ENVIRONMENTAL MANAGEMENT PLAN (EMP) FOR THE PROPOSED SUBDIVISION OF THE KATIMA MULILO TOWNLAND NO.1328 INTO PORTION "A" AND THE REMINDER & REZONING OF PORTION "A" FROM "UNDETERMINED" TO "GOVERNMENT" TO ENABLE THE CONSTRUCTION OF THE SPORT COMPLEX AND RELATED PUBLIC INFRASTRUCTURE



REPARED FOR

Education, Innovation, Youth, Sport, Arts and Culture

Private Bag

Windhoek

Namibia

PREPARED BY: Ministry of



+264 81142 2927

info@greegain.com.na

m https://www.greengain.com.na

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DOCUMENT INFORMATION

PROJECT NAME: Proposed Subdivision of the Katima Mulilo Townland No.1328

into Portion "A" and the Reminder & Rezoning of Portion "A" from "Undetermined" to "Government" to enable the Construction of

the Sport Complex and related Public Infrastructure

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Private Bag 13391

Windhoek Namibia

PREPARED BY: Green Gain Consultants cc

P.O. Box 5303, Walvis Bay

Cell: 081 1422927

Email: info@greegain.com.na

EAP: Mr. Joseph Kondja Amushila

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List of acronyms

EAP: Environmental Assessment Policy

EIA: Environmental Impact Assessments

EMA: Environmental Management Act

EMP: Environmental Management Plan

I&APs: Interested and Affected Parties

MEFT: Ministry of Environment, Forestry and Tourism

MSDS: Material Safety Data Sheet

MURD: Ministry of Urban and Rural Development

PPE: Personal Protective Equipment

1. Introduction and Background

1.1 Introduction

Katima Mulilo Town Council has donated a 17-hectare plot to the Ministry of Sport, Youth and National Service (now falling under the Ministry of Education, Innovation, Youth, Sport, Arts and Culture as a directorate) for the development of an international sports stadium. The proposed development site is still zoned undetermined and is part of the Remainder of Katima Mulilo Town and Townlands No.1328. In terms of the Local Authorities Act, 1992 (Act No. 23 of 1992), and the Urban and Regional Planning Act, 2018, statutory planning procedures need to be followed to create a dedicated parcel of land for the envisaged sport stadium. The town planning procedures will involve the Subdivision of the Remainder of Katima Mulilo Town and Townlands No.1328 into Portion "A" and the Remainder, as well as the Rezoning of Portion "A" from "Undetermined" to "Government".

The envisaged development will be comprising of stadium facilities, training fields, recreation areas, administrative blocks, and supporting utilities. The aim is to support government efforts in decentralizing sport development, empowering youth, and fostering inclusive socio-economic development in the Zambezi Region. The proposed development will trigger certain activities listed under the Environmental Management Act of 2007 (Schedule 5.1) that may not be undertaken without an Environmental Impact Assessment (EIA) being conducted and Environmental Clearance Certificate (ECC) being obtained.

The Environmental Management Plan (EMP) was prepared as part of the EIA process with the purpose of ensuring that the management actions arising from Environmental Impact Assessment (EIA) processes are clearly defined and implemented through all phases of the project life cycle. It provides a link between the impacts identified in the EIA process and the required environmental management on the ground during the project phases namely, planning and design, construction, operation, and maintenance of the proposed stadium.

The implementation of the EMP is the ultimate responsibility of the proponent. However, all parties that have roles to play in the proposed activities should be made aware of the contents of the EMP, to plan the relevant activities that the project will include accordingly and in an environmentally sound manner. It is important to note that an EMP is a legally binding document and has been drafted in accordance with the Environmental Management Act (No. 7 of 2007) and its Environmental Impact Assessment Regulations (2012). It should be read in conjunction with the Scoping report and contract documentation to ensure the proponent, Proponent and contractor work in an environmentally sensitive manner, thus ensuring that the impacts on the environment and neighboring residents are kept to a minimum.

1.2 Objectives of the EMP

The EMP has the following objectives:

- To provide information on the potential negative impacts associated with the proposed stadium.
- Identify negative environmental impacts associated with the proposed activities on the biophysical and socio-economic of the area.
- Present mitigation measures for the identified negative impacts and enhancement measures for the positive impacts.
- To provide guidelines for the management and monitoring of the identified environmental issues.
- To provide guidelines to the person responsible to follow appropriate contingency plans in the case of various possible impacts.

