ENVIRONMENTAL IMPACT ASSESSMENT

FOR THE PROPOSED CONSTRUCTION AND OPERATION OF A MINI SHOP, BUTCHERY AND ENTERTAINMENT PARK IN ETOSHAPOORT, OUTJO, KUNENE REGION-NAMIBIA

ENVIRONMENTAL SCOPING REPORT

Resubmission

FINAL

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Acronyms

TERMS	DEFINITION
BID	Background Information Document
CA	Competent Authorities
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
GDP	Gross Domestic Product
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&Aps	Interested and Affected Parties
JBIC	Junior Baiano Industrial Consultants
MEFT: DEA	Ministry of Environment, Forestry and Tourism's Directorate of Environmental Affairs
PPE	Personal Protective Equipment

EXECUTIVE SUMMARY

The proponent [**Outjo Properties (Proprietary) Limited**] has put forth a proposal to construction and operation of a Mini shop, butchery and Entertainment Park in Outjo, Kunene Region, Namibia. The proponent's objective is to develop the 1473.50m2 plot into a contemporary supermarket/office/entertainment complex with adequate car parking and amenities' that will serve the local community.

The development may include the following: Retail Shopping Units, Banks, Food & Beverage Outlets, Office Space, Automotive Retail Unit, Children Recreation Area, Healthcare Facilities as well as Conferencing Facilities.

They have adopted an urban design process that will enhance the quality of development on the land and in so doing influence the surroundings. This will see the project planned and designed to a level required for statutory planning applications to be submitted and approvals obtained.

Junior Baiano Industrial Consultants (JBIC) cc has been engaged by the **Outjo Properties (Proprietary) Limited** to conduct an Environmental Impact Assessment (EIA), develop an Environmental Management Plan (EMP) and apply for an Environmental Clearance Certificate for the proposed Supermarket and Entertainment Park Region-Namibia.

In terms of the Environmental Impact Assessment Regulations 2012, the proposed project triggered the application for an environmental clearance certificate.

Environmental Impacts

- Possible hydrology and water quality degradation,
- Soil erosion,
- Increased runoff from new impervious areas,
- Solid Waste generation,
- Noise pollution,
- Traffic Congestion
- Air pollution from dust emissions and exhaust emissions,
- Oil Spills,
- Increased water demand,
- Increased energy consumption,

- Increased demand for building materials extracted from natural resource base,
- Workers accidents and hazards during construction,

Social Impacts

- The project is generally expected to contribute to improving the livelihoods of the local community of Outjo through employment opportunities and increased provision of services and amenities which are not readily available in the area.
- Improving growth of the economy
- Increased business opportunities
- Provision of recreational and tourism enhancing facilities
- Revenue to national and local governments amongst others
- Improved local transport and traffic
- Improved local security
- Easy access to commercial services by local residents

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

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.

Recommendation

It is quite evident that the proposed construction of the commercial and recreational facility and its associated infrastructural facilities for **Outjo Properties (Proprietary) Limited**, will bring about positive effects in the project area including creation of employment, improving growth of the economy, boosting of the informal sector, optimal use of land, incorporation of collective waste management and increase in revenue among others, this will collectively contribute towards achieving both the Sustainable Goals and Namibia's NDP and Vision 2030.

It is also realized that, although the development will come with various positive impacts, some negative impacts are inevitable and the purpose of conducting this EIA is to chart ways to mitigate them or where possible eradicate them completely. The possible negative impacts that may arise from this project include: hydrology and water

quality degradation, noise pollution, dust and exhaust emissions and generation of solid wastes among others.

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 Supermarket and Entertainment Park. 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 at a minimum.

In this respect it is recommended that the proposed Supermarket and Entertainment Park 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

Outjo Properties (Proprietary) Limited is proposing to build construction and operation of a Supermarket and Entertainment Park in Outjo, Kunene Region, Namibia. The objective of the project is to provide quality commercial and recreational services as well as more options for retailers and local community members in terms of attractiveness of the location, its catchments of population, accessibility, parking facilities and the quality of the shopping and recreational environment as a whole.

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) echoes the need of an Environmental Impact Assessment (EIA) for new projects such as the proposed development.

Non-compliance to legal obligations presents liabilities and it is in the wake of the need to attain sustainability that the proponent has opted to undertake an EIA for its proposed Supermarket and Entertainment Park. EIA is required to obtain an Environmental Clearance Certificate (ECC) from the Ministry of Environment and Tourism (MET) before the project can proceed. In this context the company has set out to conduct the Environmental Impact Assessment (EIA) for its upgrade activities. The EIA is the official appraisal process to identify, predict, evaluate and justify the ecological, social and related biophysical impacts of the Supermarket and Entertainment Park on both the environment and, affected and interested stakeholders. It provides insight on alternatives and measures to be adopted to prevent or mitigate any impacts/risks that may ensue from the Supermarket and Entertainment Park and its associated activities.

As per the requirements of the Environmental Management Act No. 7 of 2007, **Outjo Properties (Proprietary) Limited** has appointed JBIC to conduct the EIA and develop an Environmental Management Plan (EMP) for the proposed project. In this respect, this document forms part of the application to be made to the DEA's office for an ECC for the proposed Supermarket and Entertainment Park, in accordance with the guidelines an 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

The proposed project site is located in the center of Etoshapoort location, in Outjo. The locality map below gives a local layout view of the project site. The coordinates of the site are shown in the table below.

Table 1-1: Project Site Coordinates

Point	Latitude	Longitude
1	-20.112558463588357	16.17007146799422
2	-20.112918717786677	16.169978510588408
3	-20.112962974235415	16.170314457267523
4	-20.112596810795367	16.170309597636843

Figure 1-1: Project Location

1.3 PROJECT OVERVIEW

The objective of the project is to provide quality commercial and recreational services as well as more options for retailers and local community members in terms of attractiveness of the location, its catchments of population, accessibility, parking facilities and the quality of the shopping and recreational environment as a whole. The development will facilitate a greater variety of shops, and can create a more pleasant environment for shoppers, and provides a great opportunity for urban dwellers to relax.

The components of the Mini-Supermarket and Entertainment Park project include:

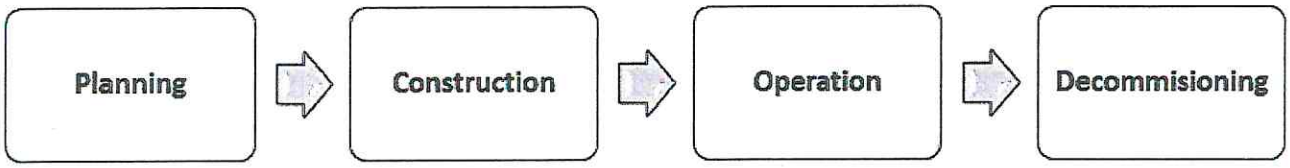
i. Planning and design of project. The project site will be developed into a contemporary commercial and recreational facility with adequate car parking and amenities that will serve the local community. The development may include the following:
   - Retail Shopping Units
   - Banks
   - Food & Beverage Outlets
   - Office Space
   - Automotive Retail Unit
   - Children Recreation Area
   - Healthcare Facilities
   - Conferencing Facilities

ii. Tendering and awarding of contracts to contractors who are to manage the project work

iii. Construction work encompassing activities such as:
   - Site clearing for site infrastructure and, water and sewer reticulation components.
   - Construction of the access roads and storm water drains as per approved drawings and specifications.

iv. Operation of the Mini-Supermarket and Entertainment Park

As shown in the figure below the project will have four stages namely the planning, construction, operational and decommissioning stages.



