# ENVIRONMENTAL ASSESSMENT SCOPING REPORT

## APP- 004782

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| INFORMATION SHEET | | |
|---|---|---|
| **Project Name** | : | URBAN LAND CONSOLIDATION AND REZONING, RUNDU TOWNLANDS, RUNDU LOCAL AUTHORITY, KAVANGO EAST REGION |
| **Type of Project** | : | **ENVIRONMENTAL ASSESSMENT SCOPING REPORT** |
| **Project Location** | : | ERF 1527, Elizabeth Nepembe Street<br>Rundu<br>Kavango East Region |
| **Competent Authority** | : | Rundu Town Council<br>Private Bag2128<br>RUNDU<br>TEL:066 266 400<br>FAX: 066 256 718 |
| **ECC Application No.** | : | APP-004782 |
| **Report Date** | : | SEPTEMBER 2024 |
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## ABBREVIATIONS

| | | |
|---|---|---|
| BAT | - | Best Available Technology |
| BID | - | Background Information Documents |
| RTC | - | Rundu Town Council |
| EC | - | Environmental Clearance |
| ECC | - | Environmental Clearance Certificate |
| EIA | - | Environmental Impact Assessment |
| EIAR | - | Environmental Impact Assessment Regulations |
| EMA | - | Environmental Management Plan |
| EMP | - | Environmental Management Plan |
| IAPs | - | Interested and Affected Parties |
| MEFT | - | Ministry of Environment, Forestry and Tourism |
| MHSS | - | Ministry of Health and Social services |
| MURD | - | Ministry of Urban and Rural Development |
| MWALR | - | Ministry of Water Agriculture and Land Reform |
| NamRA | - | Namibia Revenue Agency |
| NHC | - | National Heritage Council |
| NSA | - | Namibia Statistics Agency |
| NSI | - | Namibia Standards Institute |
| POS | - | Public Open Space |
| PPE | - | Personal Protective Equipment |
| SAREP | - | Southern Africa Regional Environmental Programme |
| SHE | - | Safety, Health and Environment |
| URPB | - | Urban Regional Planning Board |
| KER | - | Kavango East Region |

| Term | Expansion |
|---|---|
| **Assessment** | The process of collecting, organising, analysing, interpreting and communicating information relevant to decision making |
| **Cumulative Impacts** | In relation to an activity, means the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area. |
| **Disposal** | Means the discharge, depositing, dumping, spilling, leaking, placing of waste on or at any premises or place set aside by the RTC for such purposes, and "dispose" shall have a similar meaning. |
| **Environment** | As defined in the Environmental Assessment Policy and Environmental Management Act - "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values". |
| **Environmental Clearance Certificate (ECC)** | A certificate and associated conditions issued by the Environmental Commissioner in terms of the Environmental Management Act, authorizing a listed activity to be undertaken. |
| **Environmental Impact** | A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space. |
| **Environmental Management Plan (EMP)** | A working document which contains site project specific plan developed to ensure that environmental management practices to eliminate and control environmental impacts are followed during the developmental phase of that site, project and or facility and would normally consist of construction phase, operational phase and decommissioning phase. |
| **General Waste** | Means any waste generated on or at any premises used –<br>(a) for residential purposes, and includes agricultural properties and small holdings; or<br>(b) as public and/or private facilities and institutions but does not include garden waste (unless specifically determined or authorised by RTC subject to any conditions or limitations that maybe imposed), bulky waste, business waste, builder's waste, industrial waste, hazardous waste and health care risk waste |
| **Hazardous Waste** | Means -<br>(a) any waste containing, or contaminated by, poison;<br>(b) any corrosive agent;<br>(c) any flammable substance having an open flash-point of less than 90 degrees Celsius;<br>(d) an explosive or radioactive material and substance;<br>(e) any chemical or any other waste that has the potential even in low concentrations to have a significant adverse effect on public health or the environment because of its inherent toxicological, chemical, ignitable, corrosive, carcinogenic, injurious and physical characteristics;<br>(f) any waste consisting of a liquid, sludge or solid substance, resulting from any manufacturing process, industrial treatment or the pre-treatment for disposal purposes of any industrial, which in terms of any law, order or directive relating to drainage and plumbing may not be discharged into any drain or sewer;<br>(g) the carcass of a dead animal; and<br>(h) any other waste which may be declared as such by RTC or in terms of any other applicable law |
| **Household Hazardous Waste** | Means:<br>any waste, excluding garden waste generated as a result of housekeeping, maintenance or repair activities on or at any premises, or accumulated, stored or deposited on such premises,<br>(a) used for residential purposes, and includes agricultural properties and small holdings; or<br>(b) as public and/or private facilities and institutions which by reason of its nature, composition, toxicity, type, quality, quantity or volume causes or may cause a nuisance, public health risk or pollution. |
| **Industrial Waste** | Means any waste generated as a result of business, commerce, trade, wholesale, retail, professional, manufacturing, maintenance, repair, fabricating, processing or dismantling activities, but does not include general waste, garden or bulky waste, builder's waste, business waste, hazardous waste or health care risk waste. |
| **Non-compliance** | Issues that are in direct non-compliance with the requirements, commitments and/or management measures as approved in the EMP. |
| **Pollution** | Means any change in the environment caused by –<br>(a) any waste, substance or matter; or<br>(b) noise, odour, dust or heat, emitted from or caused by any activity, including the storage or treatment of any waste, substance or matter, building and construction, and the provision of any service, whether engaged in by any person or an organ of state if that change has an adverse effect on public health or well-being or on the composition, resilience and productivity of a natural or managed ecosystem (both short term and long term), or on material useful to people, or will have such an adverse effect in the future. |

