefore follows that future non-conformances, not identified during this assessment, could be recorded during subsequent assessments. It is the responsibility of the organization to determine if similar non-conformances, such as those recorded during the assessment, exist in other areas of the environmental management plan and identify other potential negative impacts on the environment during their internal audit processes, to take the necessary corrective action.

2. METHOD OF ASSESSMENT

2.1. LITERATURE REVIEW

An analysis of Livingstone's camp operational environmental files was conducted, this included reports and recommendations from routine inspections by DEA's Environmental Officers, scrutiny of previous EMPs and initial Scoping assessment for the project as well as other Namibian legal requirements and similar reports conducted previously.

2.2. KEY INTERVIEWS

Interviews with the Site manager, tour guide operators and two general hand employees was conducted to:

- Understand all the activities and process operations of the project proponent.
- Establish the extend of environmental impacts, measures being employed to manage environmental aspects/impacts.
- To source first-hand information on environmental and social issues about the operation of the project
- Lobby for possible solutions to some of the environmental challenges being faced by the proponent.

2.3. SITE INVESTIGATION

Physical inspection of operational areas, with the camp manager as well as other employees. These included the use of photographic evidence for further scrutiny. A site audit checklist based on the Environmental Management Plan developed for the facility. Non-conformances were discussed during the preceding meeting after the audit investigation.

3. ENVIRONMENTAL MANAGEMENT COMPLIANCE

3.1. POLICY AND LEGISLATORY COMPLIANCE

The camp was assessed in relation to compliance with guiding legal requirements in Namibia, international conventions and best practices for environmental management and the existing Environmental Management Plan for the facility.

Compliance was categorised in the following:

- a. Non-Compliance (NC)
- b. Partial compliance (PC)
- c. Compliant (C)

Table 1: Legal and other requirements compliancy assessment

Aspect	Legislation	Compliance Status	Comments
The Constitution	Namibian Constitution First Amendment Act 34 of 1998	PC	-The Proponent conducted an EIA and obtained an ECC in 2014, however it was not renewed on time.
Archaeology	National Heritage Act 27 of 2004	C	-The contractor had strict directives during construction to ensure that if they come across artefacts, graves or seeming culturally important objects and sites they were to notify the relevant authorities.
Environmental	Environmental Management Act 7 of 2007	PC	-By applying for the ECC renewal The Proponent is complying the Act. -The proponent has failed to conduct biannual reports and submit annual reports to MET: DEA as stated by the Act and its regulations.
	Pollution and Waste Management Bill (draft)	C	-The camp has a clear waste management system, where there is a temporary waste

			storage site and the waste is subsequently taken to Sangwali Settlement dumpsite for safe disposal.
	Soil Conservation Act 76 of 1969	PC	-There is no evidence of soil erosion on site caused by current operations or during construction.
Forestry	Forest Act 12 of 2001	C	-The project does not have cumulative impacts on vegetation.
	Nature Conservation Ordinance 4 of 1975	C	-Employees have been trained against indiscriminate tree harvesting, hunting and gathering of forest produce. -The camp makes use of trained tour guides to ensure that fauna and flora species are not affected during touring activities. This also include getting necessary permissions from responsible authorities such as MAWF and MET.
Health and Safety	Labour Act (No 11 of 2007) in conjunction with Regulation 156, 'Regulations Relating to the Health and Safety of Employees at work'.	NC	-Employees' PPE is not sufficient. -Employees are not trained not health and safety -There are no SHE Representatives on site
	Public Health and Environmental Act, 2015	NC	-Site health handling well managed with conservancy tanks being used for ablution wastewater.
Land Use	Mineral Act 1992	C	-All relevant registrations with Wuparo Conservancy

			and Sangwali Village Development Committee has be conducted..
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3.2. ENVIRONMENTAL MANAGMENT PLAN COMPLIANCE