Planning	Construction	Operation	Decommissioning
• Licenses & approvals • Financial arrangements • Tendering & awarding of contracts • Designs & Approvals • Procurement	• Workforce recruitment & training • Constructions & Installations	Mini-Supermarket and Entertainment Park commercial and recreational activities	Closure of facility and conversion to other use

Figure 1-2: Project Process Chart

1.3.1 Planning and Design of Project Work

This is to include the following:

- Land acquisition and registration.
- Preliminary site investigations e.g. geotechnical assessments and topographical surveys.
- Permit applications.
- Preparation of site plans/drawings and application of the appropriate approvals from the relevant regulatory authorities such as the Municipality of Outjo.
- Assessment of baseline condition to determine supply and demand for required project services.
- Carry out EIA and obtain the appropriate approvals.

1.3.2 Project Design Considerations

The project design guidelines and engineering concepts are based on national and local government legal requirements on construction, structure/settlement planning and design, water and sewer reticulation, building/infrastructure design and construction, roads and storm water drainage

The project planning and design considered the effects of environmental and scenic features of the site and how the project will affect the environs.

The main design factors that have been considered include amongst others:

- Geotechnical considerations taking into account structural stability and prevention of land, groundwater and surface water contamination.

- Surrounding infrastructure.
- The CBD, traffic routes and associated traffic dynamics
- Technical features such as any electricity and telephone lines; portable water and sewerage reticulation systems; etc.
- Adoption of environmentally sustainable methods that include water conservation, solid waste management, energy efficiency, the preservation of ecology species and the use of sustainable drainage system.
- Labour is necessary during the construction and operation of the project. It is the intention of the proponent that this labour is sourced from within the local community. This will be a direct economic benefit to them and will go far in creating a friendly relationship and working environment between the project and the neighbouring community.

1.3.3 Tendering and Awarding of Contracts

Contractors are to be engaged by proponent in order to carry out the project work. Therefore an invitation to tender is to be send out to prospective contractors so that offers are made for the supply of various goods and services that are required for the project. Subsequently the project contractor will be selected, contract signed and thereafter the project work will commence.

The contractor is to ensure that a safety, health and environmental (SHE) risks/impacts are managed to acceptable levels as guided by the project Environmental Management Plan (EMP). Proponent is to ensure that various project SHE legal obligations and commitments such as those stated in the EIA are included in the Tender document to allow prospective contractors to make full provision in their offers.

The following include SHE obligations that are to be adhered to by the contractor.

- The contractor is to abide by applicable SHE regulations and standards with particular regard to emissions and discharges. Regulations concerning the control and abatement of water, land and air pollution are to be taken into account. In addition activities are to be performed in a manner that will prevent the entry or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into the biophysical environment.

- Disseminate Environmental Management Plan (EMP) requirements to all employees and any other necessary parties.
- Establish, document, implement and maintain procedures for EMP implementation.
- Ensure employees are adequately trained and competent to undertake their respective tasks safely and in a manner that is environmentally friendly.
- Put in place measures to prevent the occurrence of fires and the pollution of the environment. In event of a fire immediate steps to extinguish it should be taken.
- Arrange for the collection of waste paper and other waste materials and discourage acts of pollution so as to maintain the site in a clean and tidy condition throughout the construction period.
- Ensure full information with regard to the position of all existing services and structures is obtained and exercise the utmost care when working in their vicinity.
- Ensure that storage accommodation for plant and materials are well ventilated, water, damp, and vermin proof, with floors raised off the ground to keep materials dry and well aerated.
- Ensure the site is kept in a clean, sanitary and orderly condition at all times.
- Supply and maintain, fully stocked on-site, an adequate and easily accessible First Aid Outfit.
- Perform all work activities in a manner that will prevent pollution of the soil by accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants. In the event that accidental spillages all contaminated areas are to be treated any other necessary remediation measures.
- The on-site storage of excessive quantities of unwanted spoil and aggregate materials is to be avoided. Where storage is necessary, it is to heaps and stockpiles are located at sites that they do not permit direct runoff into watercourses and are on gentle sloping land e.g. sloping at less than 1.5%. All heaps shall be of a size and stability that will ensure the risk of mass movement during periods of high intensity rainfall is minimized.

The proponent will monitor the contractor's adherence to EMP and recommend additional mitigation measures where necessary. Periodic comprehensive compliance audits to applicable legal and EMP requirements are to be carried out. The objectives of the audits include to:

- Assess periodically the compliance of completed or on-going activities with various SHE obligations that apply to the project.
- Determine effectiveness EMP, identify gaps and areas of continual improvement.

1.3.4 Construction Employee, Accommodation and Site Facilities

The project is to be tendered to a contractor who is to oversee the project activities as per designs and project planning aspects provided by the proponent. These are to comprise skilled, semi-skilled and non-skilled individuals. The employees will include engineers, technicians, artisans, security personnel, site clerk, operators for excavators/trucks/front-end loaders, general hands, etc.

No accommodation is to be provided on site as employees will be housed in residential areas within the town.

Temporary offices are to be provided for project personnel such as the Resident Engineer, Resident Technician, Site Agent and Site Clerk. Guard room, temporary kitchen and ablution facilities are to be provided for.

1.3.5 Site Preparation

The proposed project site will be prepared for construction. This will involve clearing of vegetation, excavation works and transportation of construction materials. In order to minimize/mitigate the effects of excessive dust generation and soil erosion, this will be done in stages. Heavy earthmoving equipment, including bulldozers and excavators, would be used during construction because of the fairly large scale nature of proposed project. In order to give the locals, (especially the youth) employment, the proponent will also use human labor as necessary.

1.3.6 Storage of materials

Building materials will be stored on site. At selected locations on the site, heavy items like stones, ballast, sand, and steel will be carefully piled. The proponent will place quota orders for heavy materials like sand, gravel, and stones to prevent stacking up enormous amounts of materials on the site.

1.3.7 Masonry, concrete work and related activities

There will be a significant amount of masonry work, plumbing installation, and related activities involved in the project's construction of the building walls, foundations, floors,

pavements, drainage systems, access roads, and parking, among other project components. Concrete mixing, plastering, slab construction, foundation construction, building wall erection, and curing of newly laid concrete surfaces are all examples of general masonry and related tasks. These tasks are known to require a lot of labour, hence machinery will be used to supplement the work.

