

**ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT FOR
THE PERMANENT CLOSURE AND REZONING OF ERF 171
PAMUE IN OKAKARARA, OTJOZONDJUPA REGION,
NAMIBIA**

ENVIRONMENTAL SCOPING REPORT (ESR)

MARCH 2022

PLAN AFRICA CONSULTING CC

TOWN AND REGIONAL PLANNERS



DOCUMENT DATA SHEET

DOCUMENT VERSION

001

PROJECT NAME	ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT FOR THE PERMANENT CLOSURE AND REZONING OF ERF 171 PAMUE IN OKAKARARA, OTJOZONDJUPA REGION, NAMIBIA
REPORT TITLE	ENVIRONMENTAL SCOPING REPORT: (ESR)
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DATE OF SUBMISSION	14 March 2023

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Acronyms

TERMS	DEFINITION
BID	Background Information Document
EAP	Environmental Assessment Practitioners
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&Aps	Interested and Affected Parties
MEFT: DEAF	Ministry of Environment, Forestry and Tourism's Directorate of Environmental Affairs and Forestry

EXECUTIVE SUMMARY

Mr Ehrnst Katjiku (referred to as the proponent) intends to invest in land and property development in Okakarara. In this regards he intends to develop a mixed complex with commercial and residential units on ERF 171 Pamue, in Okakarara - Otjozondjupa Region. In this respect the proponent has appointed Plan Africa Consulting CC to undertake an Environmental Scoping Assessment (ESA), formulate an Environmental Management Plan (EMP) and apply for an Environmental Clearance Certificate (ECC) to the Ministry of Environment, Forestry and Tourism (MEFT): Directorate of Environmental Affairs and Forestry (DEAF) for the intended development.

In terms of the Environmental Impact Assessment Regulations 2012, the proposed project triggered the application for an environmental clearance certificate because of the following activities:

1. LAND USE AND DEVELOPMENT ACTIVITIES

2. 5.1 The rezoning of land from -

- (a) residential use to industrial or commercial use;
- (b) light industrial use to heavy industrial use;
- (c) agricultural use to industrial use; and
- (d) use for nature conservation or zoned open space to any other land use.

Public Participation Process

Interested and Affected Parties were notified of the project through site notices and newspaper adverts. All relevant information regarding consultation is covered in Chapter 4 of this document and attached in Appendix A.

Environmental Impacts

- Surface and groundwater impact during construction and operation.
- Impacts on vegetation and biodiversity through clearing of land during construction.
- Generation of waste during construction and operation.
- Health and safety impacts during construction and operation.

Social Impacts

The project is generally expected to contribute to improving the livelihoods of the local community of Okakarara through the employment opportunities and increased provision of services and amenities which are not readily available in the area.

Environmental Management Plan (EMP)

An EMP has been developed to mitigate any anticipated possible impacts of the project to the environment.

Conclusion

Based on the Environmental Assessment it is concluded that most of the impacts identified can be addressed through the recommended mitigation and management actions for both the construction and operation phases of the fuel retail facility. Should the recommendations included in this report and the EMP be implemented the significance of the impacts can be reduced to reasonably acceptable standards and duration. All developments could proceed provided that general mitigation measures as set out are implemented as a minimum.

In this respect it is recommended that the proposed land development project receives an Environmental Clearance Certificate, provided that the recommendations described in this report and the EMP are implemented.

1. CHAPTER ONE: BACKGROUND

1.1. INTRODUCTION

Mr Ehrnst Katjiku (referred to as the proponent) intends to invest in land and property development in Okakarara. In this regards he intends to develop a mixed complex with commercial and residential units on ERF 171 Pamue, in Okakarara - Otjozondjupa Region.

In this respect the proponent has appointed Plan Africa Consulting CC to undertake an Environmental Impact Assessment (EIA), formulate an Environmental Management Plan (EMP) and apply for an Environmental Clearance Certificate (ECC) to the Ministry of Environment, Forestry and Tourism (MEFT): Directorate of Environmental Affairs and Forestry (DEAF).

In Namibia the proposed land development activities are listed activities cannot be undertaken without conducting and Environmental Impact Assessment under the 2012 Environmental Impact Assessment (EIA) Regulations of the Environmental Management Act (EMA) No. 7 of 2007. The EIA Study is aimed at assessing the potential environmental and social impacts of the proposed development.

