

Environmental Impact Assessment (EIA) for the proposed township establishment of Katima Mulilo Extension 39 on Portion D of Katima Mulilo Townlands No. 1328, Zambezi Region

ENVIRONMENTAL SCOPING REPORT



Prepared for:

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Namibia

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Zambezi Region
Namibia

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EAP: Green Gain Consultants cc
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List of Abbreviations and Acronyms

BID:	Background Information Document
CDC:	Community Development Committee
EA:	Environmental Assessment
EAP:	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
EIA:	Environmental Impact Assessment
EMA:	Environmental Management Act
EMP	Environmental Management Plan
ESR:	Environmental Scoping Report
GG:	Government Gazette
GN:	Government Notice
I&APs:	Interested and Affected Parties
MEFT:	Ministry of Environment, Forestry and Tourism
PPE:	Personal Protective Equipment

1. Introduction and Background

1.1 Introduction

Mishake & Sons Trading cc, hereinafter referred to as the proponent has been allocated the Portion D of the Remainder of Katima Mulilo Townlands No.1328 for the purpose of township establishment of Katima Mulilo Extension 39. The proposed development will be consisting of mixed used properties such as residential, business, institutional and public open spaces and remainder as streets.

The proposed development will trigger certain activities listed under the Environmental Management Act of 2007 (Schedule 5.1) and its regulations (GN No. 30 of 2012), as activities that may not be undertaken without an Environmental Impact Assessment (EIA) being conducted and Environmental Clearance Certificate (ECC) being obtained.

Green Gain Consultants cc has been appointed to attend to and complete an Environmental Scoping Assessment, prepare an Environmental Management Plan (EMP) and apply for the Environmental Clearance Certificate (ECC) on behalf of the proponent.

1.2 Scope of the study

This scoping study was carried out in accordance with the Environmental Management Act (No. 7 of 2007) and its EIA Regulations (GG No. 4878 GN No. 30). It indicates the description of the environment that may be affected by the activity and the manner in which the activity may affect the environment. Information relating to the receiving environment and its social surroundings has been sourced through the following methods.

- Site visits to collect primary data.
- Gathering existing information relating to similar developments and issues.
- Discussions, meetings, and site visits with authorities.
- Opinions and concerns raised by I&AP's and stakeholders; and
- Ecological/hydrological surveys and qualified opinions.

1.3 Terms of Reference

The Terms of Reference for the proposed project are based on the requirements set out by the Environmental Management Act (No. 7 of 2007) and its EIA Regulations (GN No 30 of 2012). The process covered the following steps, which are reported in this scoping report as follows:

- Provide a detailed description of the proposed activity.
- Identify all policies, legislation and guidelines that are relevant to the proposed development.
- Identify existing environmental (both ecological and socio-economic) conditions of the receiving environment in order to identify potentially sensitive areas.
- Evaluate the need and desirability of the proposed development.
- Notify and consult I&AP's regarding the proposed development and provide them with reasonable opportunity to participate during the process.
- Identify potential environmental impacts the proposed development will have on the natural & urban environment and assess their significance; and
- Outline management and mitigation measures in an EMP to minimize and/or mitigate potentially negative impacts, which cannot be avoided.

This scoping report will be submitted to the Environmental Commissioner, as required by Section 27(3) of the Environment Management Act (No 7 of 2007).

The following is vital as part of the scope of work:

a) **Environmental impacts (biophysical)**

- Impact on flora and fauna
- Impact on surface water and ground water
- Impact on land capability
- Solid waste disposal
- Impact of the proposed and required infrastructure and services.

b) **Socio-economic impacts**

- Impact on traffic
- Impact on local economy
- Impact on existing land uses

1.4 Project team

The project involves the following teams

Developer/Proponent		Mishake & Sons Trading cc Cc/2014/06789 P. O. Box 2525, Ngweze Katima Mulilo Namibia Erf 4232, Butterfly Street, Katima Mulilo
Authority		Katima Mulilo Town Council Tell: +264 Mr. Rafael Liswaniso Chief Executive Officer
TOYA Urban Planning Consultant		Mr. Simon Shinguto Cell: +264 853 099 839 Email: sshinguto@gmail.com
Environmental Practitioner	Assessment	Green Gain Consultants cc Office Erf 2696, Joe Davis, Narraville, Walvis Bay Email: info@greengain.com.na

2. LEGAL FRAMEWORK

2.1 Environmental Management Requirements

The proposed activities will trigger activities listed under the Environmental Management Act No. 7 of 2007 and the EIA Regulations (No. 03 of February 2012) as follows:

5. Land Use and Development Activities

5.1 The rezoning of land from -

- (a) Residential use to industrial or commercial use;

10. Infrastructure

10.1 The construction of-

- (b) Public roads;

0.2 The route determination of roads and design of associated physical infrastructure

- (a) It is a public road;
- (b) The road reserve is wider than 30 meters; or
- (c) The road caters for more than one lane of traffic in both directions.

2.2 Applicable legislations

In addition, the development of this kind is guided by a sound legislative and policy framework. This section provides a review of applicable and relevant Namibian legislation, policies, and guidelines. This review serves to inform the Developer of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled before the proposed project may commence. The findings of the abovementioned review in preparation of this scoping report for the proposed development are summarised below.

Table 1: Namibian Legislation relevant to the project

Legislation/ Policy/ Guideline	Relevant Provisions	Implications for this project
The Constitution of the Republic of Namibia (1990)	The article 95(i) recites: "The State shall actively promote... maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future" Article 91(c) recites: "The functions of the Ombudsman shall be defined and prescribed by an Act of Parliament and shall include the following... the duty to investigate complaints concerning the over-utilization of living natural resources, the	Through the implementation of the EMP, the proponent shall be advocating for sound environmental management as set out in the Constitution.