1.3.8 Steel Works, Roofing, Electricals and Plumbing

The building will be reinforced with structural steel for stability. Structural steel woks involve steel cutting, welding and erection. Roofing activities will include raising the roofing materials such as tiles and structural timber to the roof and fastening the roofing materials to the roof.

Electrical work during construction of the premises will include installation of electrical gadgets and appliances including electrical cables, lighting apparatus, sockets etc. In addition, there will be other activities involving the use of electricity such as welding and metal cutting. Installation of pipe-work will be done to connect sewage from the ablution blocks to a sewer system.

Plumbing will also be done for drainage of storm water from the rooftop into the peripheral storm water harvesting tanks. Plumbing activities will include metal and plastic pipe cuttings, the use of adhesives, metal grinding and wall drilling among others.

1.3.9 Project Operational Activities

1.3.9.1 The Facility Users

The proposed project, when completed will target both people from within Outjo and those from outside the town.

1.3.9.2 Solid Waste

The proponent will provide facilities for handling solid waste generated within the facility. These will include dust bins/skips for temporarily holding waste within the premises before final disposal at the designated sites. The EMP will be implemented to ensure that the volume of solid waste generated within the entire development is minimised through the principles of reduce, re-use and recycle.

1.3.9.3 Traffic Management

Managing traffic is an important part of ensuring the Mini-Supermarket and Entertainment Park is without risks to health and safety. Vehicles, including powered mobile plant, pose a

risk to workers and members of the traffic when moving in and around a workplace, reversing, loading and unloading. Traffic in and around shopping centres includes passenger vehicles, shopping trolley collection vehicles, delivery trucks, forklifts, cyclists and pedestrians, including customers, workers and business owners.

Persons conducting a business or undertaking (PCBU) are to be made aware that they have a duty to ensure, so far as is reasonably practicable, workers and others are not exposed to health and safety risks arising from the business or undertaking. This duty includes implementing and reviewing control measures to prevent people being injured by moving vehicles at a shopping centre.

In order to manage ***pedestrian, cyclist and passenger vehicle traffic***, consideration will be given to developing a pedestrian and cycling plan that includes separate walkways and cycle routes. The more direct these routes are, the more likely pedestrians and cyclists will use them. Consideration will also be given to:

- separate cycle storage areas away from loading dock areas and other mobile plant.
- separate walkways should be provided for pedestrians accessing the cycle storage areas.
- widening footpaths to allow people with prams, shopping trolleys, wheelchairs and electric scooters to be able to easily pass each other.
- locating parking for parents with prams, the elderly and disabled away from major traffic flows but as close as possible to pedestrian entrances, exits and crossings.
- regularly monitoring and maintaining footpaths to minimise trip hazards.
- quickly removing obstructions caused by building works or parked vehicles, and implementing warning and traffic signs and speed limits.

To manage traffic risks around ***taxi ranks and bus stops***, the following are to be considered:

- designated areas for taxi ranks and bus stops that is separate from other vehicles where possible
- where possible, using design and location to eliminate the need for taxis and buses to reverse

- installing signs that clearly mark the direction of vehicle travel, pedestrian crossings and speed limits, and
- providing footpaths to guide pedestrians to bus stops and taxi ranks
- Shopping trolley collection

Where ***trolley collection*** activities are contracted to another business, duty holders must communicate, consult and work together in a co-operative and co-ordinated way to manage the risks. PCBUs should conduct a risk assessment to ensure moving the trolleys does not place the worker or others at risk of injury and does not create a traffic hazard.

Vehicle deliveries, loading docks and scheduling. To manage health and safety risks for while loading and unloading, a PCBU must minimise risks so far as is reasonably practicable, for example through:

- designing separate entry and exit points for large vehicles
- installing physical barriers around walkways leading to waste areas
- installing convex mirrors to improve visibility for drivers and pedestrians
- providing walkways with physical barriers to areas where pedestrians order, pick up or transfer goods, and
- limiting vehicle speeds by using traffic calming devices or speed limits
- separating vehicles from customers and other pedestrians by using barriers, guard rails or designated loading docks e.g. a security gate to prevent unauthorised entry
- controlling or limiting vehicle access to loading docks
- using schedules or a queuing time slot system for entry to the centre with large volume vehicles
- establishing schedules for using loading docks to reduce how often heavy vehicles and pedestrians interact for example, bin and compactor waste should be picked up when the centre is closed or when the volume of public traffic is low
- preventing general public access to high traffic areas and clearly displaying signs prohibiting unauthorised access, and
- clearly marking walkways, vehicle parking and loading bays

Any remaining risk must be minimised using personal protective equipment, such as high visibility vests. Loading docks should be designed or changed to avoid the need for vehicles

to reverse, especially where pedestrians and other vehicles may be nearby. The design should ensure everyone in the loading dock has clear visibility of the whole work area.

1.3.9.4 Wastewater and Stormwater Management

The wastewater and stormwater from the complex will be managed via the local authority's sewage and stormwater system. Where possible measures are to be instituted for dealing with storm water drainage/run-off generated on the site including a degree of rainwater recycling, ensuring pathways, pavements, and above ground parking lots within the development allow water to seep into the ground, so as to aid in recharge of the water table and discharge into local river/stream systems. The proponent will provide adequate and safe means of handling liquid waste generated within the facility. These will include conducting regular inspections for pipe blockages or damages and fixing them appropriately. Also, the proponent will conduct regular monitoring of the sewage discharged from the project to ensure that the stipulated sewage/effluent discharge rules are not violated.

1.3.9.5 Mains Water Supply

A dedicated mains water infrastructure system is to be provided for the development. It is proposed that there will be a new mains water connection to serve the development from the existing utility main. A new utility water meter and valve pit will be provided by the local authority. From this water meter chamber an infrastructure network of mains water pipework will be run within the footpaths which are adjacent to the primary and secondary pathways to serve the development. A dedicated valve chamber and branch connection will be provided to serve the development. A dedicated potable water system will be provided within the building for domestic and drinking water purposes. A dedicated non potable water system will also be provided and this will serve Water Closet and Urinal flushing facilities within each the development.

1.3.9.6 Fire Main

A dedicated fire water infrastructure system is to be provided for the project. An infrastructure network of fire water pipework will be run within the footpaths which are adjacent to the primary and secondary pathways to serve the development. Also connected to this fire water infrastructure network will be a number of external fire hydrants. A dedicated firefighting water system will also be provided within the building.

1.3.9.7 Electrical Power

Incoming power to the site will be derived from the main national electrical grid. This will be supplemented with solar energy especially for security lights and ornamental lights. For landlord supported areas, the standby generator plant would serve all facilities. This will be prefabricated or formed into a suitable building to match the local building style. Careful co-ordination for cooling and exhaust be ensured. A suitable acoustically treated structure/enclosure will need to be formed.