This document therefore forms part of the application to be made to the DEAF's office for an ECC for the proposed development, according to the guidelines and statutes of the Environmental Management Act No.7 of 2007 and the Environmental Impacts Regulations (GN 30 in GG 4878 of 6 February 2012).

1.2. PROJECT LOCATION AND DESCRIPTIONS

The proposed mixed land use development is to be constructed on a Portion of Erf 171 in Okakarara, in a suburb known as Pamue. Pamue is located at the entrance of Okakarara from Otjiwarongo via the C22 National Road. The respective Erf 171 Pamue is located along the said CC2 National Road. ERF 171 is approximately 23 907m² in extent and is zoned 'Public Open Space'. The respective Erf is currently vacant. Figure 1 gives an aerial view of the project site.



1.2.1 INFRASTRUCTURE AND SERVICES

Erf 171 is in close proximity to a developed area that has existing services such as roads, water and electricity. In this regard no major work will be conducted to connect the Erf with bulk services. It is the intention of the proponent to construct a mixed development which will include the construction of residential units, shopping centre, restaurant, offices and retail on Erf 171 Pamue, Okakarara, hence the subdivision and rezoning of the respective erf.

Type of Tenure: Okakarara Town Council sold the Portion to Mr Zaaruka. The land holds potential for a mixed land use development. There are currently no inhabitants on Erf 171 Pamue.

1.2.2 THE PROPOSED DEVELOPMENT

Erf 171 Pamue is to be permanently closed off as 'public open space' and rezoned to business with a bulk of 1.0. Furthermore, it is intended to subdivide the erf into 4 portions and remainder.

The 4 portions will have a variety of developments which includes the construction of a shopping centre, residential units, restaurant, offices and retail, workshop, and a service station. However, a separate ECC application will be made for the construction of a workshop and a Service station.

1.2.3 ACCESSIBILITY & UTILITY SERVICES

The site can be accessed via the existing road that enters Pamue adjacent to the Erf 171. The proposed development will be connected to the existing sewer reticulation system and the existing substation adjacent to the respective erf.

1.3 NEED AND DESIRABILITY

The applicants intend to rezone erf 171 Pamue from Public Open Space to Business and subsequently subdivide the erf into four portions and remainder. These intentions would require the closure of Erf 171 Pamue as public open space.

The purpose of the consent use development is to create a mixed land use development which includes land uses such shopping centre, residential units, restaurant, offices and retail. In order to provide a service to the transient traffic travelling to and from the town as well as the local traffic generated by the Central Business District of the town. In addition, it will provide quick access to essential services such as accommodation and shops.

The proposed land use/uses will create opportunities for employment during construction and permanent employment during the operational period of the proposed mixed land use development.

According to the Namibia 2011 Population and Housing Census, a number of schools, businesses and shopping malls have been developed in and around Okakarara and the region as a whole creating commercial and industrial growth. The town creates very promising business opportunities thanks to its agricultural industry, its location and tourist attraction sites.

The proposed development will contribute to maximizing the value of the land by maximizing the value of the infrastructure. Furthermore, the development aims to enhance existing business opportunities for local entrepreneurs. Increase economic and investment opportunities. Stimulate and diversify economic activities and create sustainable income for the local community.

1.4 OBJECTIVES OF THIS STUDY

This Environmental Scoping Assessment is being undertaken in compliance with the Environmental Management Act No.7 of 2007 and the Environmental Impact Assessments Regulations (GN 30 in GG 4878 of 6 February 2012). It is a prerequisite by the law to have an Environmental Assessment carried out before the implementation of the prescribed projects as elaborated in the Environmental Impact Assessments Regulations (GN 30 in GG 4878 of 6 February 2012).

The main objectives of this study are as follows:

- To identify and provide mitigation measures of the expected impacts of the proposed establishment to protect the environment.
- To brief the project proponent of the legal and policy framework governing the proposed activity.
- To identify the possible changes in bio-diversity index that might occur because of project implementation in the area.
- To reflect on the various public concerns which will inform the proponents and DEAF's decision making.
- To come up with preventive and precautionary measures for the expected physical and biological environmental negative impacts associated with the proposed activities.
- To structure an effective environmental management plan for the proposed activity to minimise and prevent negative impacts and maximise the positive impacts.