The operation of the camp establishment has been operating as planned and as clients increase, the company has seen the need to comply with Environmental Legislations in the country as well as expand operations. However, its operations were assessed in relation to compliance with the commissioned Environmental Management Plan upon which the previous ECC was operating under. The major environmental impacts and/ aspects identified and addressed in the EMP were assessed in relation to remediation or impact prevention with the corrective action measures provided for in the EMP. Compliance was categorised in the following:

- a. Non-Compliance (NC)
- b. Partial compliance (PC)
- c. Compliant (C)

Table 2: Environmental Management Compliance Summary

Environmental Aspect	Environmental Impact	Compliance Status	Comments
Vegetation	Protected Species destruction.	C	-The current operation are not affecting any protected tree species both fauna and flora and new sites establishment will not result in any habitat destruction or removal of endangered species.
	Indiscriminate tree cutting	C	-The plant area has sparse vegetation and if for any reason there are any developments to be done on site, vegetation removal will be minimised or prevented completely.
Fauna	Driving away of local wild animals	C	-The site is kept as pristine as possible to ensure that it blends with the surrounding environment and this has been working since the wildlife movements in the area have not been affected.

	Indiscriminate killing and hunting of animals	C	-Employees have been trained on the importance of animals and the non-hunting policy of the company.
Culture and Heritage	Archaeology	C	-Employees have been trained and informed of the course of action if they come across artefacts, graves or seeming culturally important objects and sites. -Livingstone's camp is a culture and Heritage centre such that there is great importance placed on any archaeological and historical findings that may occur in the area.
	Proliferation of local cultures	C	-The Proponent employed local people to ensure that the operations blend with the local cultural values -Employees from other areas of different cultural values have been given guidelines on conduct with the public. -The Proponent works hand in hand with the Village Headman.
Environmental Quality	Soil erosion	PC	-There is no visible erosion on site.
	Water abstraction	C	-Water is supplied from an existing borehole
	Water pollution	NC	-Polluted soil can result in hydrocarbons and chemicals deposition in nearby streams during the rainy season. Thus, there is need to put in mechanisms to ensure that wastewater and hazardous waste are effectively contained. -To date effluent waste handling on site is in unacceptable condition and it is regularly maintained to ensure that the immediate environment is free from pollution.

	Noise pollution	C	-Operational activities such as game drives, fishing and wilderness touring are only done during the day.
	Aesthetic pollution	NC	-Housekeeping on site is commendable and the camping site structures blends with the local environment.
Land Use	Land Use change and resource depletion	PC	-There is need for a visible sign board in the trail informing the uses of speed limit, risk of animals and dangerous turns. -In terms of local area carrying capacity, the proponent has ensured that the project fits into the area and uses as minimal resources as possible.
Health and Safety	Workplace injuries and illnesses	NC	-Employees did not have appropriate PPE -There is no Safety training given to employees -The site does not have safety markings and or Signs.
Socio-Economic issues	Employment	C	-The Proponent has local employees to ensure that the local village benefits from the operation as well as promotion of eco-torism.
	Social responsibility	C	-The Proponent also sponsor local sports and activities. -The proponent has also installed a borehole for animals during the dry periods such as the one experienced in 2019, this has saved a lot of Hippos, Elephants and other small animals in the area.

4. CHAPTER FOUR: UPDATED ENVIRONMENTAL MANAGEMENT PLAN

4.1. OVERVIEW

As part of the project operational guidelines, significant residual impacts identified in the previous chapter are mitigated to the extent possible, giving due regard to the scale of operations of the individual micro enterprises, through a systematic environmental management plan.

This Updated Environmental Management Plan describes measures to be adopted for reducing/managing environmental impacts of each activity in the operation of Livingstone's Camp and new camp sites establishment guidelines responsibility of implementation and monitoring/reporting to the stakeholder best placed to carry it out. This plan should be supplemented with independent monitoring to ensure and improve implementation of the plan. With condition that the full implementation of this updated EMP is done appropriately and strictly, EnviroPlan Consulting cc recommends the proposed ECC renewal be granted to the proponent.