| | |
|---|---|
| **Recyclable Waste** | Means waste which has been separated from the waste stream, and set aside for purposes of recovery, reuse or recycling |
| **Recycling** | Means the process or act of subjecting used or recovered waste materials, products or by-products to a process or treatment of making them suitable for beneficial use and for other purposes, and includes any process or treatment by which waste materials are transformed into new products or base materials in such a manner that the original waste materials, products or by-products may lose their identity, and which may be used as raw materials for the production of other goods or materials, but excluding the use for purposes of energy generation, and "recycle" shall have a similar meaning. |
| **Refuse Container** | Means any receptacle or other container, including a skip, stipulated or approved by the RTC from time to time, whether supplied by the Council or not, for the storage, depositing and disposal of waste |
| **Re-use** | Means the process or act of sorting and separating, at the point of origin, different materials found in any waste in order to promote and facilitate recovery, reuse and recycling of materials and resources, and "separate" shall have a similar meaning. |
| **Separation** | Means the process or act of sorting and separating, at the point of origin, different materials found in any waste in order to promote and facilitate recovery, reuse and recycling of materials and resources, and "separate" shall have a similar meaning |
| **Storage** | Means the temporary storage or containment of any waste for a period of less than 90 days after its generation and prior to its collection for recovery, reuse, recycling, treatment or disposal. |
| **Waste** | Means any substance or matter whether solid, liquid or any combination thereof, irrespective of whether it or any constituents thereof may have value or other use, and includes –<br>(a) any undesirable, rejected, abandoned or superfluous matter, material, residue of any process or activity, product, by-product;<br>(b) any matter which is deemed useless and unwanted;<br>(c) any matter which has been discarded, abandoned, accumulated or stored for the purposes of discarding, abandoning, processing, recovery, reuse, recycling or extracting a usable product from such matter; or<br>(d) products that may contain or generate a gaseous component |
| **Waste Disposal Site** | Means any facility or site which receives waste for treatment or disposal, and which is authorised to accept such waste, or if such a facility is an incinerator, subject to the provisions of regulation 20, and any possible registration or other permission as may be required by any other applicable law. |

# 1. BACKGROUND INFORMATION

## 1.1 Introduction

The promoter whose particulars are presented in **Table 1** below, has appointed Ekwao Consulting (Ekwao) to attend to its application for an Environmental Clearance Certificate (ECC) with the Ministry of Environment, Forestry and Tourism (MEFT). The ECC is required to undertake urban land rezoning which is a listed activity in terms of the Environmental Management Act (EMA).