1.5 TERMS OF REFERENCE

The Environmental Scoping Assessment conducted by Plan Africa Consulting cc provides a comprehensive evaluation of the proposed project producing both ESA and EMP reports documenting the following:

- A complete description of the existing site proposed for development.
- Significant environmental issues of concern that were based on the baseline data compiled by the ESA Team, which took into consideration social, cultural and heritage information.
- An assessment of the public perception on the proposed development.

- Identification of Policies, Legislation and Regulations relevant to the project.
- Prediction of the likely short, medium, and long-term impact of the development on the environment, including direct, indirect, and cumulative impacts, and their relative importance to the design of the development's facilities.
- Identification of any mitigation actions to be taken to minimize predicted adverse impacts and provide associated costs where applicable and practical.
- Development of an environmental monitoring plan which will ensure that the mitigation measures are adhered to during the implementation phase.
- A conclusion and recommendation for the project proponent on an advisory note.

2. CHAPTER TWO: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1. INTRODUCTION

An important part of the EIA is identifying and reviewing the administrative, policy and legislative situation concerning the proposed activity, to inform the proponent about the requirements to be fulfilled in undertaking the proposed activities. This section looks at the legislative framework within which the proposed development will operate under. The focus is on the compliance with the legislation during the planning, construction and operational phases. All relevant legislation, policies and international statutes applicable to the project are highlighted in Table 1: Relevant legislation, policies and international statutes applicable to the project below as specified in the Environmental Management Act, 2007 (Act No.7 of 2007) and the regulations for Environmental Impact Assessment as set out in the Schedule of Government Notice No. 30 (2012). An explanation is additionally provided regarding how these provisions apply to this project.

Table 1: Relevant legislation, policies, and international statutes applicable to the project

Aspect	Legislation	Relevant Provisions	Relevance to the Project
The Constitution	Namibian Constitution First Amendment Act 34 of 1998	<ul style="list-style-type: none"> • Article 16(1) guarantees all persons the right to property. It therefore provides everyone a right to acquire, own and dispose of property, alone or in association with others and to bequeath such property. • Article 95(l) “The State shall actively promote and maintain the welfare of the people by adopting policies that are aimed at maintaining ecosystems, essential ecological processes, and the biological diversity of Namibia. It further promotes the sustainable utilisation of living natural resources basis for the benefit of all Namibians, both present and future.” 	<ul style="list-style-type: none"> • The project will enable the full execution of right to practice any profession, or carry on any occupation, trade, or business by availing necessary provisions such as practising any profession, or carry on any occupation, trade or business in the country. • Through implementation of the environmental management plan, the proponent will ensure conformity to the constitution in terms of environmental management and sustainability.
National Development Plans		Namibia’s overall Development ambitions are articulated in the National Vision 2030. At the operational level, five-yearly national development plans (NDP’s) are prepared in extensive consultations led by the National Planning Commission in the Office of the President. The	The proposed project will propel NDP4 targets in logistics, tourism, and commodities market. Adding on, this will create employment which will work towards the NDP and Vision 2030.

Aspect	Legislation	Relevant Provisions	Relevance to the Project
		Government has so far launched a 4th NDP focusing on high and sustained economic growth, increased income equality Employment creation.	
Archaeology	National Heritage Act 27 of 2004	Section 48(1) states that “A person may apply to the Namibian Heritage Council (NHC) for a permit to carry out works or activities in relation to a protected place or protected object”	Any heritage resources discovered would require a permit from the NHC for relocation. The site is however already disturbed and semi-developed.
	National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979	<ul style="list-style-type: none"> • “No person shall destroy, damage, excavate, alter, remove from its original site or export from Namibia: • Meteorites, fossils, petroglyphs, ornamental infrastructure graves, caves, rock shelters, middens, shells that came into existence before the year 1900 AD; or any other archaeological or palaeontological finds 	The proposed site of development is not within any known monument sites, both movable and immovable as specified in the Act, however in finding any materials specified in the Act, contractors on site will take the required route and notify the relevant commission.
Environmental	Environmental Management Act 7 of 2007	<ul style="list-style-type: none"> • Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). • Requires for adequate public participation during the environmental assessment process for interested and 	This Act and its regulations should inform and guide this EIA process.