This plan describes the mitigation and monitoring measures to be implemented during the following phases of these developments:

- Planning and Design the period during which the design is developed/finalized as
 well as the period prior to the drafting of construction tender documents, and when
 preliminary legislative and administrative arrangements, necessary before any detailed
 engineering designs/drawings are carried out.
- Construction the period during which the Proponent, having secured the necessary legislative and administrative arrangements, prepare construction tender documents for the development of services infrastructure as well as any other construction process(s) within the development site.
- Operation and Maintenance the period during which the proposed sport stadium will be fully functional and maintained by the Town Council as deemed necessary.

2. Responsibilities

It is the responsibility of the proponent to ensure the successful implementation of this EMP and any conditions to be imposed by the Ministry of Environment, Forestry and Tourism (MEFT). However, the implementation of this EMP also requires the involvement of various role players, each with specific responsibilities to ensure that the project is operated in an environmentally sensible manner.

2.1 The Proponent

Responsibilities

The proponent should appoint an Environmental Control Officer (ECO) who should ensure the implementation of this EMP as follows.

- a) That a copy of this EMP is always kept on site.
- b) The objectives of the EMP are met.
- c) Contractors, subcontractors, and Town Council employees involved in the project are aware of this EMP and provide brief training, where necessary.
- d) That all environmental impacts are managed according to the environmental principles of avoiding, minimizing, mitigating, and rehabilitation as contained in this EMP.
- e) Review of the on-site environmental management and implementation of the EMP by the contractors and sub-contractors.
- f) Conduct compliance monitoring as outlined in section 7 of this EMP.
- g) Handle grievances in the prescribed manners and in consultation with the Project Engineer.
- h) Taking appropriate action if the specifications of the EMP are not adhered to.
- i) Recommending the issuing of fines for transgressions of site rules and penalties for contraventions of the EMP.

2.2 Project Engineer

The PE will also do contract administration and supervision for the construction phase. In supervision of the work of contractors and sub-contractors, the PE shall ensure that.

- Input from the EIA study, including the input from the public consultation are incorporated in the final design and considered during the construction phase.
- Management and facilitation of communication between the Proponent, the Contractor.
- Handle grievances in the prescribed manners and in consultation with the ECO.
- Above all, consider all other mitigating measures outlined in Table 5 of the Scoping report and this EMP.

2.3 Contractor and sub-contractors

It is expected that various contractors and subcontractors will be appointed at various times and for various tasks throughout the life cycle of this project, especially during the construction and maintenance phase. All appointed contractors shall ensure compliance with the EMP and its conditions. The proponent must ensure that a copy of the EMP is given to all contractors before the commencement of any work on the project.

The contractor upon receiving this EMP should ensure.

- To undertake their activities in an environmentally sensitive manner and within the context of this EMP
- To undertake good housekeeping practices during the duration of the activities
- To ensure that adequate environmental awareness training takes place in the language of the employees.
- Perform their duties in line with the appropriate legislation as outlined in Section 3
- Conduct environmental clean-ups and take corrective measures in cases of accidents, i.e. concrete or oil spills.
- Keep records of all incidents and report such incidents to the ECO or to the PE
- Keep a copy of complaints received from the community and attend to such complaints as a matter of urgency with support of the PE.

3. Legal framework

The proponent must ensure compliance with that all project activities complies the following legislations.

LEGISLATION	PROVISION
Constitution of the Republic of Namibia (1990)	The articles 91(c) and 95 (i) commits the state to actively promote and sustain environmental welfare of the nation by formulating and institutionalizing policies to accomplish the sustainable objectives which include: - Guarding against overutilization of biological natural resources, - Limiting over-exploitation of non-renewable resources, - Ensuring ecosystem functionality, - Maintain biological diversity.
Environmental Management Act No. 07 of 2007 Water Resources Management Act 2004	The purpose of this Act is to promote the sustainable management of the environment and the use of natural resources by establishing principles for decision-making on matters affecting the environment; to provide for a process of assessment and control of projects which may have significant effects on the environment; and to provide for incidental matters. The Act gives legislative effect to the Environmental Impact Assessment Policy. Moreover, the act also provides procedure for adequate public participation during the environmental assessment process for the interested and affected parties to voice and register their opinions and concern about the proposed project. The Water Resources Management Act (No 11 of 2013) stipulates conditions that ensure effluent that is produced to be of a certain standard. There should also be controls on the disposal of sewage, the purification of effluent, measures
	should be taken to ensure the prevention of surface and groundwater pollution and water resources should be used in a sustainable manner.
Pollution Control and Waste Management Bill	This Bill serves to regulate and prevent the discharge of pollutants to air and water as well as providing for general waste management. This Bill will license discharge into watercourses and emissions into the air.
Labour Act (No 11 of 2007)	135 (f): "the steps to be taken by the owners of premises used or intended for use as factories or places where machinery is used, or by occupiers of such premises or by users of machinery in connection with the structure of such buildings of otherwise in order to prevent or extinguish fires, and to ensure the safety in the event of fire, of persons in such building;" (Ministry of Labour and Employment Creation)
Noise Control Regulations (Labour Act)	It is essential to ensure that before any development project is approved and undertaken, an assessment or evaluation of expected noise level is done.