	irrational exploitation of non-renewable resources, the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia”.	
Environmental Management Act (No. 7 of 2007)	<ul style="list-style-type: none"> Requires that projects with significant environmental impact are subject to an environmental assessment process (Section 27). Details principles which are to guide all EAs. 	The EMA and its regulations should inform and guide this EA process.
Environmental Impact Assessment Regulations GN 28-30 (GG 4878)	<ul style="list-style-type: none"> Details requirements for public consultation within a given environmental assessment process (GN 30 S21). Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15). 	
The Regional Councils Act (No. 22 of 1992)	<ul style="list-style-type: none"> This Act sets out the conditions under which Regional Councils must be elected and administer each delineated region. From a land use and project planning point of view, their duties include, as described in section 28 “to undertake the planning of the development of the region for which it has been established with a view to physical, social and economic characteristics, urbanisation patterns, natural resources, infrastructure, land utilisation pattern and sensitivity of the natural environment” <p>The main objective of this Act is to initiate, supervise, manage and evaluate development.</p>	The Zambezi Regional Council should provide oversight role to the KMTC
Labour Act (No. 11 of 2007)	<ul style="list-style-type: none"> Details various requirements regarding health and safety of labourers Details requirements regarding minimum wage and working conditions. 	The Developer should ensure that all contractors involved during the construction, operation and maintenance of the proposed project comply with the provisions of these legal instruments.
Public Health Act (No. 1 of 2015)	Provide a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters. Part 9 prescribes procedures for Integrated Waste Management, while Part 10 calls for the prevention of creating Health Nuisances.	The developer should ensure compliance with the provisions of these legal instrument. A general obligation for the contractor not to pollute the environment
National Heritage Act (No. 27 of 2004)	Section 48(1) states that “A person may apply to the [National Heritage] Council [NHC] for a permit to carry out works or	Any heritage resources discovered during construction and operations requires a permit from the NHC for relocation.

	activities in relation to a protected place or protected item”.	
Water Resources Management Act (No. 24 of 2004)	<ul style="list-style-type: none"> • Provides provision for the control, conservation and use of water for domestic, agricultural, urban and industrial purposes. • Deals with provision of license/permit that are required for abstracting, using water and discharge of effluent. 	The protection of groundwater resources should be a priority. Obligation not to pollute the environment and soil.
Townships and Division of Land Ordinance (No. 11 of 1963)	Details the functions of the Township Board including what they consider when receiving an application for Township Establishment (S3).	The proposed layout and land uses should be informed by environmental factors such as water supply, soil etc. as laid out in Section 3.
Road Ordinance 1972 (No. 17 of 1972)	<ul style="list-style-type: none"> • Width of proclaimed roads and road reserve boundaries (S3.1) • Control of traffic on urban trunk and main roads (S27.1) • Rails, tracks, bridges, wires, cables, subways or culverts across or under proclaimed roads (S36.1) • Infringements and obstructions on and interference with proclaimed roads. (S37.1) • Distance from proclaimed roads at which fences are erected (S38) 	<p>The limitations applicable on RA proclaimed roads should inform the proposed layout and zonings where applicable.</p> <p>Access from B1 road should be approved by the Roads Authority</p> <p>The following restrictions must apply;</p> <ul style="list-style-type: none"> • 100m from the main road for main building • 30m from the road for any structure
Pollution Control and Waste Management Bill	<ul style="list-style-type: none"> • To prevent and regulate the discharge of pollutants to the air, water and land; • To furthermore regulate noise, dust and odour pollution; and to establish a system of waste planning and management 	The Developer should ensure compliance with the provisions of these legal instrument.
Soil conservation Act 76 of 1969	<p>The objectives of the Soil Conservation Act 76, 1969 are to make provision for the combating and prevention of soil erosion, and the conservation, protection, and improvement of the soil, the vegetation, and the sources and resources of the water supplies.</p> <p>Part II deals with soil conservation works and it further states that in section 4(1). The Minister may by means of a direct order the owner of land to construct the soil conservation works referred to in such direction either on land belonging to such owner or on land belonging to another person, in such manner and within such period as may be mentioned in such direction, if the Minister is of the opinion that the construction of such soil conservation works is necessary to achieve any object of</p>	Prior to the construction of the below ground pipeline and ground level reservoir, geotechnical investigations should be carried out to determine the engineering properties of the soil(s) and/or rock(s) underlying the sites, including the identification of potential problem soils and the presence of an underground water table.

	<p>this Act in respect of the land belonging to such owner.</p>	
<p>National Labour Act 11 of 2007</p>	<p>The objectives of the National Labour Act are:</p> <ul style="list-style-type: none"> • To establish a comprehensive labour law for all employers and employees; to entrench fundamental labour rights and protections. • Regulate basic terms and conditions of employment. • Ensure the health, safety, and welfare of employees and protect employees from unfair labour practices. • To regulate the registration of trade unions and employers' organization and regulate collective labour relations. • To provide systematic prevention and resolution of labour disputes. <p>Some of the notable Sections under this Act are:</p> <p>Health and Safety Procedures Section 17 (1) The employer shall prepare any health and safety procedure referred to in sub-regulation (1) in consultation with the workplace safety committee concerned.</p> <p>Section 22. (1) In the event of an accident or dangerous occurrence in or in connection with a workplace or if an employee dies or suffers a serious injury because of such an accident or dangerous occurrence, the employer shall notify and report such accident to the Chief Inspector of Labour of the area.</p> <p>Notification of Occupational Diseases (OD), Section 23. If a medical practitioner finds that any person is suffering from an occupational disease listed in Annexure A. 2(1), or of any other disease that he or she believes was caused by that person's current or past employment, he or she shall immediately and in the form of Form OD. 1, report this fact to the chief medical officer of occupational health and safety.</p>	<p>The Proponent, Contractor, Sub-contractor shall all be guided by this Act when recruiting or handling employment-related issues.</p> <p>The Contractor must adhere to the minimum workplace safety standards such as all employees must be provided with appropriate Personal Protective Equipment (PPE).</p>