Aspect	Legislation	Relevant Provisions	Relevance to the Project
		<p>affected parties to voice their opinions about a project (Section 2(b-c)).</p> <ul style="list-style-type: none"> • According to Section 5(4) a person may not discard waste as defined in Section 5(1)(b) in any way other than at a disposal site declared by the Minister of Environment and Tourism or in a manner prescribed by the Minister. • Details principles which are to guide all EIAs 	
	EIA Regulations GN 57/2007 (GG 3812)	<ul style="list-style-type: none"> • Details requirements for public consultation within a given environmental assessment process (GN No 30 S21). • Details the requirements for what should be included in a Scoping Report (GN No 30 S8) and EIA report (GN No 30 S15). 	This Act and its regulations should inform and guide this EIA process.
	Pollution and Waste Management Bill (draft)	<ul style="list-style-type: none"> • This bill defines pollution and the different types of pollution. It also points out how the Government intends to regulate the different types of pollution to maintain a clean and safe environment. 	The project should be executed in harmony with the requirements of the act to reduce negative impacts on the

Aspect	Legislation	Relevant Provisions	Relevance to the Project
		<ul style="list-style-type: none"> The bill also describes how waste should be managed to reduce environmental pollution. Failure to comply with the requirements considered an offence and is punishable. 	surrounding environs from waste during construction or operation.
	Soil Conservation Act 76 of 1969	This act makes provision for combating and for the prevention of soil erosion, it promotes the conservation, protection and improvement of the soil, vegetation, sources and resources of the Republic of Namibia.	The Project impact on soil will rather be localised, however the Act should provide for guidelines of operation during construction to prevent soil erosion and contamination during operation.
	National Biodiversity Strategy and Action Plan (NBSAP2)	The action plan was operationalised in a bid to make aware the critical importance of biodiversity conservation in Namibia, putting together management of matters to do with ecosystems protection, biosafety, and biosystematics protection on both terrestrial and aquatic systems.	Forming part of the EIA of and EMP for this Project, the proponent will consider all associated impacts, both acute and long term, and will propose methods and ways to sustain the local biodiversity.
Forestry	Forest Act 12 of 2001	<ul style="list-style-type: none"> Tree species and any vegetation within 100m from a watercourse may not be removed without a permit (S22(1)) Provision for the protection of various plant species. 	The clearing of vegetation is prohibited (subject to a permit) 100m either side of a river. Certain tree species occurring in the area are protected under this Act.

Aspect	Legislation	Relevant Provisions	Relevance to the Project
			<p>Permits must be obtained from MAWF in accordance with the Act.</p> <p>However, on site there are no trees that require clearing permit.</p>
Water	Water Act 54 of 1956	<ul style="list-style-type: none"> • The Water Resources Management Act 24 of 2004 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force: • A permit application in terms of Sections 21(1) and 21(2) of the Water Act is required for the disposal of industrial or domestic wastewater and effluent. • Prohibits the pollution of underground and surface water bodies (S23(1)). • Liability of clean-up costs after closure/ abandonment of an activity (S23(2)). • Protection from surface and underground water pollution 	The protection of ground and surface water resources should guide development's layout plans.
Health and Safety	Labour Act (No 11 of 2007) in conjunction	<ul style="list-style-type: none"> • 135 (f): "the steps to be taken by the owners of premises used or intended for use as factories or places 	The proponent will employ several people and shall ensure securing a safe

Aspect	Legislation	Relevant Provisions	Relevance to the Project
	with Regulation 156, 'Regulations Relating to the Health and Safety of Employees at work'.	<p>where machinery is used, or by occupiers of such premises or by users of machinery about the structure of such buildings of otherwise to prevent or extinguish fires, and to ensure the safety in the event of fire, of persons in such building;" (Ministry of Labour and Social Welfare).</p> <ul style="list-style-type: none"> • This act emphasizes and regulates basic terms and conditions of employment, it guarantees prospective health, safety and welfare of employees and protects employees from unfair labour practices. 	environment and preserving the health and welfare of employees at work. This will include applying appropriate hazard management plans and enforcing Occupational Health and Safety (OHS) enforcement by contractors.
	Public Health and Environmental Act, 2015	<ul style="list-style-type: none"> • Under this act, in section 119: "No person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health." 	The project will ensure compliance to the terms of the Act through ensuring standard ablution, clean water supply and decongesting informal settlements.
Services and Infrastructure	Road Ordinance 1972 (Ordinance 17 Of 1972)	<ul style="list-style-type: none"> • Width of proclaimed roads and road reserve boundaries (S3.1) • Control of traffic during construction activities on trunk and main roads (S27.1) • Infringements and obstructions on and interference with proclaimed roads. (S37.1) 	Although the project is a major boost for the town, the commodities market and the national highways the proponent needs to ensure that the development do not affect the major roads within their