Town and Regional Planners Act, 1996 (Act No. 9 of 1996)	This Act establishes the Namibian Council for Town and Regional Planners, defines functions, and powers of the Council and provides for the registration of town and regional planners and the supervision over their conduct. The Minister may, on recommendation of the Council prescribe the kinds of work of a town and regional planning nature which shall be reserved for town and regional planners. The Act also defines improper conduct and defines disciplinary powers of the Council. Furthermore, the Act provides for the establishment of national, regional, and urban structure plans, and the development of zoning schemes. It also deals with a variety of related land use control issues such as the subdivision and consolidation of land and the establishment and extension or urban areas.
Land Survey Act 33 of 1993	To regulate the survey of land; and to provide for matters incidental thereto.
Townships and Division of Land Ordinance 11 of 1963, as amended	The objective of this Ordinance is to consolidate and amend the laws relating to the establishment of townships and to provide for the regulation and control of the development and subdivision of land and for matters incidental thereto.
Local Authorities Act (No. 23 of 1992)	The purpose of the Local Authorities Act is to provide for the determination, for purposes of local government, of local authority councils; the establishment of such local authority councils; and to define the powers, duties, and functions of local authority councils; and to provide for incidental matters.
Soil Conservation Act 76 of 1969	The Soil Conservation Act stipulates that the combating and preventing of soil erosion should take place; the soil should also be conserved, protected, and improved, vegetation and water sources and resources should also be preserved and maintained. When proper mitigation measures are followed along the construction and implementation phase of the project, the natural characteristic of the property is expected to have a moderate to low impact on the environment.

4. PROPOSED MITIGATION MEASURES

Table 1: Potential impacts and mitigation measures during the planning and design phase

Environmental Impacts	Mitigation Measures	Roles and Responsibilities	
		Implementation	Monitoring
Legal compliance	 Obtain ECC from MEFT prior to the development. Appoint an ECO to oversee the implementation of the EMP. Section 3, Applicable Legislations is bidding 	OTC	
Biodiversity Management	The following measures should be adhered to. The clearance of site vegetation is inevitable; however, certain large trees should be spared. Provision for more vegetation around the site. Provision should be made for storm water management on the created road.	PE	ОТС
Provision for Traffic management	 Ensure that provision is made for the following. Pedestrian walkway and crossing. Speed culming measures. Crossing for cyclist and disabled Sufficient public parking space 	PE	OTC
Design Concept	 The design should be universal design (Accommodate people of all categories including people living with disabilities) There must be provision for emergency exits. The ablution facility should be connected to the Municipal sewerage system. Suggestion was made for the construction of a Pond in the nearby catchment area to harvest surface runoff for irrigation use. 	0.	TC

Table 2:Potential impacts and Mitigation measures during construction phase

Environmental Impacts	Mitigation Measures	Roles and Responsibilities	
		Implementation	Monitoring
Impact on Biodiversity (flora and fauna)	 Vegetation clearance should be minimized (Only vegetation directly affected must be cleared). Avoid damaging existing tree roots or branches. No animal including small mammals i.e., ground-burrowing squirrel etc. be killed on purpose. 	Contractor	ECO
Stormwater management	 Avoid working in waterways. No diversion or blockage is allowed. Control soil erosion by providing erosion works or sieves. Remove all sand or contaminants in the drainage system. Contaminated soil should be removed. 		ECO
Visual intrusion	 The site must be kept clear of building rubble and other waste. All material must be stored away from the site or in a temporary storeroom. The construction site must be condoned off during the entire construction period. 	Contractor	ECO
Provision for Traffic management	 Make provisions for traffic regulatory signs at street intersections. Insert speed calming measures at construction site. Make use of flagmen to regulate traffic, in case of heavy traffic 	Contractor	ECO
Water and Energy demand Management	 Commit to minimizing the use of water during construction phase. Prevent contamination of surface water runoffs (Cement works should be done far away from waterways) Make provision for renewable energy solar lights/solar panel. 	Contractor	ECO
Impact of Construction camps	 Construction camps should be placed at sites approved by the Town Council (Health Department). Such sites must be far from residential areas. Construction camps should be provided with temporary ablution facilities connected to septic tanks or sewage systems. 	Contractor	ECO