	<ul style="list-style-type: none"> • It shall be an unfair dismissal, or unfair disciplinary action, in terms of section 45 by an employer if such employer terminates the services of, or takes disciplinary action against, such employee if such employee has contracted an occupational disease listed in Annexure A. 2 (1), or any other disease, because of his or her past or present employment with such employer. Section 210, states that an employer shall ensure that an employee wears or uses, to the satisfaction of an inspector, suitable and adequate personal protective equipment. 	
Public Health and Environmental Act of 2015	<p>Section 119 of this Act prohibits the existence of a nuisance on any land owned or occupied by the proponent. The term nuisance is important for this EIA, as it is specified, where relevant in Section 122 as follows:</p> <ol style="list-style-type: none"> a) any dwelling or premises which is or are of such construction as to be injurious or dangerous to health or which is or are liable to favour the spread of any infectious disease. b) any dung pit, slop tank, ash pit, or manure heap so foul or in such a state or so constructed as to be offensive or to be injurious or dangerous to health. c) any area of land kept or permitted to remain in such a state as to be offensive, or liable to cause any infectious, communicable, or preventable disease or injury or danger to health; or d) Any other condition that is offensive, injurious, or dangerous to health. <p>Furthermore, in terms of Section 8 of the Public Health Proclamation 16 of 1936, where a local authority is of the opinion that a nuisance is seriously offensive or a serious menace to the health, it may serve a notice on the owner or occupant of the nuisance to immediately remove the nuisance. Failure to</p>	Nuisance such as dust, noise, bad odours, etc. should be controlled during all project phases.

	abide by this provision is an offense.	
Atmospheric Pollution Prevention Ordinance No. 11 of 1976	<p>This Ordinance generally provides for the prevention of the pollution of the atmosphere and matters incidental thereto. The Ordinance deals with administrative appointments and their functions; the control of noxious or offensive gases; atmospheric pollution by smoke, dust control, motor vehicle emissions; and general provisions.</p> <p>Part IV of this ordinance deals with dust control. The Ordinance is clear in requiring that any person carrying out an industrial process which is liable to cause a nuisance to persons residing in the vicinity or to cause dust pollution to the atmosphere, shall take the prescribed steps or, where no steps have been prescribed, to adopt the best practicable means for preventing such dust from becoming dispersed and causing a nuisance.</p> <p>Of applicability to the envisaged project, is dust generated by vehicles or equipment as well as dust generated during construction. The risk of dust generation is high at the envisaged site. This deals with air pollution as it affects occupational health and safety, and no consideration is given to the natural environment.</p>	Air pollution could occur during the construction phase. It is the responsibility of NamWater to control excessive air pollution and comply with the ordinance.
	To provide for the establishment of a Forestry Council and the appointment of certain officials; to consolidate the laws relating to the management and use of forests and forest produce; to provide for the protection of the environment and the control and management of forest fires; to repeal the Preservation of Bees and Honey Proclamation, 1923 (Proclamation No. 1 of 1923), Preservation of Trees and Forests Ordinance, 1952 (Ordinance No. 37 of 1952) and the Forest Act, 1968 (Act No. 72 of 1968); and to deal with incidental matters.	

3. PROJECT DESCRIPTION

3.1 Locality

The proposed development site, hereto referred to as “Portion D” measures approximately 5.4332 ha. The site is located north of the town CBD adjacent to the old residential area.



Figure 1: Locality of the proposed developments

3.2 Surrounding Land Uses

The proposed development site (Portion D) is one of the demarcated blocks earmarked for township developments. It is located along the road (currently a private road) to Liselo Power Station belonging to NamPower.