1.3.9.8 Earthing and Lightning Protection

Buildings/ structures within the proposed development which will require lightning protection will generally include a roof air termination network with suitable down conductors to ground level. Where practical, it may be possible to make use of the building structure to form the down conductor path, with suitable test and inspection facilities at the lowest levels.

1.3.9.9 General repairs and maintenance

The proposed development and associated facilities will be repaired and maintained regularly during the operational phase of the project. Such activities will include repair of building walls and floors, repair and maintenance of electrical gadgets, painting and replacement of worn out materials among others.

1.3.9.10 Description of the project's decommissioning activities

Although it is not anticipated that a decommissioning phase will occur, provision has been made for this possible eventuality in environmental design stage of the project. Once all the waste resulting from demolition and dismantling works is removed from the site, the site will be restored through replenishment of the top soil and re-vegetation using indigenous plant species. A comprehensive landscaping plan is to be developed. The site will be landscaped using plant species available locally. This will include, tree planting, establishment of flower gardens and grass lawns to improve the visual quality of the site.

1.4 ACCESSIBILITY

The site can be accessed through the existing access roads.

1.5 INFRASTRUCTURE AND SERVICES

The proposed development will be connected to the existing water and sewerage reticulation system.

1.6 NEED AND DESIRABILITY

The proposed activity is a welcome addition to Outjo because it will provide much-needed jobs, improves the local infrastructure, and boosts the local economy GDP. The proposed development will allow for the best possible use of the site and offer amenities that are not now easily accessible to the locals. The proponent recognized an opportunity for the proposed development in this regard.

1.7 PROJECT ALTERNATIVES

1.7.1 No-Go option

The project will not be implemented if the No-Go option is selected. This option is the most suitable alternative from an extreme environmental perspective as it ensures non-interference with the existing conditions. It would mean that the various potential impacts/risks emanating from the facility operations would not be experienced. Thus the current uses and value and other potential land uses of the site are likely to be retained.

In addition there would no increased pressure on resources such as electricity and water which are already under strain. There also would be no increased chances of pollution (e.g. from solid waste that may emanate from the facility).

The No Project Option is the least preferred from the socio-economic and partly environmental perspective due to the following factors:

- The developer will not invest in offering of the retail, leisure and recreation services within the town.
- The economic status of the local community members would remain unchanged.
- The local skills would remain under-utilized.
- Reduced interaction both at local and national level.
- No employment opportunities will be created for those in and around Outjo.
- Increased poverty and crime.
- Discouragement for investors

Due to the project's numerous environmental and socio-economic benefits, and that the identified environmental impacts can be suitably mitigated it has been determined that the No Go option can be eliminated. Should the Competent Authorities (CA) refuse the authorisation

of the proposed project, the 'No Go' option will be "implemented" and the status quo of the site will remain intact - leaving the site in its present state.

Table 1-2: Alternative Considerations

Item	Description	Alternatives	Comments
1.	Siting	Current Site	This is the only site that proponent may conduct the project activities activities.
2.	Transportation	• Road • Rail	Given the location of the project, road and rail are the most cost effective means of transport.
3.	Solid Waste Disposal	• Construction of a solid waste disposal site at the project site • Disposal of solid waste off site	Construction of a waste disposal on site is not feasible. Thus the town waste disposal site will be used for project operations.
4.	Water and Sanitation	• Municipal water supply and sewer system. • Drilling a Borehole on site • Septic tank	There are existing domestic water and sewer reticulation systems that run through the project site.
5.	Energy	• Electricity • Solar	Taking into account investment costs it is cost effective to use electrical energy as an energy source in the initial stages of the project.
6.	Analysis of Alternative Construction Materials and Technology	• Use of latest modern technologies	The proposed project will be constructed using modern, locally and internationally accepted materials to achieve public health, safety, security and environmental aesthetic requirements. Durable well reinforced concrete roofs will be used. This will ensure that the rainwater harvested will be utilized on site. Heavy use of timber during construction is discouraged because of destruction of forests. The exotic species would be preferred to indigenous species in the construction where need will arise. However, the building methods and technologies to be used will require very little timber.

1.7.2 Conclusion

It is recommended that the project goes ahead, with the Supermarket and Entertainment Park as a viable option as it is a cost effective and sustainable land use option.

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 construction and land servicing activities. This section looks at the legislative framework within which the proposed project will operate under. The focus is on the compliance with the legislation during the planning, construction and operational phases. All relevant legislations, policies and international statutes applying to the project are highlighted in the table 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).

2.2 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

The pursuit of sustainability is guided by a sound legislative framework. In this section, relevant legal instruments as well as their relevant provisions have been surveyed. An explanation is provided regarding how these provisions apply to this project.

Table 2-1: Legal Compliance

Aspect	Legislation	Relevant Provisions	Relevance to the Project
The Constitution	Namibian Constitution First Amendment Act 34 of 1998	• 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."	• 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	NDPs	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 developed.
	National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979	• "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	• 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 affected parties to voice their opinions about a project (Section 2(b-c)). • 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.	This Act and its regulations should inform and guide this EIA process.

Aspect	Legislation	Relevant Provisions	Relevance to the Project
		• Details principles which are to guide all EIAs	
	EIA Regulations GN 57/2007 (GG 3812)	• 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)	• 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 bill also describes how waste should be managed to reduce environmental pollution. Failure to comply with the requirements considered an offence and is punishable.	The project should be executed in harmony with the requirements of the act to reduce negative impacts on the 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	Forming part of the EIA of and EMP for this Project, the proponent will consider all associated impacts, both acute and

Aspect	Legislation	Relevant Provisions	Relevance to the Project
		with ecosystems protection, biosafety, and biosystematics protection on both terrestrial and aquatic systems.	long term, and will propose methods and ways to sustain the local biodiversity.
Forestry	Forest Act 12 of 2001	• 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.	On site there are no trees.
Water	Water Act 54 of 1956	• 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 with Regulation 156, 'Regulations Relating to the Health and Safety	• 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 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).	The proponent will employ several people and shall ensure securing a safe 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.

Aspect	Legislation	Relevant Provisions	Relevance to the Project
	of Employees at work'.	• 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.	
	Public Health and Environmental Act, 2015	• 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 operation will ensure compliance to the terms of the Act.
Services and Infrastructure	Road Ordinance 1972 (Ordinance 17 0f 1972)	• 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) • Distance from proclaimed roads at which fences are erected (S38)	Although the project is a major boost for the town, the proponent needs to ensure that the development do not affect the major roads within their vicinity during construction and operation phases.

3 CHAPTER THREE: RECEIVING ENVIRONMENT

3.1 SOCIO-ECONOMIC

The project is located in the Outjo constituency/district in the Kunene region (see Figure 1-1). It is one of the six electrical constituencies in the in the Kunene Region.