	 Maintenance workshops and refueling points should have impervious surfaces 		
Waste Management	 The site should be always kept tidy. No waste may be buried or burned on site or anywhere else. All domestic and general construction waste produced daily should be cleaned and contained daily. Separate waste containers/bins for hazardous and domestic/general waste must be provided onsite. Provide refuse bins and ensure regular waste collection (weekly) 	Contractor	ECO
Impact on Soil	 Gravel sand to be used for construction must be from approved burrow pits or authorized suppliers. Do not park vehicle or implement with leaks for too long at the site. All vehicles must be serviced offsite. Contaminated soil must be cleaned up. Spoil heaps should be flattened to the similar adjacent ground, to prevent soil erosion, thus encouraging natural vegetation. All surfaces hardened due to construction must be ripped and material imported thereon must be removed 	Contractor	ECO
Public safety risks	 The site must be condoned off and be out of bound for animal and people. Provide signature at the construction site. All open trenches must be covered or barricaded or marked 	Contractor	ECO
Occupational Health and Safety	 All employees must be provided with Personal Protective Equipment (PPE) Employees must be given training in line with their job. All chemicals should be handled as per the Material Safety Data Sheets (MSDS) 	Contractor	ECO
Employment creation	Employ as many local people as possible	Contractor	ECO
Economic prosperity	 Local contractors must be given a priority. Materials should be sourced from local suppliers on the first attempt. Local vendors should be given permission to trade at the construction site 	E	00

Table 3: Mitigation measures during Operation phase

Environmental	Mitigation Measures	Roles and Responsibilities	
Issue/Impacts		Implementation	
Biodiversity management	 Plant and care for local vegetation as far as possible Use organic and biological methods to treat plant pests and diseases. Garden waste can be composted into organic fertilizer 	ECO	
Soil conservation	 Preference should be given to organic fertilizers. Prevent soil erosion by erecting erosion works. Only use environmentally friendly dicer/paints and dyers. Contaminated soil should be contained, removed, and disposed of as hazardous waste 	ECO	
Pollution of groundwater	 No direct discharge of pollution (wastewater or solid waste) into the watercourse Use environmentally friendly products i.e. paints, deicers etc. Clean-up all leakages, spillages Do not discharge waste directly in the soil 	ECO	
Impact of surface drainage	Provide routine maintenance to drainage channels	ECO	
Impact on water usage	 Enforce water conservation measures during maintenance works. Plant indigenous vegetation which uses less water 	ECO	
Impact to the soil	 Use environmentally friendly cleaning products. Avoid, prevent any case of soil erosion by ensuring proper stormwater management. 	ECO	

Aesthetic view of the area	 The site must be clear of litter. All waste must be removed and disposed of to the landfill site. Ensure proper landscaping if the site to enhance the aesthetic view. Provide routine maintenance to the road infrastructures, signatures markings etc. 	ECO
Traffic impacts	 Ensure road signs and markings. Provide and maintain pedestrian crossing Provide suffice parking zone. Provide traffic patrol during sport events 	ECO
Waste generation	 Provide the street with sufficient liter bins and skips. Ensure regular picking up and street sweeping. Promote recycling and reuse of waste. i.e. Composting garden waste as fertilizer 	ECO
Public health and safety	 In order to promote public health and safety, the following measure should be implemented. There must be designated smoking areas indicated by means of signage. There must be Security services 24/7 Incase of public pool, there must be a lifeguard during the operation hours. Emergency contact numbers should be displayed at the stadium There must be fire fighting equipment i.e. hydrant, fire horse pipe accessible to the security personnel. All equipment should have instructions to users i.e. age or weight limits. All broken or non-function play equipment that may pose threat to public health should be secured or remove from the premises 	ECO
Provision of public area for all	The sport stadium will provide recreation benefits to urban residents.	ECO