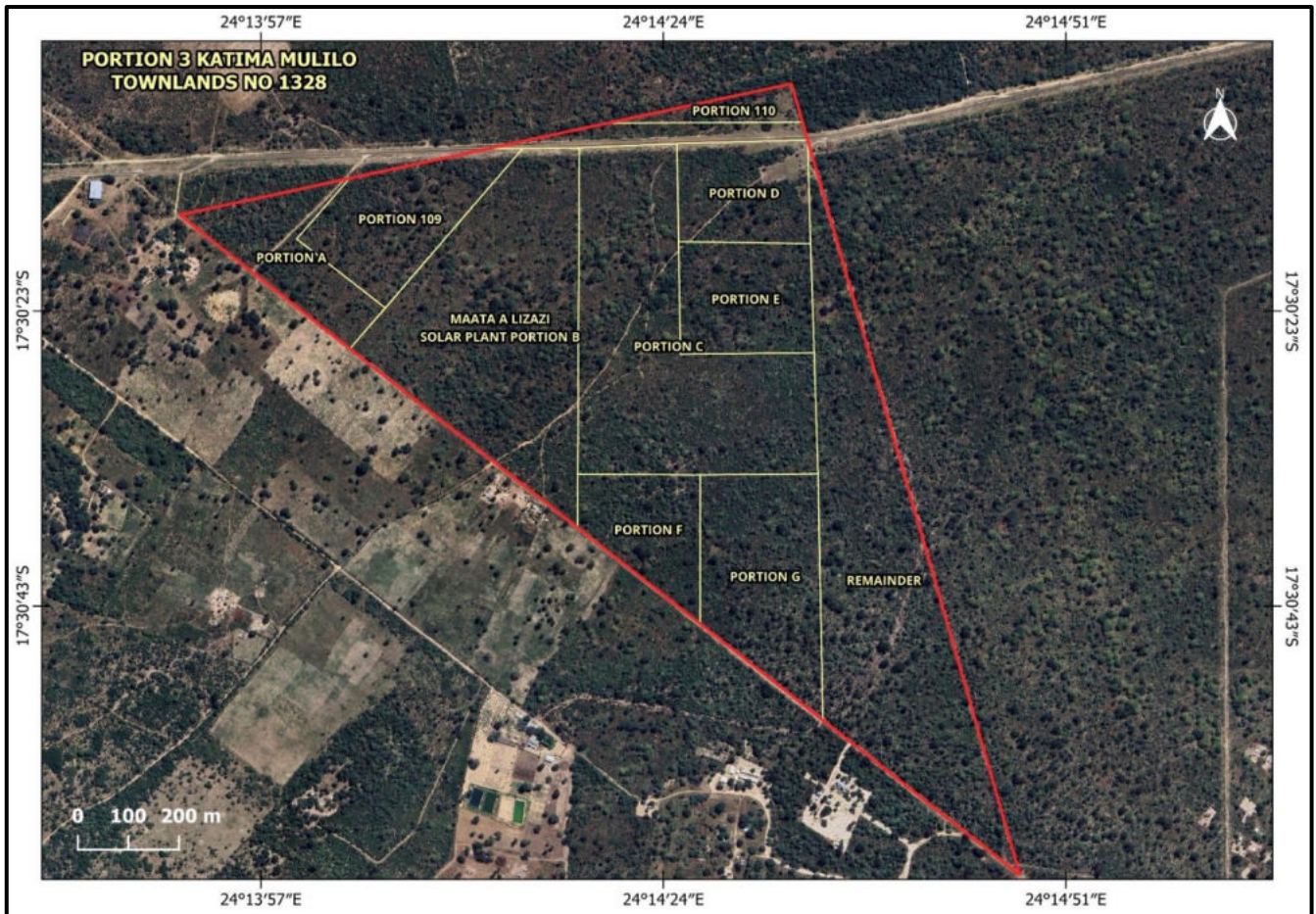


Figure 2: Site surroundings

3.3 Site Description

The site is a vacant land (townland) still in its natural state and is covered by a thick bush consisting of shrubs and dotted with large trees of common specie of the Zambezi woodland most notably the Burkea (*Burkea africana*), Camelthorn (*Acacia erioloba*), Kiaat (*Pterocarpus angolensis*), Leadwood (*Combretum imberbe*), Mopane (*Colophospermum mopane*), Silver-leaf Terminalia (*Terminalia sericea*) and the Zambezi Teak (*Bailiaea plurijuga*). Most of these trees are protected under the Forestry Act 12 of 2001 should be protected from the proposed townships activities.



Figure 3: site overview

3.4 The Proposed Development

3.4.1 Proposed land uses

The proponent has received approval for the alienation of Portion D by way of a private treaty to Mishake & Sons Trading cc. TOYA Urban Planning cc, a registered town planning consultant has been appointed to carry out the town planning process. Similarly, a registered Surveyor (G. Marwa Surveyor) has been appointed to carry out the surveying of the development site.

The proposed development will be consisting of 97 erven, of which 65.4% is reserved for residential purposes, 2.3% for businesses, 1% for Civic, 1.3% for Public Open Spaces and the remaining 30% is for the street network.

Table 2: Proposed land uses

Zoning	Number of Erven	m ²	%	
Residential	94	35514	65.4	
Business	1	1262	2.3	
Civic	1	443	1	
Public Open Space	1	725	1.3	
Remainder Street		16388	30	
Total	97	54332	100	

3.4.2 Proposed subdivision

The proposed township layout is depicted on Figure 4 below. The layout will be submitted to the Ministry of Urban and Rural Development for approval.



Figure 4: Proposed subdivision

3.5 Need and Desirability

The need and desirability of the proposed development is based on the following aspects.

The “**need**” for the project:

- The provision of low to medium income housing has become a national concern. With the growing demand for serviced land due to rapid urbanization, it is of high priority that the available and developable land surrounding the town area is developed to provide land especially for housing and businesses.
- The project is planned at a time and place in a developing sector of the town and can be considered to be a natural opportunity associated with the growth of the town.

The “**desirability**” of the project:

- As the site is located in an “expansion zone” of the settlement
- The approval of this application would not compromise the integrity of the existing environmental management priorities for the area.
- The location factors favour this land-use (associated with the activity applied for) as it is located within a developing orientated area with much potential for growth.
- It is not anticipated that the activity will result in unacceptable opportunity costs as it will be integrated with the existing developments.
- The proposed development will ensure service delivery is provided while creating business opportunities for developers and creation of local employment.

3.6 Project Alternatives

The EIA Regulations stipulate that the Scoping process should investigate alternative development options to any proposed developments/activities. The following alternatives were analyzed.

- **Land use alternatives:** The proposed development site is within the townlands of Katima Mulilo townlands, thus is expected to be developed at any time to accommodate the growth of the town. Moreover, the site is already occupied by developments which existed before the proclamation of the town; hence, the site is considered suitable for the proposed development and no alternative site is required.
- **Do-Nothing** - The do-nothing (“no go”) option would entail not using the site and maintaining the site as is. From certain perspectives this is not a viable option as the site is situated within a proclaimed area planned for urban use and surrounded by either upcoming or already existing residential communities. By not developing the site, the site will be anomalous in the context of the surrounding urban residential land-uses, and some of the direct and indirect socio-economic benefits (i.e., job creation, housing shortages, provision of further housing aimed at the mature living market, etc.) will not be realized.
- **Alternative design and Layouts-** The proposed township layout plan is based on the existing physical features on the site. The proposed design was found to be ideal and not expected to give rise to significant environmental impacts, hence no alternative was deemed necessary.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

This chapter provides an overview of the baseline biophysical and social environmental conditions, with which the proposed development will interact. This information has been sourced from observations made and photographs taken during site visits, the team's experience and existing literature from previous research conducted in the area. This chapter also identifies sensitivities pertaining to key environmental features as well as potential impacts resulting from the proposed project in relation to these sensitivities.

4.1 Socio-economic Environment

4.1.1 About the area

Katima Mulilo is the capital of the Zambezi Region in Namibia, and it is a gateway to Botswana, Zambia, Zimbabwe, and Angola.