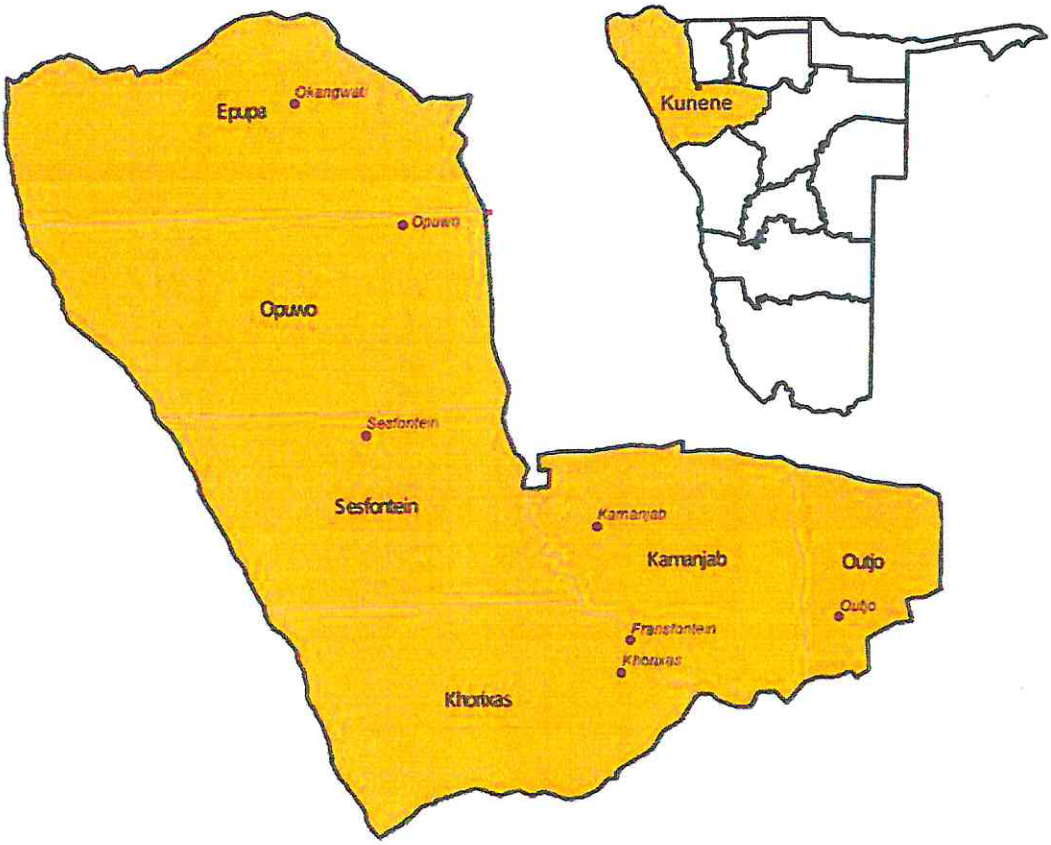


Figure 3-1: Kunene Region

Source: Kunene 2011 Census Regional Profile, NSA, 2011.

The constituency has 12,447 inhabitants and its district capital is Outjo (NSA, 2011).

Outjo, town, northwestern Nambia, governed by a municipal council that has seven seats. The town is situated on a cluster of low hills at an elevation of 4,135 feet (1,260 metres). It lies within an arid region that has accessible underground water supplies.

The town is a trading centre for the surrounding ranching and stock-raising area, and the local industries for the most part produce meat and dairy products and Karakul lambs' wool.

Outjo offers some tourist attraction sights, but it is above all an important tourist transit and supply point. Attractions in the area include the Franke-Haus-Museum, Naulila monument, the Water Tower Outjo, which was originally equipped with a wooden wind turbine, was used

for water extraction. Near the town is also a fingerlike rock formation created through erosion called Vingerklip.

A branch railway from Otjiwarongo, 29 miles (47 km) to the southeast, terminates at Outjo (Britannica, 2020).

Situated on the C38 90 kilometres (56 mi) southwest of Anderson Gate, Outjo is the gateway to the Etosha National Park. Damaraland is also reached by travelling through Outjo on the C39 to Khorixas, and the C40 towards Kamanjab leads to the Kaokoveld.

Outjo has an airstrip about 10 kilometres out of town that accommodates small fixed-winged planes. Outjo is the terminus of a branch railway of the Namibian railway system, but there is no railway service at the moment.

Immediately in Outjo are three primary schools and two secondary schools as well as a combined private school. There are also some schools in the vicinity of the town.

Extrapolating from the national unemployment statistics, the constituency has an unemployment rate of 33.40% and youth unemployment rate of 46.10% (Namibia Central Bureau of Statistics, 2019). This shown in the figure below.

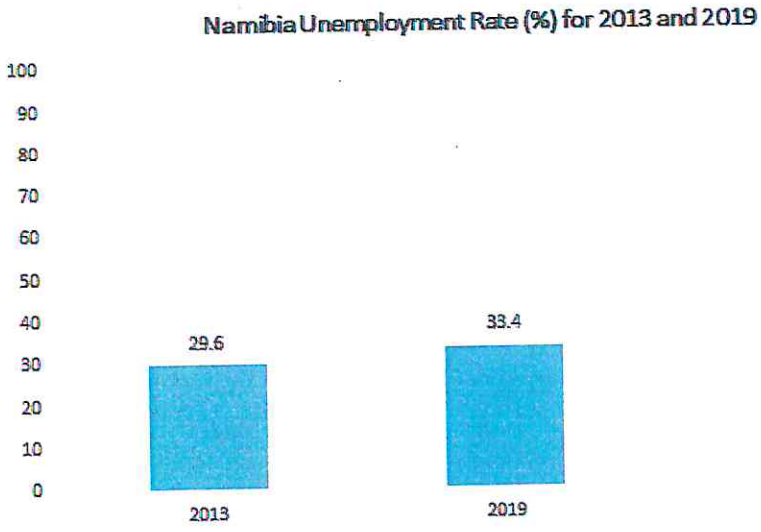


Figure 3-2: Namibia Unemployment Rate and Youth Unemployment Rate

The project will support the district's need for employment as well as the expansion of the local economy. Numerous employment opportunities are to be created for work personnel throughout the project phases. In addition other forms of employment are likely to result from spillover effects, through indirect services such as supply of raw materials, equipment, machinery, etc.

3.2 CLIMATE

The climate in the project region is characterized by a semi-arid climate that has little rainfall throughout the year, that ranges between 400-450 mm. June is the driest month, with an average rainfall of 0 mm. January, on the other hand, is the wettest month. October through March are the hottest months of the year. Temperatures during this time of year might have highs that range from 35 °C to 45°C. Winter generally runs from June until August. During this season, the minimum temperatures may range between 4 °C and 8 °C..