4.2. ENVIRONMENTAL IMPACTS SUMMARY

From the preceding discussion, the major non-conformances and environmental impacts in relation to Environmental Management are as follows:

- Environmental Quality (pollution control)
- Waste Management
- Health and Safety
- Construction Activities

4.3. CONTENTS OF THE EMP

The EMP has been developed to minimize the residual impacts for the continued operation of Livingstone's Camp, particularly to:

- Prevent environmental pollution;
- Improve the health and safety of employees
- Nature conservation

In the subsequent pages, the activity wise detailed EMP is presented, which includes

- description of the agreed measures, responsibilities and instruments for the environmental management
- Guidelines for audit and monitoring the EMP.

4.4. EMP ADMINISTRATION

There is a strong need to clearly outline the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. There is also a need for the proponent to appoint an overall responsible person (project manager) to ensure the successful implementation of the EMP as highlighted on table 3:

Table 3: Roles and Responsibilities in EMP Implementation

ROLE	RESPONSIBILITIES
Camp Manager	Responsible to enforce EMP implementation to contractors, tourists and employees.
Environmental Control Officer	<ul style="list-style-type: none"> • Implement, review and update the EMP. • Ensure all reporting and monitoring required under EMP is undertaken, documented and distributed as needed • Conduct environmental site training (toolbox talks) and inductions with the support of an environmental consultant. • Conducts environmental audit at camp site • Close out all non-conformances. • Ensure materials being used on site are environmentally friendly and safe.
The Department of Environmental Affairs	<ul style="list-style-type: none"> • Review the EMP and any amendments to the EMP. • Review reports of environmental issues and non-conformances as issued. • Review and approve environmental reports submitted as part of EMP implementation
Workers	<ul style="list-style-type: none"> • Follow requirements as directed by site engineers. • Report any potential environmental issues to site engineer/project manager, indicating spilt oil, excess waste, excessive dust generation, dirty water running off the site and other possible non-conformances

Table 4: Fauna and Flora Management Plan

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Operation phase				
Vegetation	-Indiscriminate cutting down of trees -Cutting down of protected tree species	<ul style="list-style-type: none"> • Employees will be educated on protected tree species in the area • Emphasis will be given on preserving trees that are more than 18cm in width on site. • The operation phase of the project will not result in any further vegetation removal. 	Construction and Operation	ECO
Flora	-Driving away of local animals from noise -Habitat destruction -Hunting and setting up traps	<ul style="list-style-type: none"> • Operations should only be done during the day to minimise noise disturbance to animals • Strict compliance to the site establishment EMP developed for Livingstone's camp in 2014. • Employees will be punished or dismissed if caught setting up snares or hunting • Since wildlife touring activities includes interaction with flora, it is vital to ensure that vegetation is not removed since it is the basis for wildlife habitats in the area. 	Operation	Camp Manager

Measures already in place:	<ul style="list-style-type: none"> • Employees were informed and warned against indiscriminate tree cutting and animal hunting. <p>There is an Existing EMP on campsite establishment.</p>
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Table 5: Environmental Quality Management Plan

Impacts	Description	Mitigation measures	Project phase	Responsibility
Operation phase				
Noise pollution	-Truck and machinery operating on site during new sites upgrade -Tourism activities	<ul style="list-style-type: none"> • Any activities on and around the camp site emanating more than 45db should be done during the day between 8:am to 5pm 	Construction and Operation	Camp Manager
Surface water pollution	-Hydrocarbons from stationary vehicles -Leakages from conservancy tanks	<ul style="list-style-type: none"> • All stationary vehicles and trucks on site to be provided with drip trays. • Workshop area should be bunded and surfaced with waterproof cement • The wastewater reticulation system should be regularly maintained and inspected. • Water quality testing of a nearby spring. 	Operation	ECO
Soil contamination and erosion	-Hydrocarbons from stationary vehicles and during repair of vehicles on site.	<ul style="list-style-type: none"> • Emergency spillage containment kits should be available on site. 	Operation	ECO