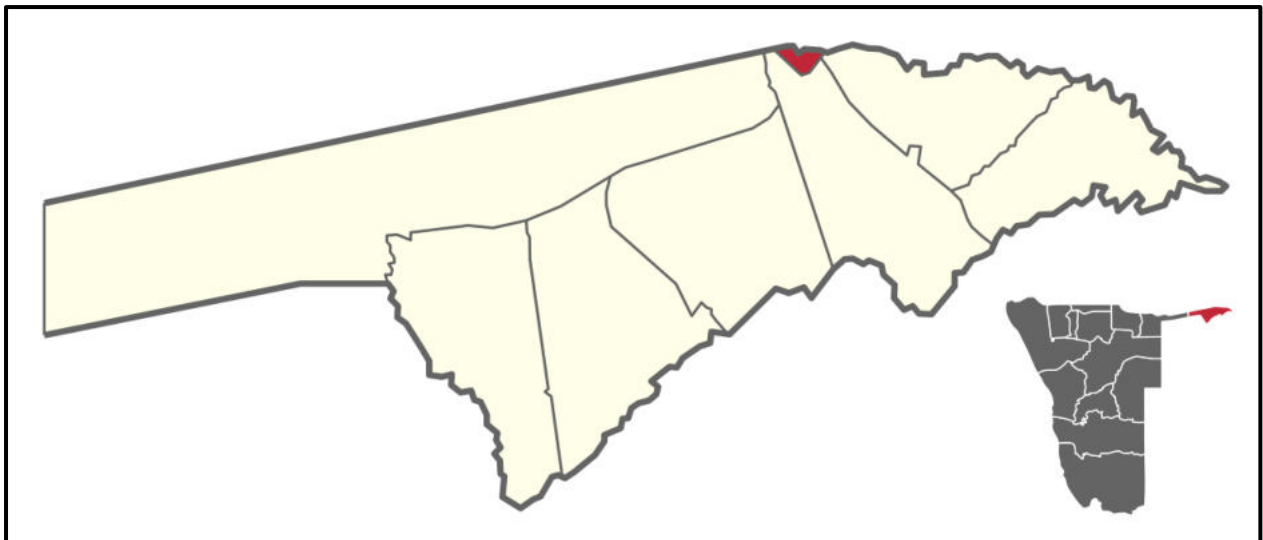


Figure 5: Locality map of Katima Mulilo

It is made up of two electoral constituencies Katima Mulilo Rural and Katima Mulilo Urban and had a population of 28,362 inhabitants in 2010. The town benefited from the military presence in terms of infrastructure and employment, and there are still a number of military bases surrounding the town.

4.1.2 Bulk service supply

The Katima Mulilo town is served with municipal services such as.

- **Water Supply:** The main source of water supply is the Zambezi River, with a system including a water intake pump, a purification plant (NAMWATER) and a reticulated network through the existing roads using PVC pipes, serving the whole urban area. Informal settlements are served through water towers and communal taps with a prepaid system.
- **Road network:** Katima Mulilo is the terminal town of the Trans–Caprivi Highway, and the highway together with its extension to Zambia is called the Trans-Caprivi Corridor. The Trans–Caprivi Highway was opened in 1999, and the bridge to Sesheke, and with it the entire Trans-Caprivi Corridor. Few streets are tarred, and few have streetlights.
- **Sanitation:** There is a sewerage system in place, but it is said to be very old, with more than 50 years of functioning, so it is facing many functional problems (periodical obstructions, overcharges, etc.). There are 20 pump stations and oxidation ponds located in the west part are over their life span. During heavy rains, the sewerage network is seriously affected, so a new system of oxidation ponds is developed in the east side, incorporating the settlements of Choto and Butterfly. The informal settlements are not connected to the existing sewerage network, while the industrial area is served through septic tanks.
- **Communication & Electricity:** The town is fully served by communications and electricity. These include television, radio, newspaper, telephone, and computer. The settlement is connected to the national grid and electricity is supplied by NORED, although some areas within the existing informal settlements are not yet served.
- **Waste Management:** The town is served with one legal waste disposal site located few kilometers from the town. The site accommodates all general waste originating from town except for hazardous waste. However, illegal dumping spots can be found in and around the town.

4.1.3 Socio-economic development

Katima Mulilo is well served by social services such as the government hospital with 200 beds, one health centre and three public clinics and a private clinic. In the education sector, there are six primary schools, three combined schools and three secondary schools, while in the field of further education, the town is seat of the Zambezi Vocational Training Centre, the Caprivi College of Education, as well one branch of the University and Polytechnic of Namibia. The town features an Export Processing Zone and the largest open market in Namibia. There is an important international electricity inter–link facility, the Caprivi Link Inter–Connector; has improved the power supply to the town.

4.2 Biophysical Environment

4.2.1 Climate

The Zambezi has a tropical to a subtropical climate with higher rainfall, less evaporation and a warmer winter than the rest of the country. Rainfall is mostly experienced during the summer, (between November and early April) with the average annual rainfall being more than 600 mm per year. The average annual temperature ranges between 21-22°C. The average maximum temperature for Katima Mulilo below varies between 34 and 36°C with the average minimum temperature between 2 and 4°C.