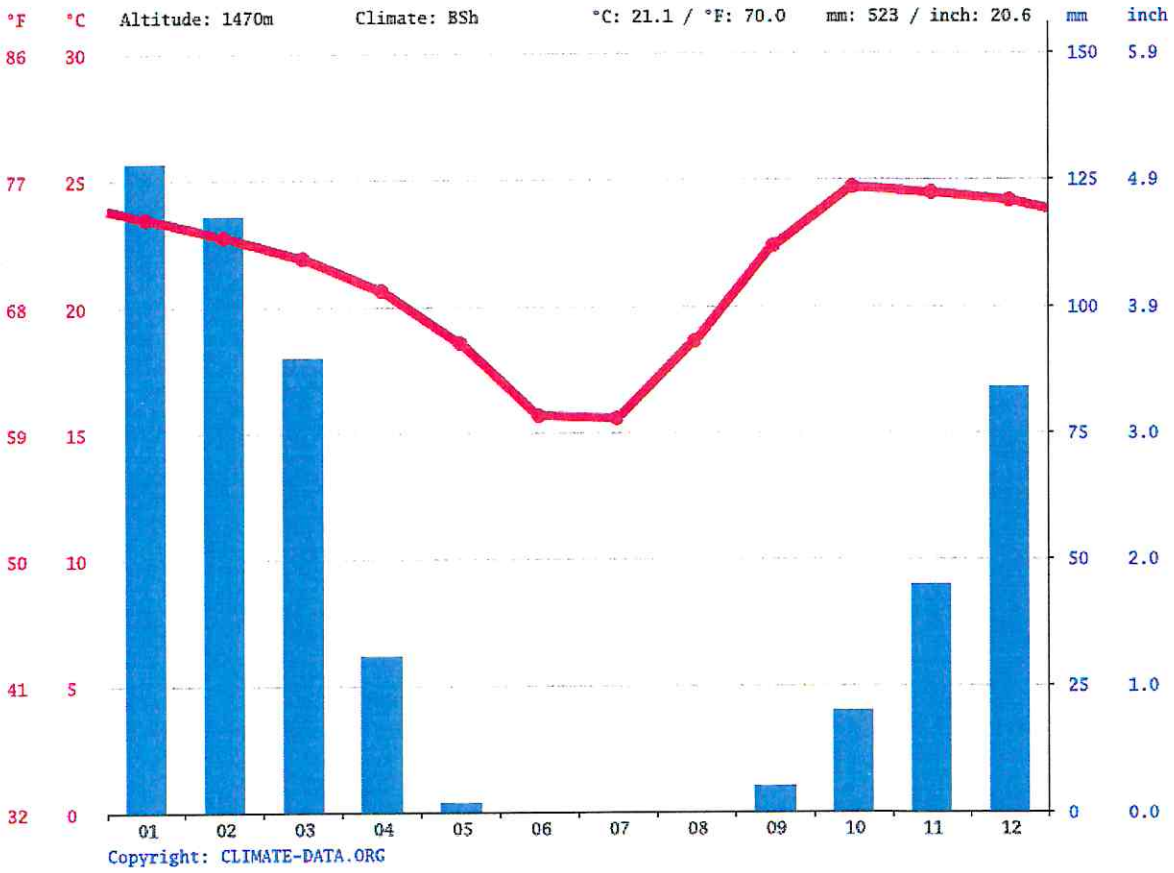


Figure 3-3: Outjo Climatic Graph

Source: Climate-data.org, 2022

Taking into account the climate conditions of the project area there is need for appropriate planning and preparation both in the establishment of the project and its operation. The area is susceptible to droughts and extended dry periods. The type of impacts/risks that may occur under these conditions include:

- Inadequate water supply
- Possible conflicts with local community and other businesses regarding the utilisation of shared water sources.

High temperatures during summer can also affect project workers. The major impact associated with high temperatures and exposure to the sun is heat stress. Heat stress impacts may affect workers' health (through heat related illnesses), safety (inhibiting abilities to perform tasks in already hazardous environments), productivity (thermally stressful conditions may result in decreased pace of work) and morale.

3.3 FLORA AND FAUNA

The vegetation in the region varies from dwarf shrub savannah and grasslands ecosystem. The families of tree/shrub species that are found in the region include Fabaceae, Tiliaceae, Combretaceae, Euphorbiaceae and Capparaceae. Tree species one may come across include *Acacia mellifera, Acacia reficiens, Grewia flava, Grewia flavescens, Crton gratissimus* and *Boscia albitrunca.* Grass species that may be encountered are *Stipagrostis uniplunis* and *Cenchrus ciliaris*. The species in and around the project area are not endemic or endangered in Namibia.

Literature on bird species illustrates that Namibia consist of 620 native bird species. Touristic highlights are scarce in the town of Outjo, hence the nearest documented place, the Etosha National Park inhabits 412 species of bird. Of the country's 13 endemic species, 8 have been reported from Etosha; Hartlaub's francolin, Rüppells korhaan, Rüppells parrot, Monteiro's hornbill, Carp's black tit, bare-cheeked babbler, rockrunner and the white-tailed shrike, are all reported as breeding in Etosha. All of Namibia's 40+ species of raptor, including all Namibian vultures and 12 eagles are in Etosha and the park is listed as an Important Bird Area. However, none of these birds are associated with portion of land allocated for the construction of the project and its surrounding environs

3.4 GEOLOGY AND GEOHYDROLOGY

The surface geology of the area consists of formations of mainly the Kalahari Group which has a thickness of up to 30m in the study area. Within the Kalahari Group the following six lithological classifications are recognized: Duricrusts, Kalahari sand, Alluvium and lacustrine deposits, Sandstone, Marl, Basal conglomerate and gravel. The Damara Supergroup and Gariep Complex and Oldest Rocks are also present in the study area. Surficial Kalahari sand covers almost the entire land surface. These lithologies comprise of fine to medium grained quartz sand, off-white in colour and typically clay-free in the upper 5m. These aeolian sands represent reworked Kalahari sediments. Though red sands occur, much of the surface sand in the study area is leached of any iron straining. The transition from the so-called Kalahari sand to the older, underlying sandstone is often not clear, but seems to

be gradational. Below the surficial horizon, similar sands are found, but often with varying clay content that may reach significant (>10%) proportions. The Kalkrand Formation of the Karoo Supergroup is expected to underlie the Kalahari Group. Groundwater flow would be mostly through primary porosity but flow along fractures, faults and other geological structure present within the formations might take place where consolidated layers are present.

4 CHAPER FOUR: PUBLIC CONSULTATION

4.1 OVERVIEW

The public consultation process forms an important component of the Environmental Assessment process. It is defined in the EIA Regulations (2012), as a "*process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters*" (S1). Section 21 of the Regulations details steps to be taken during a given public consultation process and these have been used in guiding our process.

Formal public involvement has taken place via public consultations and focal meetings, newspaper announcements to inform the public that such a large-scale project is under consideration. 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 and the World Bank EIA standards and project ToR.

Its overriding goals have been to ensure transparency in decision making and to.

- ✓ Ensure stakeholder concerns are incorporated in project design and planning;
- ✓ Increase public awareness and understanding of the project and
- ✓ Enhance positive development initiatives through the direct involvement of affected people.