Measures already in place:	<ul style="list-style-type: none"> • Regular inspection and maintenance of sewerage reticulation systems at all sites. • Vehicle servicing is conducted off-site
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Table 5: Waste Management Plan

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Generation of waste	<p>-During the operation phase, litter in the form of papers and plastics is likely to be produced.</p> <p>-In addition, effluent waste from skin processing is anticipated.</p> <p>-Generated effluent waste is managed by ponds on site, an additional pond will be added if necessary.</p> <p>-It was however, observed that there is a considerable high volume of solid waste from the site as well.</p>	<ul style="list-style-type: none"> • Strictly, no burning of waste on the site • There are five skip containers on site for general waste, hazardous waste and animal remnants such as hides, bones, fats, etc. Once the containers are full, rent a drum collects them for disposal. 	Operational phase	Camp Manager
Measures already in place:	<ul style="list-style-type: none"> • Regular inspection of the site • Employees conduct the cleaning works • Temporary waste storage bins • Biodegradable compost • Environmental Audits • Regular disposal waste at Regional Council approved site in Sangwali Village 			

Table 6: Risk of Occupational Health and Safety

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Risk of OHS	-Occupational exposures are normally related to noise effects, Electrocution, Slip and Falls, Occupational dermatitis, psychological pressure, Vehicle accidents, animal attacks and fatigue	<ul style="list-style-type: none"> • Frequent distribution of protective equipment to employees (tour guiding wear). • Trainings on occupational health and safety • Safety talks to be done every day before commencement of work • Regular (once a year) medical check-ups • First Aid kits to be available at the site • There is need to install safety signs on the access road giving speed limits, animal hazards and informing that it is a trail road. • Provision of firefighting equipment on site 	Operation phase	Camp Manager
Measures already in place:	<ul style="list-style-type: none"> • Personal Protective clothing (insufficient) 			

Economic Impacts

Table 7: Employment creation

Impacts	Description	Enhancement Required	Monitoring	Project Phase	Responsibility
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Employment creation	Five employees are permanently working on site. It is also essential to note that other companies work as contractors and subcontractors hence creating employment.	<ul style="list-style-type: none"> • When recruiting, gender equality must be ensured • Equity, transparency, to be put into account when hiring and recruiting • Implementation of training programs so as to train the unskilled workers in order for them to enhance their performances and to gain more knowledge that they might demonstrate at other levels in future. 	Number of locals employed	Operation phase	Camp Manager
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Table 8: Government revenue

Impacts	Description	Enhancement Required	Monitoring	Project Phase	Responsibility
Payment of taxes	The proponent pays tax to the government which indirectly benefits the whole country.	<ul style="list-style-type: none"> • The proponent should pay tax as stipulated by the law of Namibia. 	Checking tax payment end of year	Operation	Camp Manager

5. CHAPTER FOUR: ENVIRONMENTAL MONITORING AND CONTROL

5.1. OVERVIEW

The following management plans need to be implemented during construction and operation of Livingstone's Camp

- Construction Management Plan;
- Construction Control Plan,
- Operation Management Plan.

Many of the issues to be addressed in these plans are regulated in existing laws, regulations and guidelines as well as the existing Livingstone's camp EMP. In addition, it is recognized that the content of several plans will be generic, in the sense that existing procedures are documented in standard code of practice, and that adaption of such generic plans will only be possible as a dynamic process during construction, operation and decommissioning.