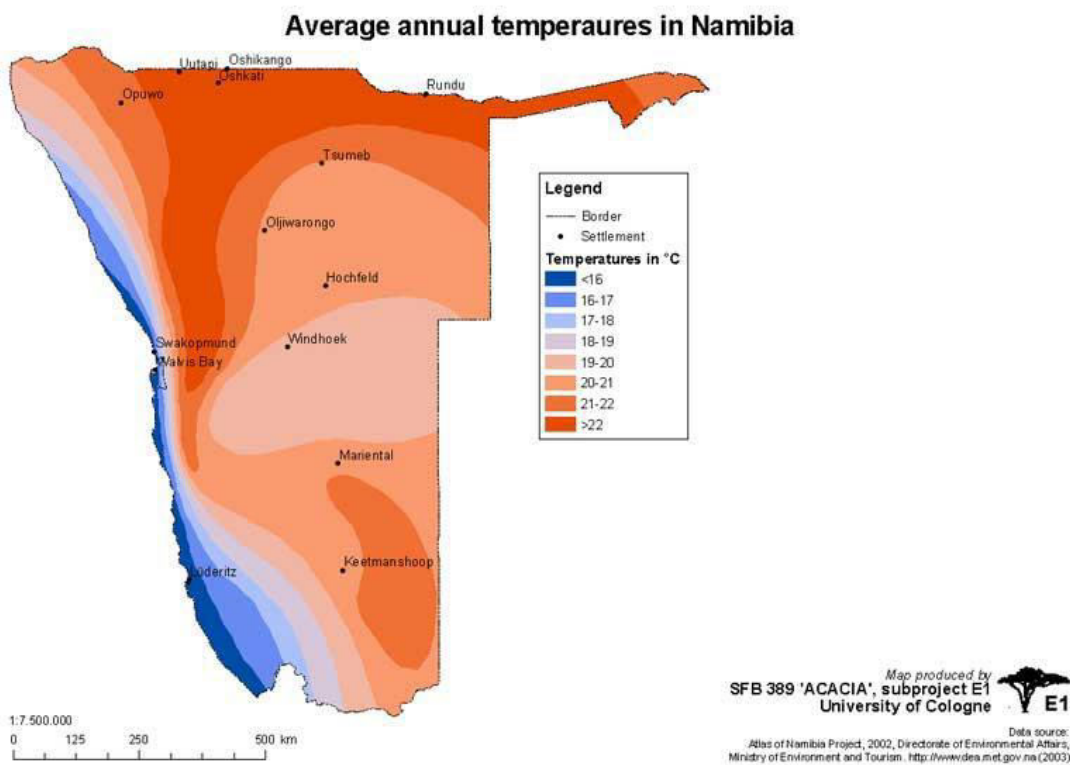


Figure 6: Rainfall map of Namibia

4.2.2 Topography

The town is located at the banks of the Zambezi River which periodically overflows owing to seasonal changes in the water-level of the river and affects the northern areas of the town, where there are several buildings and one residential area (Boma), although it doesn't constitute a major threat to most of the town area. The Katima Mulilo town is between 900 – 1000 meters of altitude, except the most eastern part of the region with 500-1 000 m. above sea level.

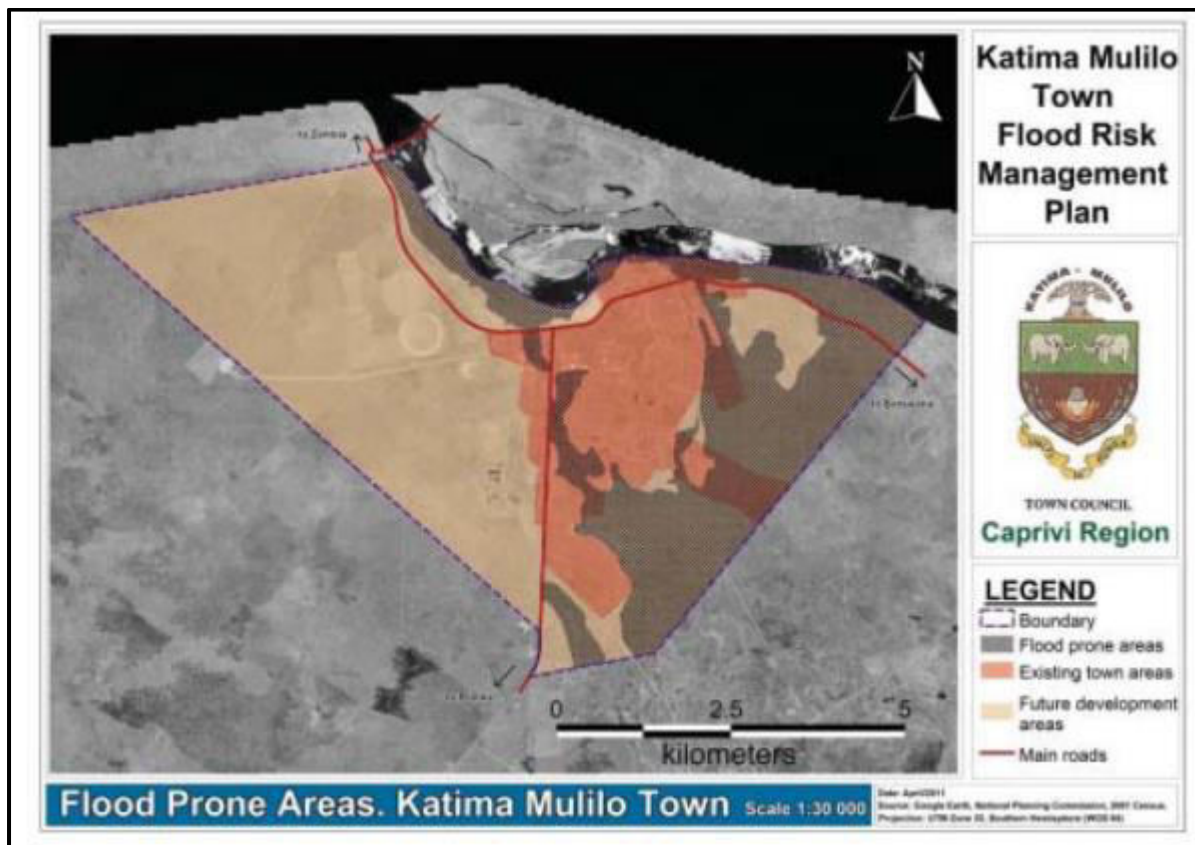


Figure 7: Topographic map of Katima Mulilo town

4.2.3 Soil and geology

The Zambezi Region is relatively flat with the highest areas occurring in the western part of the region. The region is covered in thick deposits of Kalahari sand leaving very little underlying geology exposed (Ministry of Lands and Resettlements, 2015). The soil in the region is characterized by the Kalahari Basin, which is dominated by sand dunes.

5. PUBLIC PARTICIPATION

Public consultation is an important component of an Environmental Assessment (EA) as it provides potential Interested and Affected Parties (I&APs) with a platform whereby they can raise any issues or concerns relevant to the proposed project. This assists the environmental consultant in considering the full spectrum of potential impacts and to what extent further investigations are required.

In addition, the public consultation process also grants I&AP's an opportunity to review and comment on all the documents produced throughout the EA process. This is done in accordance with the Environmental Management Act's EIA Regulations. Communication with stakeholders and I&AP's about the proposed development were facilitated through the following means:

5.1 Notification of key Stakeholders and Interested & Affected Parties

Section 21 of the EIA Regulations details steps to be taken during a given public consultation process and these steps have been used in guiding this process. Communication with I&AP's about the proposed developments was facilitated through the following means:

- Public notices were published in the New Era newspaper for 08 & 18 September 2023 and Confidante newspaper for 08 and 15 September 2023.
- Public Notices were also placed at Town Council Headquarters, Open Market at UNAM Campus entrance and at the development site (See Figure 9).
- The notices provided a brief description of the proposed development, its locality and invites the public to register as I&APs and to the public meeting. (**Appendix C**)
- Identified key stakeholders were invited to submit comments toward the envisaged project.
- Background Information Document (BID) was compiled that contained essential information about the proposed development.