Crime relates issues	 There must always be a presence of Security Guard. This can be increased depending on the magnitude of the event hosted at the stadium. There must be Security lights, preferably Solar light to reduce energy consumption. The use of CCTV cameras can also be considered. Involve the community, i.e. local neighborhood watch groups in the management of the site. 	OTC
	Positive Impacts and Enhancement Measures	
Promote Social cohesion	 Provide clear rules and appropriate management actions. Stadium fees should be appropriately determined and gazetted. Appoint a professional and experienced team to manage the stadium. Allow the hosting of local community events. 	ECO
Support physical Health	 The sport facilities should be able to accommodate all community members with different needs, i.e. women, kids, people with disabilities. Provide preventative maintenance to the stadium infrastructure and equipment on an annual basis. Provide incentives for local sport groups to encourage participation sport activities i.e. organize/support local sport tournaments, subsidized rental fees to local groups. 	ECO
Foster income opportunity	 Local traders/vendors should be given preference to market their products at sport events. Buy from local suppliers and give preference to local contractors to provide maintenance works i.e. gardening on the stadium. 	ECO

5. MONITORING

To ensure continual improvement in environmental performance and reduce adversity of potential identified negative impacts, it is advisable to keep monitoring the identified environmental receptors during all project phases.

6.1 Monitoring during construction phase

Monitoring of all activities during the construction period will be under the responsibility of the Contractor, whose environmental performance will be controlled by the ECO at the construction site.

Element	Type of monitoring	Frequency of monitoring	Purpose of monitoring
Dust	Visual monitoring	During periodic site visits	To ensure adherence to environmental protection requirements
Wastewater flows generated at the construction sites	Visual monitoring	During monthly site visits	To ensure adherence to environmental protection requirements
Waste generation	Visual monitoring	Weekly	Keep the area clean and prevent pollution
Use of dangerous materials (paints with heavy metals, lead compositions, asbestoscement slabs, pipes, inflammable, toxic substances, etc.)	Visual monitoring and study of documentation	Each month	To ensure adherence to environmental protection requirements
Protective measures at the construction site	Visual monitoring	Each month	To ensure adherence to environmental protection and safety requirements
Earth restoration after excavation works	Visual monitoring	After construction works	To ensure adherence to environmental protection requirements
Noise & vibrations resulting from equipment work	Portative noise metering device	During periodic site visits, daily	To ensure adherence to environmental protection requirements
Traffic operation /movement	Visual monitoring of machinery and trucks carrying construction materials	During periodic site visits	To ensure adherence to environmental protection requirements
Vehicle and pedestrian safety when there are no construction activities	Visual monitoring by supervisor	On daily basis during the construction phase	To ensure adherence to requirements

6.2 Monitoring during operation phase

Monitoring of all activities during the operation and maintenance phase will be under the responsibility of the ECO or the designated Town Council official.

Element	Type of monitoring	Frequency of monitoring	Purpose of monitoring
Water usage	Meter reading	Monthly	Reduce the water demand and using water sparingly
Community perception	Record keeping (no. of complain received)	Regular (meetings)	To ensure the residents are satisfied with the operation, promote community integration
Waste generation	Visual monitoring	Weekly	Keep the area clean and prevent pollution, promote recycling
Use of dangerous materials (paints with heavy metals, lead compositions, asbestoscement slabs, pipes, inflammable, toxic substances, etc.)	Visual monitoring and study of documentation	Occasionally (when construction or maintenance works conducted	To ensure adherence to environmental protection requirements
Noise & vibrations resulting from equipment work	Record keeping	During periodic site visits, daily	To ensure adherence to environmental protection requirements
Traffic operation /movement	Visual monitoring of machinery and trucks carrying construction materials	During periodic site visits	To ensure free flow of traffic and prevent/reduce accidents

6. Conclusion

Although the implementation of this EMP requires a multitude of administration of different role players, the proponent should play a pivotal role in the implementation of this EMP as outlined in the report. The proponent should therefore ensure proper coordination with other stakeholders and may provide training to contractors and sub-contractors on the content of this EMP.

The proponent should also ensure to avail necessary resources and synergies to enable the implementation of this EMP. Upon approval by the authority, the EMP shall be considered a legally binding document and any deviation or transgression from this EMP is punishable by law as per the Environmental Management Act, No. 07 of 2007. A copy of this EMP shall be always kept by the proponent or responsible person.