Aspect	Legislation	Relevant Provisions	Relevance to the Project
		<ul style="list-style-type: none"><li data-bbox="786 292 1536 379">• Distance from proclaimed roads at which fences are erected (S38)	vicinity during construction and operation phases.

3. CHAPTER THREE: RECEIVING ENVIRONMENT

3.1. BIOPHYSICAL CONDITIONS

3.1.1 CLIMATE

Rainfall and Precipitation: Okakarara receives summer rainfall with typical rainfall amounts ranging from 325 – 350mm per year. The broader area (on a regional scale) is characterized by sporadic and erratic rainfall season droughts are considered common (Strohbach, et al.2004)

Temperatures: Daily average temperatures for summer are approximately 32°C (maximum) and 17°C (minimum) (Strohbach, et al.2004). Minimum temperatures during the coldest months range between 4-6°C (Mendelsohn, et al.2009).

Wind speed and Direction: A monitoring station located at the Waterberg Plateau National Park, near Okakarara has been measuring wind data since September 2011. Wind speeds in the area are generally low with average speeds of less than 3 m/s and maximum speeds rarely exceeding 6 m/s. The dominant directions are north-westerly and north-easterly, and these conditions persist for approximately 10 months a year (BIOTA Africa, 2013). The atmospheric dispersion potential at Okakarara is expected to be effective for most hours in each day for all months excluding June and July

3.1.2 TOPOGRAPHY, GEOLOGY AND SOILS

The Otjozondjupa Region forms part of the Kalahari Group Geological Divisions. The Kalahari Sequence forms a blanket of unconsolidated to semi consolidated sand covering most of the area. Specialists divide the Kalahari layers here into three main units. The uppermost consists mostly of unconsolidated windblown sand and sand deposited under fluvial conditions. The middle part is predominantly fluvial sand with minor aeolian deposits. The basal layer is as yet poorly understood and consists of conglomeratic, red clayey sand with carbonate cement. The thickness of the Kalahari layers is lowest (less than 50m) along the Botswana border and increases towards the middle reaches of the Omatako-Omuramba and further to the north-west (Ministry of Agriculture Water and Rural Development, 2011).

3.1.3 HYDROLOGY

In terms of groundwater, the area falls within the Okavango-Epukiro groundwater basin. The hydrogeological Okavango-Epukiro Basin lies at the margin of the much larger Kalahari Basin, which extends far across the Namibian border. The bedrock that underlies this huge sand-filled basin consists of various rock types (Ministry of Agriculture Water and Rural Development, 2011).

Groundwater within the area is hosted in two distinct aquifer systems, Kalahari aquifers and fractured bedrock aquifers. These two aquifer types are treated separately here as they have different characteristics. Kalahari aquifers hold water in intergranular pore spaces, whereas water in fractured aquifers is held in cracks and fractures in otherwise impermeable strata. Kalahari aquifers are common in the north-eastern Otjozondjupa and Kavango regions (Ministry of Agriculture Water and Rural Development, 2011).

3.2 TERRESTRIAL ECOLOGY: FAUNA AND FLORA

The good rainfalls in the Otjozondjupa region result in a rich biodiversity, especially regarding the flora (Ministry of Agriculture Water and Rural Development, 2011). More than 500 different plant species are found within the region. Trees commonly found in the area is Shepherd's Trees (*Boscianal bitrunca*), Burkea (*Burkea Africana*), Black thorn (*Acacia Mellifera*), Camel Thorn (*Acacia erioloba*), and Silver-Leaf Terminalia (*Terminalia sericea*) (Mendelsohn & el Obeid, 2005).

The local occurring fauna that are expected or known to occur at the site includes domestic animals and small ground burrowing animals, reptiles, and local bird's species.