The objectives of the public participation is to build credibility through instilling integrity and of conducting the EIA, Educate the stakeholders on the process to be undertaken and opportunities for their involvement and build stakeholders by establishing an agreed framework accordingly. This requires accessible, fair, transparent and constructive participation at every stage of process. Inform stakeholders on the proposed project and associate issues, impacts and mitigation and using the most effective manner to disseminate information.

In this section of the report, the results of consultations with various classes of stakeholders are summarized. The results of consultations with other stakeholders and community members who took part in this EIA are attached as Appendices.

The consultation was facilitated through the following means:

- A Background Information Document (BID) containing the project description, the EIA process and an invitation to participate was shared with stakeholders and community members.
- Invitation to participate notices were published in the local newspapers (New Era and Confidante) as shown in the table below and Appendix A of this document.
- Announcement of EIA process verbally in the common public meeting points.
- Placement of a public notice at the project site and town centre.

Table 4-1: Details of public notification of the EIA study

Method	Area of Distribution	Language	Date Placed
The Confidante	Country Wide	English	29 April and 6 May 2022
Windhoek Observer	Country Wide	English	29 April and 6 May 2022
Site notices	Project site	English	6 May 2022
	Town Council Notice Board	English	6 May 2022
Public Meeting	Outjo Community Hall in Etoshapoort, Outjo	English,	12 May 2022

✓ *Key Stakeholder Engagement Meeting*

A public meeting was organised on 12 May 2022 at Outjo Community Hall in Etoshapoort, Outjo. Proof of public consultation is given in Appendix A of this document as well the attendance register explaining the project and the EIA study. Given below are the details of the public consultation stakeholders:

✓ *Identification of Interested and Affected Parties (I&APs)*

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

- NAMPOWER
- CENORED
- Community Members.

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.

✓ *Consultation with Stakeholders*

Experts in relevant fields, leaders of thought in environmental matters, Organs of the State (Nampower, Town Council) local communities have been consulted for their opinions on issues relating to the potential ecological and socio-economic impacts of the proposed project. This provided an opportunity for stakeholders and the public at large to engage in the process and to make comments or express their concerns regarding the proposed development.

It must be noted that although the call of a public meeting was done, however no local community members attended the meeting to give their input as far the proposed project is concerned (see Figure 4.1).

Figure 4-1: Public Consultation Evidence

Nonetheless, individual interviews were conducted with selected stakeholders and their input in summarised in Table 4-2.

Table 4-2: Key findings of the public consultation process

SUMMARY OF ISSUES	
THEME	**ISSUE**
Economic	↓ Employment of general labour must consider employing local people. ↓ The company must take the social responsibility ↓ Improve the life being of the local residents.
Health and Safety	↓ Waste management concerns including both solid waste and wastewater. ↓ Potential air, noise and water pollution due to development. ↓ The company must provide enough health care to employees
Ecological	↓ Concerns regarding oil spillages and leaks resulting land contamination, surface and ground water pollution. ↓ Solid waste should be contained and managed appropriately. ↓ Resources such as air and water should not be polluted during operations because communities, wild animals and livestock rely on these resources.
Communication	↓ Clear communication needs to be promoted between relevant authorities and the local community. ↓ Clarify nature of new property (how it works, what processes involved).

5 CHAPTER FIVE: ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

5.1 OVERVIEW

The proponent recognizes the importance of undertaking the project operation in line with sustainable development objectives and applicable legal requirements. To this end an Environmental Management Plan (EMP) for the project is being developed in order to address negative environmental impacts and enhance positive impacts. The EMP takes into account identification of potential impacts, assessment of the significance of the risks

associated with these impacts and the establishment of preventive actions as well as mitigation measures. The EMP will be monitored, reviewed, and updated as necessary with the aim of continuous improvement, taking into account various changes in project operations, the biophysical environment and socio-economic circumstances.

5.2 ASSESSMENT OF IMPACTS

This section outlines how the overall methodology to assessing the project's possible environmental and social impacts. Each potential impact must be assessed in order to properly evaluate its significance. The definitions and explanations for each criterion are set out below in Table 5-1.

Table 5-1: Assessment Criteria

Duration – What is the length of the negative impact?	
None	No Effect
Short	Less than one year
Moderate	One to ten years
Permanent	Irreversible
Magnitude – What is the effect on the resource within the study area?	
None	No Effect
Small	Affecting less than 1% of the resource
Moderate	Affecting 1-10% of the resource
Great	Affecting greater than 10% of the resource
Spatial Extent – what is the scale of the impact in terms of area, considering cumulative impacts and international importance?	
Local	In the immediate area of the impact
Regional / National	Having large scale impacts
International	Having international importance
Type – What is the impact	
Direct	Caused by the project and occur simultaneously with project activities
Indirect	Associated with the project and may occur at a later time or wider area
Cumulative	Combined effects of the project with other existing / planned activities
Probability	
Low	<25%
Medium	25-75%

High	>75%

(Adopted from ECC-Namibia, 2017)

Table 5-2: Impact Significance

Class	Significance	Descriptions
1	Major Impact	Impacts are expected to be permanent and non-reversible on a national scale and/or have international significance or result in a legislative non- compliance.
2	Moderate Impact	Impacts are long term, but reversible and/or have regional significance.
3	Minor	Impacts are considered short term, reversible and/or localized in extent.
4	Insignificant	No impact is expected.
5	Unknown	There are insufficient data on which to assess significance.
6	Positive	Impacts are beneficial

(Adopted from ECC-Namibia, 2017)

Table 5-3: Environmental Impacts and Aspects Assessment

Environmental Impact	Element	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
TOPOGRAPHY	With Mitigation	Alteration of existing topography	Construction & operation	Short term	Low	Local	Direct	Probable	**Low**
	No Mitigation	Alteration of existing topography	Construction & operation	Short term	Low	Local	Direct	Probable	**Moderate**
	With Mitigation	Topographic changes and Visual Impact	Construction &Operation	Medium term	Moderate	Local	Direct	Probable	**Moderate**
	No Mitigation	Topographic changes and Visual Impact	Construction &Operation	Medium term	Moderate	Local	Direct	Probable	**High**
SOILS	With Mitigation	Loss of usable topsoil material	Construction	Long term	Low	Local	Direct	Probable	**Moderate**
	No Mitigation	Loss of usable topsoil material	Construction	Long term	Moderate	Local	Direct	Highly probable	**High**
	With Mitigation	Spillages and leakages of fuel, oil and other hazardous substances ferried by trucks.	Construction and Operations	Long term	Moderate	Local	Direct	Probable	**Moderate**
	No Mitigation	Spillages and leakages of fuel, oil and other hazardous substances ferried by trucks.	Construction and Operations	Long term	Moderate	Local	Direct	Highly probable	**High**
	With Mitigation	Contamination to soil from waste disposal	Construction and Operations	Long term	Moderate	Local	Direct	Improbable	**Low**
	No Mitigation	Contamination to soil from waste disposal	Construction and Operations	Long term	Moderate	Local	Direct	Probable	**Moderate**