5.2 Public meeting

The public meeting was scheduled for Monday 18 September 2023 at Ngweze Community Hall at 10:00 am. Only a presence of Town Council officials, Erongo Red and few community members who came to the hall at different time slots. The EAP provided a brief introduction of the project and the EIA study to those came to the meeting venue.



Figure 8: Public Notification and Consultation

5.3 Issues raised during consultation.

No objection was received from the registered I&APs or stakeholders. The recommendations received from the Town Council technical staff and relevant stakeholders were incorporated in the Scoping report and in the EMP.

6. IMPACT ASSESSMENT

6.1 Introduction

The EIA Regulations require “a description of the significance of any significant effects, including cumulative effects, which may occur as a result of the undertaking of the activity”. The Table below indicates a summary of identified environmental impacts. These impacts are categorized into the various relevant stages of the life cycle of the proposed development, namely: Planning phase, Construction phase and Operational phase. The environmental assessment section of the Scoping Report and the consequent EMP shall also be compartmentalized into these into these phases.

6.2 Method of Assessment

The potential environmental impacts associated with the proposed will be evaluated according to its nature, extent, duration, intensity, probability and significance of the impacts as follows.

Table 3: Impact Assessment criteria

CRITERIA	DESCRIPTION			
EXTENT	National (4) The whole country	Regional (3) Zambezi region and neighbouring regions	Local (2) Within a radius of 2 km of the proposed site	Site (1) Within the proposed site
DURATION	Permanent (4) Mitigation either by man or natural process will not occur in such a way or in a timeframe that the impact can be considered short-lived	Long-term (3) The impact will last for the entire operational life of the development but will be mitigated by direct human action or by natural processes thereafter.	Medium-term (2) The impact will last for the period of the construction phase, where after it will be entirely negated	Short-term (1) The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase
INTENSITY	Very High (4) Natural, cultural and social functions and processes are altered to an extent that they permanently cease	High (3) Natural, cultural and social functions and processes are altered to an extent that they temporarily cease	Moderate (2) Affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way	Low (1) Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected
PROBABILITY	Definite (4) Impact will certainly occur	Highly Probable (3) Most likely that the impact will occur	Possible (2) The impact may occur	Improbable (1) Likelihood of the impact materialising is very low
SIGNIFICANCE	Significance is an indication of the importance of the impact in terms of both physical extent & time scale, and therefore indicates the level of mitigation required. Significance is given before and after mitigation. The total number of points scored for each impact indicates the level of significance of the impact.			
STATUS OF THE IMPACT	A statement of whether the impact is: <ul style="list-style-type: none"> • Positive (beneficial impact), • Negative (adverse impact), or • Neutral (impact is neither beneficial nor adverse). Indicate in each case who is likely to benefit and who is likely to bear the costs of each impact.			

Table 4: Criteria for significance ratings and associated range of scores

Significance Rate	Description	Score
Low	A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction or operating procedure.	1 - 4
Moderate	An important impact which requires mitigation. Mitigation is possible with additional design and construction inputs.	5 - 8
High	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.	9 – 12
Very High	Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and/or operational phases. Any activity which results in a “very high impact” is likely to be a fatal flaw.	13 - 20

6.3 Assessment of Identified Impacts

All impacts included in the table below fall within the scope of this project and the responsibility of the Developer. Each of the potential impacts are screened and subjected to the criteria stipulated above in **Table 4**. The significance of each potential impact is determined based on the criteria in **Table 5**. It is expected that most of these impacts can be decreased by the proposed migratory measures.

Table 5: Potential Impacts during the development phase (Construction) of the proposed development

ASPECT	POTENTIAL IMPACT	SIGNIFICANCE BEFORE MITIGATION					MITIGATION MEASURE
		Extent	Duration	Intensity	Probability	Significance	
BIOPHYSICAL IMPACTS	The impact on vegetation is unavoidable. The site is made up of thick vegetation which will be destroyed during land servicing.	1	3	2	2	High	-Do not clear all vegetation, leave some (especially large trees) for landscaping and aesthetic purposes. -Vegetation on are zoned Public Open Spaces should be left untouched as far as possible. -Cleared vegetation could be utilized as firewood or combusted into charcoal or biochar for use in agriculture to improve soil quality.
	Alteration of existing visual perspective	1	4	2	2	Moderate	-Large trees should not be removed
	Possible surface water and groundwater pollution	2	3	3	2	Moderate	-No pollutant must be discharged directly into watercourse or underground. -Ensure proper stormwater drainage channels around the site -The sewerage system should be of Municipal standards. The use of septic tanks is not recommended
	Loss of topsoil during construction	1	2	2	2	Low	-Soil conservation measures should be used on-site to help reduce erosion.

							<ul style="list-style-type: none"> -Prevent silting of watercourses by use of silt traps and re-vegetation of disturbed areas -Excavated topsoil must be stockpiled and protected for later use.
	Land disturbances due to construction activities	1	1	1	2	Low	<ul style="list-style-type: none"> -Avoid soil compaction and limit excavation to the area to be developed -All open trenches must be filled, and area must be properly rehabilitated
	Potential damage or destruction to undiscovered heritage or cultural sites in the area	2	3	1	2	Low	<ul style="list-style-type: none"> -There are no major archaeological or Paleontological grounds to suspend the proposed development. In case of any material of archaeological heritage importance observed during construction/operation phase, it must be reported to the National Heritage Council.
	Spillage, stockpiles and other construction related activities	1	1	1	2	Moderate	<ul style="list-style-type: none"> -Concrete mixing should be done on a pre-designed slab underlined by PVC lining or previously disturbed areas -Any spillage (fuel, oil, chemical etc.) must be cleaned immediately -All construction material must be sourced off-site from commercial sources
	Impacts of temporary construction camps	1	1	2	2	Moderate	<ul style="list-style-type: none"> -Construction camps (if allowed) should be properly located away from watercourses -Provide potable ablution facilities during construction -The site used for construction camps should be rehabilitated after construction phase
SOCIO- ECOCNOMIC	Increase in traffic within the area is expected due to construction activities and establishment of a township.	2	1	1	2	Moderate	<ul style="list-style-type: none"> -Identify new access road to avoid congestion. -Flagmen and traffic controls should be appointed to regulate traffic flow of construction vehicles. -Appropriate road signs & markings, sidewalks for pedestrians and taxi ranks should be provided throughout the layout.
	Generation of dust	1	1	1	2	Moderate	<ul style="list-style-type: none"> -Use dust-suppressing agents -Limit Vehicle speed