3.2.1 FAUNA & FLORA

The project site is in the heart of a village where domestic animals such as cattle, sheep, goats and donkeys are common not wildlife. The project site environment has undergone massive clearing and compacting activities that have removed habitats for wildlife. This has altered the required natural environment for wildlife and animal habitats.



Figure 1: Current state of the project area

3.3 SOCIO-ECONOMIC STATUS

Okakarara is a town located in the Otjozondjupa Province of Namibia. It is located in the Northern parts of the country and has a total population of approximately 7 000 inhabitants. Okakarara is situated only a few kilometres from the Waterberg National Park which is a very important tourist attraction.

Okakarara was proclaimed in 1992 and is mainly populated by the native Herero people. Agriculture plays a very important role in this town's economy and business sector. Farmers are allowed to showcase their goods at the annual trade fair.

Some constituency inhabitants are temporary employed at various infrastructural developmental projects taking place in the constituency just to list few, road construction, housing construction, conservancies' projects, farmers associations among others. However, the main source of income comes from farming activities, education and police sector employed significant number of people. The highest main sources of income in the

constituency are farming (33%), wages and cash (27%) and pension (19%) (NSA 2012). Unemployment in the constituency was at 47% in 2011 compared to 52% in 2001.

The constituency is mainly dominated by livestock farming particularly cattle production by both commercial and communal farmers while small stock production (i.e. goats and sheep), as well as pigs and poultry production also takes place on a significant scale. In terms of crop production, maize production dominates this sub-sector, while increasingly horticultural production is gaining importance in the region.

Besides agriculture, various tourism routes transit the constituency, i.e. from Gobabis to Etosha National Park via the constituency, or from North-western tourism frontier, Kavango and Caprivi. Also, current road construction linking trans-Caprivi and Kalahari highways offers opportunities for increased tourist traffic for the conservancies in the east of the constituency. There are four communal conservancies in Okakarara constituency namely, Okamatapati, Otjituoo, African Wild Dog and Ozonahi. These communal conservancies in the constituency cover a geographical area of 16,257km² representing about 12,800 inhabitants. The main income sources for the communal conservancies are entrance fees for tourists, devil's claw harvesting and sales, craft shop (local sales of crafts produced by locals), film production royalties, campsite for villages (mostly benefiting surrounding villagers).

Some smaller entrepreneurs earn their living through the selling of cakes, kapana meats, perfumes, tailoring, salon, tire repairs, tent and bag making, dry cleaning- laundry and hair salons just to mention a few.

Okakarara constituency being predominantly into agricultural constituency, the constituency is faced with numerous challenges in this sector and development. The town itself is growing fast and expanding and more services such as fuel stations will create jobs and much needed fuel for residents in Pamue area.

4. CHAPTER FOUR: PUBLIC CONSULTATION

Public Consultation forms an important component of the Environmental Assessment process. It is regulated for in the EIA Regulations (2012), Section 21 of the Regulations details steps to be taken during a given public consultation process and these have been used in guiding the EIA process.

Formal public involvement has taken place via newspaper adverts, site notice, registering I&APs and door to door consultation. The public consultation process has been guided by the requirements of Environmental Management Act (EMA) No. 7 of 2007 and the process has been conducted in terms of regulation 7(1) as well as in terms of the EMA Regulations of GN 30 of 6 February 2012.

4.1. PUBLIC CONSULTATION ACTIVITIES

The following tasks have been undertaken during public consultation process which started on the 23rd September 2022.

Identification of Interested and Affected Parties (I&APs)

After the scoping process, the EIA team identified I&APs and key stakeholders of the proposed project. The public participation activities to be undertaken for this EIA process were incorporated into the overall approach of the EIA background information. Among key stakeholders identified were Okakarara Town council and neighbours. Other I&APs could register to the EIA team and a special database created capturing all their names and correspondence details.

Distribution of BID

A Background Information Document (BID) was distributed on request by I&A Parties and it was distributed to key stakeholders identified during the scoping process. The BID provided a description summary of the proposed project, the project proponent and the whole procedure of the EIA to be followed.

Public Announcement.

A public announcement was done to make sure the public is aware of proposed development by Plan Africa Consulting cc. The EIA study was announced publicly through the following means presented in Table 2.