5.2. CONSTRUCTION MANAGEMENT PLAN

The construction management plan to be implemented by Livingstone's camp during establishment of additional camping sites shall include the following key measures:

5.2.1. MANAGEMENT OF CONSTRUCTION CAMPSITE

1. The contractor shall comply with all relevant laws and regulations concerning water provision, sanitation, wastewater discharge and liquid and solid waste handling and disposal. The contractor is referred to the requirements of the EMA
2. The campsite will be access controlled to prevent the access of livestock and local fauna.
3. The contractor shall not locate the campsite, or sanitation facilities, in any areas in which vegetation is pristine, nor within 100 m from any watercourse.
4. The contractor shall at all times carefully consider the machinery required for the desired task while minimizing the extent of environmental damage.
5. The contractor shall keep construction campsites clean and tidy at all times. The contractor shall not leave domestic waste uncontained, and temporary storage shall be enclosed to keep out people and animals. No permanent domestic waste disposal shall be permitted at the campsites. All domestic refuse is to be removed to an existing licensed landfill site.

6. The contractor shall take specific measures to prevent the spread of veld fires, caused by activities at the campsites. These measures may include appropriate instruction of employees about the fire risks and the construction of firebreaks around the site perimeter.
7. All vehicles and plant will be allocated a dedicated parking area in the camp site. Plant still standing for long periods of time will be provided with a drip tray in order to contain any possible hydrocarbon spills. Drip trays will be provided with absorbent material on a permanent basis.
8. Adequate firefighting equipment shall be made available and maintained on site.
9. Decommissioning of the campsite will involve removal of all compacted platforms and slab foundations or as agreed with the land owner.

5.2.2. MANAGEMENT OF FUELS AND OTHER HAZARDOUS MATERIALS

10. The project shall comply with all applicable laws, regulations, permits and approval conditions and requirements relevant to the storage, use and proper disposal of hazardous materials.
11. All hazardous materials and wastes in a safe and responsible manner, and shall prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials.
12. Should soil be contaminated by hazardous substances, soil will be removed and disposed of at a registered hazardous waste disposal facility.
13. No fuel storage or refuel any vehicle or equipment within 100 m from a watercourse or wetland, within a floodplain, or where there is the potential for spilled fuel to enter a watercourse or groundwater. Should it not be possible to establish such facilities outside the 100 m zone, the contractor shall ensure that the necessary precautions to prevent and clean up spillages.
14. The contractor shall take all reasonable precautions to prevent fuel and lubricant spills during the course of construction. To this end, the contractor shall ensure that regular audits are performed to verify that no leakage or defective equipment is brought onto site.

5.2.3. MANAGEMENT OF THE CONSTRUCTION FOOTPRINT

15. The contractor shall prevent littering and the random discard of solid waste on the site.

16. The contractor shall manage hazardous waste.
17. The contractor shall minimize the risk of fires.
18. The contractor shall prevent trespassing on the site.
19. The contractor shall prohibit, and actively monitor and prevent, poaching or harassment of wild animals by contract employees.
20. The contractor will ensure that travelling speeds do not exceed 10 km/h and shall ensure that this restriction is enforced. This may include, but not limited to, the monitoring of vehicle speeds and the erection of speed limit signs.

5.2.4. MANAGEMENT OF DUST AND NOISE NUISANCE DURING CONSTRUCTION AND OPERATION

21. The contractor shall control dust along the construction footprint so as to ensure that no detrimental effects to occupiers of the land or general public are caused. Control measures to be considered include the use of water browsers to wet down surfaces that have been denuded and which have the potential to generate dust.
22. Wetting of denuded areas, including the topsoil stockpile, will be done in such a manner that only enough water is utilized for dust suppression, and to ensure no undue runoff is caused.
23. The contractor shall comply with legal requirements for the management of noise impacts.
24. The contractor's employees shall not make recreational use of all – terrain vehicles or motorcycles on site.
25. An appropriate freeboard will be enforced for trucks hauling dirt, sand, soil and other loose materials. All material transported by trucks will be covered to prevent undue nuisance dust during transportation.