							-Avoid dust generating activities during strong wind.
Noise created by construction activities, which might be a nuisance to residents and employees.	1	1	1	1	1	Low	-Construction should be limited to normal working days and office hours (08h00-17h00). -All employees must have PPE. -Watering of all construction haulage signage should be place at the entrance of the construction.
Loss of agricultural land for grazing & cultivation to residential/town	2	4	3	3	3	Moderate	-The proposed development site is already a proclaimed townland.
New development will attract new criminal activities in the area	1	1	1	1	1	Low	-All items should be stored away from the sites -Ensure that are properties are secured
Economic development (+ve)	4	2	1	3	3	High	-Contractors should source materials from local supplier to enhance the local economy
Employment of the local community	4	4	2	3	3	Moderate	-Local laborers (especially the ones from the affected & neighboring village/residents) and local contractors (especially SMME's) should be utilized at greater extent. This should also include the youth, women and people with disability.
New development will increase demand water	4	4	4	4	4	High	-Ensure water recycling measures and provided alternative source of water i.e. rainwater harvesting.

Table 6: Potential Impacts during operation phase of the proposed development

ASPECT	POTENTIAL IMPACT	SIGNIFICANCE BEFORE MITIGATION					MITIGATION MEASURE
		Extent	Duration	Intensity	Probability	Significance	
BIOPHYSICAL IMPACTS	Impact on biodiversity (flora and fauna)	1	4	1	2	Moderate	-Plant more trees to enhance biodiversity
	Alteration of existing visual perspective	1	4	1	1	Moderate	-Maintain the existing indigenous trees community and plan more trees in in and around the development to enhance greenery view
	Possible surface water and groundwater pollution from leaking sewage lines or underground storage of dangerous goods.	2	1	2	2	Moderate	-No pollutant must be discharged directly into watercourse or underground. -All houses must be connected to the Municipal sewer system -Sewage lines must be maintained frequently to prevent leakages
	Impact on the natural watercourse and natural flow of storm water and flood water	2	1	1	1	Moderate	-Ensure maintenance of storm water channels. -No waste should be discharged into drainage or natural water flows.
SOCIO-ECOCNOMIC	Increase in traffic within the area and diversion of existing access roads for the community due to the new development	2	4	1	1	Moderate	-Ensure enough access roads and provide regular maintenance -Provide appropriate road signs & markings, sidewalks for pedestrians and taxi ranks should be provided
	Land use conflict between the Town Council and livestock owners over water and grazing area as livestock will be attracted by water and grazing within the new township.	2	4	4	3	Moderate	-All animals currently kept on site must be moved to rural areas and no animal should be kept at any property within this site
	Increase demand of water and electricity	2	4	4	4	Low	-The proposed development is part of the approved town SDF and thus have been included in the demand management plan.
	Loss of access to indigenous trees by the local people	2	4	2	4	Low	-Existing indigenous trees must be conserved in Public Open Space areas

							and communities must be allowed access to these trees even after development.
	The relocation of people will disrupt the social cohesion and connectedness among the community	2	4	3	2	Low	-Existing houses will not be shifted but rather be converted to urban houses. Residents are still connected to each other as neighbors.
	Provision of housing delivery (+ve)	4	4	4	4	High	-Local people must be given the first priority
	Employment of the local community (+ve)					High	Local laborers (especially the ones from the affected & neighboring village/residents) and local contractors (especially SMME's) should be utilized at greater extent. This should also include the youth, women and people with disability.
	-Provision of services next to the people (sewage, communication, etc.)	4	4	4	4	High	-Consider inputs from locals

The intended development is not expected to result in serious negative impacts during operation, hence their significance ranges from Low to moderate.

7. CONCLUSION AND RECOMMENDATIONS

The objective of the Scoping Phase was to define the range of the impact assessment and determine the need to conduct any specialist study. The other objective was to identify the gaps in information, hence determine the need for any specialist studies. It is believed that these objectives have been achieved and adequately documented in this Report. All possible environmental aspects have been adequately assessed and necessary control measures have been formulated to meet statutory requirements.

7.1 Conclusion

The following conclusions can be made.

- The proposed development site is suitable for the envisaged development, and it is compatible with the adjacent land uses (existing residential and the businesses in the vicinity).
- The site is easily accessible and can easily be connected to existing networks (bulk supply services) e.g., water, electricity, etc.
- The development will enable the town to decrease their housing backlog and minimize the formation of illegal settlements on areas not considered for residential planning.
- Since no objection was received during the consultation period, the project is well received by both I&AP's as well as by stakeholders.
- It is also concluded that there are no sensitive cultural or heritage materials that are known to occur on the proposed development site. In case of any such material found at site during construction phase, this should be reported to the National Heritage Council (NHC).

7.2 Recommendations

To the Proponent

- Avoid complete de-bushing of the area by leaving some vegetation, especially large trees to provide surface cover and enhance visual impression.
- Provide sufficient sewerage system and all properties should be connected to this system which should be linked to the existing oxidation ponds. Sewerage system should be constructed to the satisfactory of the KMTC.
- Engage with NORED for the provision of sufficient power supply
- Sufficient fill (gravel) must be provided to ensure stability of the soil, especially on low lying areas to prevent flooding.
- Ensure there is a Storm Water Management Plan for the site to ensure free flow of stormwater from flash flood.
- The project design must incorporate the harvesting and storage of rainwater to reduce the amount of storm water to be attenuated.
- The proponent must implement the proposed mitigation measures outlined in the Environmental Management Plan (EMP).

To the Environmental Commissioner

- Authorize the issuance of an Environmental Clearance Certificate for the proposed Township establishment of Katima Mulilo Extension 39 on Portion D of Katima Mulilo Townlands No. 1328, Zambezi region.

8. REFERENCES

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9. APPENDICES

- 9.1 APPENDIX A: Council Resolution
- 9.2 APPENDIX B: Proof of Consultations
- 9.3 APPENDIX C: EMP