Table 2: Details on the modes employed for public notifications of the EIA study

Method / Mode	Area of Distribution	Language	Placement Date	
Republikein	Country Wide	English	23	September
			2022	
Namibian Sun	Country Wide	English	23	September
			2022	
Site notices	Okakarara Town Council	English	23	September
	Project Site		2022	

4.2 KEY STAKEHOLDER AND PUBLIC ENGAGEMENT (CONSULTATION) MEETING

The EIA team identified and consulted the following I&APs & key stakeholders for the proposed project:

- Community members,
- Okakarara Town Council.

Other I&APs were allowed to register to the EIA team and compiled a database containing their names and correspondence details. The registration was accomplished over a period of 14 days. The public did not show up for the arranged consultation meeting, therefore, a door-to-door consultation was done.

5. CHAPTER FIVE: ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

5.1. OVERVIEW

The chapter describes the potential environmental and socio-economic impacts that may occur due to the proposed activities being undertaken as part of the proposed fuel retail facility. The various impacts are discussed throughout the project cycle (during construction, operation and decommissioning). This chapter aims to inform the decision to be taken by the Ministry of Environment and Tourism in respect of the ECC.

5.2. IMPACT ASSESSMENT METHODOLOGY

An impact assessment matrix was used to assess all possible impacts of the project on the environment. In line with Namibia's Environmental Management Act No. 7 of 2007 and the Environmental Impacts Regulations (GN 30 in GG 4878 of 6 February 2012) with the direction on impacts analysis the following impact assessment criteria was identified by the team and deemed suitable.

Table 6: Impact Screening Criteria

Aspect	Description
Nature	Focuses on the type of effect that the project will have on environmental components. Addresses questions related to "what will be affected and how?"
Extent	Spatial extent of the project and anticipated spatial extent of impacts indicating whether the impact will be within a limited area (on site where construction is to take place); local (limited to within 15km of the area); regional (limited to ~100km radius); national (extending beyond Namibia's borders).
Duration	This looks at the temporal issues pertaining to time frames e.g. whether the impact will be temporary (during construction only), short term (1-5 years), medium term (5-10 years), long term (longer than 10 years, but will cease after operation) or permanent.

Aspect	Description
Intensity	Establishes whether the magnitude of the impact is destructive or innocuous and whether it exceeds set standards, and is described as none (no impact); low (where natural/ social environmental functions and processes are negligibly affected); medium (where the environment continues to function but in a noticeably modified manner); or high (where environmental functions and processes are altered such that they temporarily or permanently cease and/or exceed legal standards/requirements).
Probability	Considers the likelihood of the impact occurring and is described as uncertain, improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of prevention measures).
Significance	Significance is given before and after mitigation. Low if the impact will not have an influence on the decision or require to be significantly accommodated in the project design, Medium if the impact could have an influence on the environment which will require modification of the project design or alternative mitigation (the route can be used, but with deviations or mitigation) High where it could have a “no-go” implication regardless of any possible mitigation (an alternative route should be used).

The application of the above criteria will be used to determine the significance of potential impacts using a combination of duration, extent, and intensity/magnitude, augmented by probability, cumulative effects, and confidence. Significance is described as follows:

Table 7: Impact Rating Criteria

Significance Rating	Criteria
Low	Where the impact will have a negligible influence on the environment and no modifications or mitigations are necessary for the given development

	description. This would be allocated to impacts of any severity/ magnitude, if at a local scale/ extent and of temporary duration/time.
Moderate	Where the impact could have an influence on the environment, which will require modification of the development design and/or alternative mitigation. This would be allocated to impacts of moderate severity/magnitude, locally to regionally, and in the short term.
High	Where the impact could have a significant influence on the environment and, in the event of a negative impact the activity(ies) causing it, should not be permitted (i.e. there could be a 'no-go' implication for the development, regardless of any possible mitigation). This would be allocated to impacts of high magnitude, locally for longer than a month, and/or of high magnitude regionally and beyond.

5.3. IMPACT ASSESSMENT

By subjecting each of the potential impacts to the matrix above, the EIA team established the significance of each impact prior to implementing mitigation measures and then after mitigation measures have been implemented. Some of the mitigation measures are mentioned but detailed descriptions of management actions are contained in the accompanying EMP.