Environmental Impact	Element	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
LAND CAPABILITY	With Mitigation	Land utilisation for the benefit of the people	Operations	Long term	High	National	Indirect	Probable	**Moderate**
	No Mitigation	Land utilisation for the benefit of the people	Operations	Long term	High	National	Indirect	Probable	**Moderate**
	With Mitigation	Decreased in vegetated land (biodiversity zones) around the town.	Construction and Operations	Long term	Low	Local	Direct	probable	**Low**
	No Mitigation	Decreased in vegetated land (biodiversity zones) around the town.	Construction and Operations	Long term	Moderate	Local	Direct	probable	**Moderate**
GROUND AND SURFACE WATER	With Mitigation	Ground and surface water sources and soil may be polluted by construction activities	Construction	Short term	Moderate	Local	Direct	probable	**Moderate**
	No Mitigation	Ground and surface water sources and soil may be polluted by construction activities	Construction	Short term	High	Local	Direct	probable	**High**
	With Mitigation	Groundwater source potentially contaminated by sewerage waste	Operations	Long term	Low	Local	Direct	probable	**Low**
	No Mitigation	Groundwater source potentially	Operations	Long term	Moderate	Local	Direct	probable	**Moderate**

Environmental Impact	Element	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
		contaminated by sewerage waste							
	With Mitigation	Groundwater source and soil may be polluted by construction activities	Construction	Short term	Moderate	Local	Direct	probable	**Moderate**
	No Mitigation	Groundwater source and soil may be polluted by construction activities	Construction	Short term	High	Local	Direct	probable	**High**
	With Mitigation	Increased sediment load from exposed surfaces	Construction	Short term	Low	Local	Direct	Probable	**Low**
	No Mitigation	Increased sediment load from exposed surfaces	Construction	Short term	Moderate	Local	Direct	Probable	**Moderate**
	With Mitigation	Stormwater generation from the open surface area for parking of vehicles will be created, the large open surface area may create stormwater which may result in pollution.	Construction and operations	Long term	Moderate	Local	Direct	Probable	**Moderate**

Environmental Impact	Element	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
	No Mitigation	Stormwater generation from the open surface area for parking of vehicles will be created, the large open surface area may create stormwater which may result in pollution.	Construction and operations	Long term	High	Local	Direct	Highly Probable	**Moderate**
	With Mitigation	Increase in surface water run- off from a large open surface area on site because of vegetation removal	Construction and operations	Short term	Moderate	Local	Direct	Improbable	**Low**
	No Mitigation	Increase in surface water run- off from a large open surface area on site because of vegetation removal	Construction and operations	Short term	Moderate	Local	Direct	Improbable	**Moderate**
AIR QUALITY	With Mitigation	Generation of dust causing a nuisance to neighbouring residents and businesses	Construction	Short term	Low	Local	Direct	Probable	**Low**
	No Mitigation	Generation of dust causing a nuisance to neighbouring residents and businesses	Construction	Short term	Moderate	Local	Direct	Probable	**Moderate**

Environmental Impact	Element	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
	With Mitigation	Odours due to poor waste management.	Operations	Long Term	Moderate	Local	Direct	Probable	**Moderate**
	No Mitigation	Odours due to poor waste management.	Operations	Long Term	Moderate	Local	Direct	Probable	**High**
	With Mitigation	Nuisance from construction machinery and vehicular noise.	Construction and operation	Long term (operation)	Low	local	Direct	Probable	**Low**
	No Mitigation	Nuisance from construction machinery and vehicular noise.	Construction and operation	Long term (operation)	Moderate	local	Direct	Probable	**Moderate**
	With Mitigation	Visual impacts due to use of unsustainable disposal methods	Construction and Operations	Long term	Low	Local	Direct	Probable	**Low**
	No Mitigation	Visual impacts due to use of unsustainable disposal methods	Construction and Operations	Long term	Moderate	Local	Direct	Probable	**Moderate**
FAUNA	With Mitigation	Loss of habitat and clearing or damage to vegetation	Construction	Short Time	Moderate	Local	Direct	Highly Probable	**Moderate**
	No Mitigation	Loss of habitat and clearing or damage to vegetation	Construction	Short Time	High	Local	Direct	Highly Probable	**High**
FLORA	With Mitigation	Proliferation of invasive species Establishment of bush encroachers in disturbed areas.	Construction and Operations	Long Term	Low	Local	Direct	Probable	**Low**

Environmental Impact	Element	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
	No Mitigation	Proliferation of invasive species Establishment of bush encroachers in disturbed areas.	Construction and Operations	Long Term	Low	Local	Direct	Probable	**Moderate**
	With Mitigation	Clearing of land may lead to destruction of protected vegetation and loss of biodiversity. Loss of mature and protected tree species due to clearing of land for parking space.	Construction	Short Term	Low	Local	Direct	Highly Probable	**Low**
	No Mitigation	Clearing of land may lead to destruction of protected vegetation and loss of biodiversity. Loss of mature and protected tree species due to clearing of land for parking space.	Construction	Short Term	Moderate	Local	Direct	Highly Probable	**Moderate**
	With Mitigation	Uncontrolled/accidental fires	Construction and Operations	Long Term	High	Local	Direct	Probable	**Moderate**
	No Mitigation	Uncontrolled/accidental fires	Construction and Operations	Long Term	High	Local	Direct	Probable	**Moderate**

Environmental Impact	Element	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
SOCIO-ECONOMIC	With Mitigation	Temporary employment prospects in the area	Construction	Short Term	Low	Local	Direct	Probable	**Moderate Positive**
	No Mitigation	Temporary employment prospects in the area	Construction	Short Term	Low	Local	Direct	Probable	**Moderate Positive**
	With Mitigation	Security concerns due to increased number of persons in areas	Construction and Operations	Long	High	Local	Direct	Probable	**Moderate Positive**
	No Mitigation	Security concerns due to increased number of persons in areas	Construction and Operations	Long	High	Local	Direct	Probable	**Moderate Positive**
	With Mitigation	Job creation permanent workforce	Operations and constructions	Long term	Moderate	Local	Direct	Probable	**Moderate Positive**
	No Mitigation	Job creation permanent workforce	Operations and constructions	Long term	Moderate	Local	Direct	Probable	**Moderate Positive**
	With Mitigation	Improved transport infrastructure and services	Operations	Long Term	Moderate	National	Direct	Highly Probable	**High Positive**
	No Mitigation	Improved transport infrastructure and services	Operations	Long Term	Moderate	National	Direct	Highly Probable	**High Positive**

Environmental Impact	Element	Impact	Project Phase	Duration	Magnitude	Extent	Type	Probability	Significance
	With Mitigation	Employment and local procurement.	Construction and Operations	Long Term	Moderate	Local	Direct	Probable	**Moderate Positive**
	No Mitigation	Employment and local procurement.	Construction and Operations	Long Term	Moderate	Local	Direct	Probable	**Moderate Positive**