5.2.5. WASTE MANAGEMENT

26. Temporary storage of construction waste will be limited to within the construction camp site, and areas designated.
27. The contractor shall be responsible for the collection and removal of waste from the construction site.
28. The contractor shall arrange for the removal of waste on a weekly basis to a registered landfill site. Records of this disposal shall be kept on site.

29. Hazardous waste will be separated from domestic waste and stored in demarcated bins.
30. Hazardous waste bins will be stored on a hard-standing surface, covered and made water tight.
31. Safe disposal certificate will be obtained from the sub-contractor appointed for the removal of hazardous waste, and will be in adherence to the EMA Act
32. The contractor shall respect the property and rights of the landowners and occupiers at all times and shall treat all such persons with courtesy.
33. Access over land, the integrity of fences, the closure of gates, control of veld fires, littering, dust control, noise abatement, harassment of animals, sedimentation and contamination of surface and ground water, damage to landscape and vegetation, and all such environmental matters, shall be controlled as far as practical by the contractor in the best interests of Livingstone's Camp.

5.2.6. COMPLAINTS REGISTER

34. The contractor and proponent shall establish and maintain a register for periodic review by the Project Management Team that logs all complaints raised by I&APs about the construction and operational activities.
35. The register shall be regularly updated and maintain records, including the name of the complainant, his/her domicile and contact details, the nature of the complaint and if any action was taken to rectify the problem.

5.2.7. OPERATIONAL MANAGEMENT PLAN

36. Regular monitoring must be conducted during the operation to ensure that rehabilitation measures have been successful, and to determine whether any unstable cut and fill area need to be stabilized, especially after heavy rains.
37. A clean-up procedure will be conducted on a regular basis in order to ensure that litter, oil spills etc., are cleaned timeously and pollution of the watercourse is minimized.
38. Noise pollution emanating from the operation of the facility, affecting sensitive receptors will be mitigated if deemed necessary, through the construction of an earth berm or planting absorbent vegetation along the route.
39. Storm water management structures must be cleaned and maintained on a regular basis in order to minimize erosion that can cause siltation of aquatic systems. This will require regular inspections of the storm water infrastructure to confirm its functionality.

40. Occupational health and safety is crucial and thus a system will have to be implemented.
41. Fauna and Flora conservation should be emphasized at all times to employees and visiting tourists to ensure that there is no human-wildlife conflicts emanating from the campsite operational activities.
42. It should be vital to understand that Livingstone's camp existence is highly reliant on conservation of the natural ecosystems around it, thus it is essential to promote conservation and environmental responsibility

5.2.8. EXTERNAL AUDITING

43. The key to a successful EMP is appropriate monitoring and review to ensure effective functioning of the EMP and to identify and implement corrective measures in a timely manner. In the event where discrepancies are identified, the problem must be investigated and attended to. All the results obtained during environmental monitoring must be documented for audit purposes.
44. Audits should be conducted during the additional camp establishment phase to ensure adherence to the management measures contained in the EMP. The construction audit schedule will be determined by the conditions of the EA. The frequency of the construction and operational audits may vary and will be synchronised with the construction schedule.
45. During Operation Audits will also be undertaken by an appointed consultant, in addition every quarter from the awarding of the Environmental Clearance Certificate a report will be compiled on environmental performance. This will be followed with bi-annual reports to MET: DEA on project operations during construction and operational phases. It is imperative to understand that clearance certificate is valid for 3 years only, after which a renewal will have to be applied for along with performance report over the past years in terms of environmental compliance to existing legislation and this EMP.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. CONCLUSIONS

Environmental performance / compliance monitoring activities were not implemented by Livingstone's Camp for the period under review, however there was significant compliance to the developed EMP. It is therefore recommended that Ministry of Environment and Tourism Grant an Environmental Clearance Certificate to Livingstone's Camp for continual operation and establishment of additional camping sites to promote local tourism and employment in the Zambezi Region. However, the ECC will be based on religious compliance to this Updated EMP and the initial EMP developed in 2014.

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