Table 8: Environmental impact assessment matrix

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
TOPOGRAPHY	Landscape Scenery	Visual aesthetic impact	Construction	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Minor
	Clearing of a large portion of land	Visual aesthetic impact	Construction	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Minor
SOIL	Soil	Contamination to soil from waste disposal	Construction	Moderate	Small	Local	Direct	Low <25%	Minor
	Soil	Spillages of fuel, oil and lubricants.	Construction	Short	Small	Local	Direct	Low <25%	Minor
	Soil	Erosion from road opening and trenching	Construction	Moderate	Small	Local	Direct	Low <25%	Minor
LAND CAPABILITY	Terrestrial ecology and aquatic ecosystems	Change in land use	Construction	Permanent	Great	Local	Direct	Low <25%	Moderate
WATER	Surface water quality	Water pollution from oils and lubricants from vehicles and machinery.	Construction	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Moderate

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
	Surface and groundwater	Water pollution from oils and lubricants	Operation	Moderate	Small	Local	Direct	Low <25%	Moderate
	Surface and groundwater	Increase in stormwater runoff, local pollution and river sedimentation	Construction & Operation	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Minor
AIR QUALITY	Noise Pollution	-Noise During Construction and operation	Construction	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Moderate
	Dust Pollution	-Construction dust	Construction	Moderate	Moderate	Local	Direct	High >75%	High
WASTE	Groundwater quality	Hazardous waste such as waste oil and lubricants.	Construction	Short	Small	Local	Direct	Low <25%	Minor
	Topography and Landscape	Visual impacts due to infrastructure and unsustainable handling and disposal of waste.	Construction	Short	Small	Local	Direct	Low <25%	Minor
FAUNA	Aquatic life	Antifouling paints, eutrophication and sedimentation of streams.	Construction,	Moderate	Small	local	Direct	Low <25%	Minor

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
	Terrestrial ecology and biodiversity	Destruction of vertebrate fauna (e.g. road kills; fence and construction /land clearing mortalities)	Construction	Long	Moderate	Local	Direct	Low <25%	Minor
FLORA	Terrestrial ecology and biodiversity	Proliferation of invasive species inland	Construction	Long	Moderate	Local	Direct	High >75%	Moderate
	Terrestrial ecology and biodiversity	Loss of unique flora and special habitats in the local environment because of general nuisance and animal migrate.	Construction	None	Moderate	Regional	Direct	Low <25%	Moderate
SOCIAL	Noise Pollution	Increased noise levels	Construction	Moderate	Small	Local	Direct	Low <25%	Minor
	Socio Economic Activities	Temporary and permanent employment prospects.	Construction	Long	Moderate	Regional	Direct	Medium 25 – 75%	Positive
	Contribution to National Economy	Employment, local procurement, duties and taxes.	Construction	Short	None	Regional / National	Direct	Low <25%	Positive

Environmental Impact	Valued Ecosystem Component	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
HERITAGE/ARCAEOLOGY	Artefacts, archaeological high value components	Destruction or affecting paleontological and archaeological artefacts	Construction	Moderate	Moderate	Local	Direct	Medium 25 – 75%	Moderate
TRANSPORT IMPACT ASSESSMENT	Increased traffic, increased pedestrian activity, air pollution and pressure on existing roads., archaeological high value components	Effects on traffic flow and safety.	Construction and operation	Moderate	Moderate	Local	Direct	Medium 25 – 75%	Moderate
HEALTH AND SAFETY	Health Sanitation	Poor ablution and waste management facilities may be detrimental to human health.	Construction	Moderate	Moderate	Local	Direct	Medium 25 – 75%	Moderate
	Property and human life	Electrical hazards and fires may result in fatalities, damage to properties and power surges.	Construction	Moderate	Great	Local	Direct	Medium 25 – 75%	Major

6. RECOMMENDATION

Based on the Environmental Assessment it is concluded that most of the impacts identified can be addressed through the recommended mitigation and management actions for both the construction and operation phases of the fuel retail facility.

Should the recommendations included in this report and the EMP be implemented the significance of the impacts can be reduced to reasonably acceptable standards and durations. All developments could proceed provided that general mitigation measures as set out are implemented as a minimum.

In, this respect it is recommended that the proposed rezoning and land development receives an environmental clearance certificate, provided that the recommendations described in this report and the emp are implemented.

7. LIST OF REFERENCES

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Appendices