**Table 1**: Contact Details of the Promoter

| Company Details | |
|---|---|
| **Name of the ECC Applicant** | D O Industrial Trading Close Corporation<br>(DOI for short) |
| **Registration Numbers** | CC/2013/07081 |
| **Company Representative** | Fernande Docky Olavi (Mr) |
| **Designation** | Managing Member |
| **Address** | Box 2010<br>RUNDU<br>Namibia |
| **Contact Details** | Mobile: 081 280 0644<br>Fax: 085 280 0644<br>Email: dockyolavi@gmail.com |
| **Physical Address** | Erf 214<br>Safari Street<br>RUNDU<br>Kavango East Region<br>Namibia |

## 1.2 Brief from the Applicant

Conduct an EIA in terms of the Environmental Management Act in order to obtain an ECC to permit the statutory town planning processes which entails activities shown in **Table 2** below.

**Table 2:** Town Planning Process Activities

| Activity | Expansion |
|---|---|
| **Close POS**<br>**Subdivision**<br>**Consolidation**<br>**Rezoning**<br>**Surveying** | 1. **Permanent Closure of Remainder Erf 1527, Ext 5, Erven 2867 to 2868 Rundu Ext 9 as 'Public Open Space''.**<br>2. **Consolidation of Remainder Erf 1527, Rundu Extension 5 with Erf 2867, Rundu Ext 9 into Erf 'X' Rundu Ext 5.**<br>3. **Rezoning of Consolidated Erf 'X' from 'Public Open Space' to 'Hospitality' with a Bulk of 1.0 for the Development and Operation of a Guesthouse.**<br>4. **Rezoning of Erf 2868 from 'Public Open Space' to 'Single Residential' with a Density of 1:300.**<br>5. **Consent Uses for a Tourist Facility, a Resort Shop and a Place of Entertainment.** |

## 1.3 Land Details

The details of the land offered to DIC, the developer are presented in **Table 3**. Based on Council Resolution the three erven will be sold to DIC once all statutory processes (closure of POS, rezoning, consolidation and surveying) including conducting an EIA and obtaining an ECC.

**Table 3:** Land Details

| Property Details | |
|---|---|
| **Situate** | At the intersection of Fish Eagle Street, Usivi Road and Elizabeth Nepembe Street |
| **Land Owner** | Rundu Town Council |
| **Registration Division** | 'B' |
| **Magisterial District** | Rundu |
| **Local Authority** | Rundu Town Council |
| **Regional Authority** | Kavango East Regional Council |
| **Land Size** | ±6 000 $m^2$ (combined) |
| **Current Use** | Vacant |
| **Services** | Water<br>Electricity<br>Street roads<br>Sewage reticulation<br>Waste removal } Available and functional |
| **GPS Coordinates** | -17.913727 S 19.759546 E |
| **Erven /Land** | Current Zoning |
| **Erf 1527, Extension 5** | Public Open Space |
| **Erf 2867, Extension 9** | Public Open Space |
| **Erf 2868, Extension 9** | Public Open Space |

## 1.4 Terms of Reference

To conduct an EIA in terms of the provisions of EMA and obtain an Environmental Clearance Certificate (ECC) for the rezoning of the land pieces in Table 2.

## 1.5 Project Screening

A background information document (BID) on the project was prepared and presented to MEFT for screening purposes. MEFT designated the application the number of **APP-004782**, and advised Ekwao Consulting to prepare and submit these reports:

- Environmental Scoping Assessment;
- Environmental Management Plan (EMP), and
- Public Consultation Process

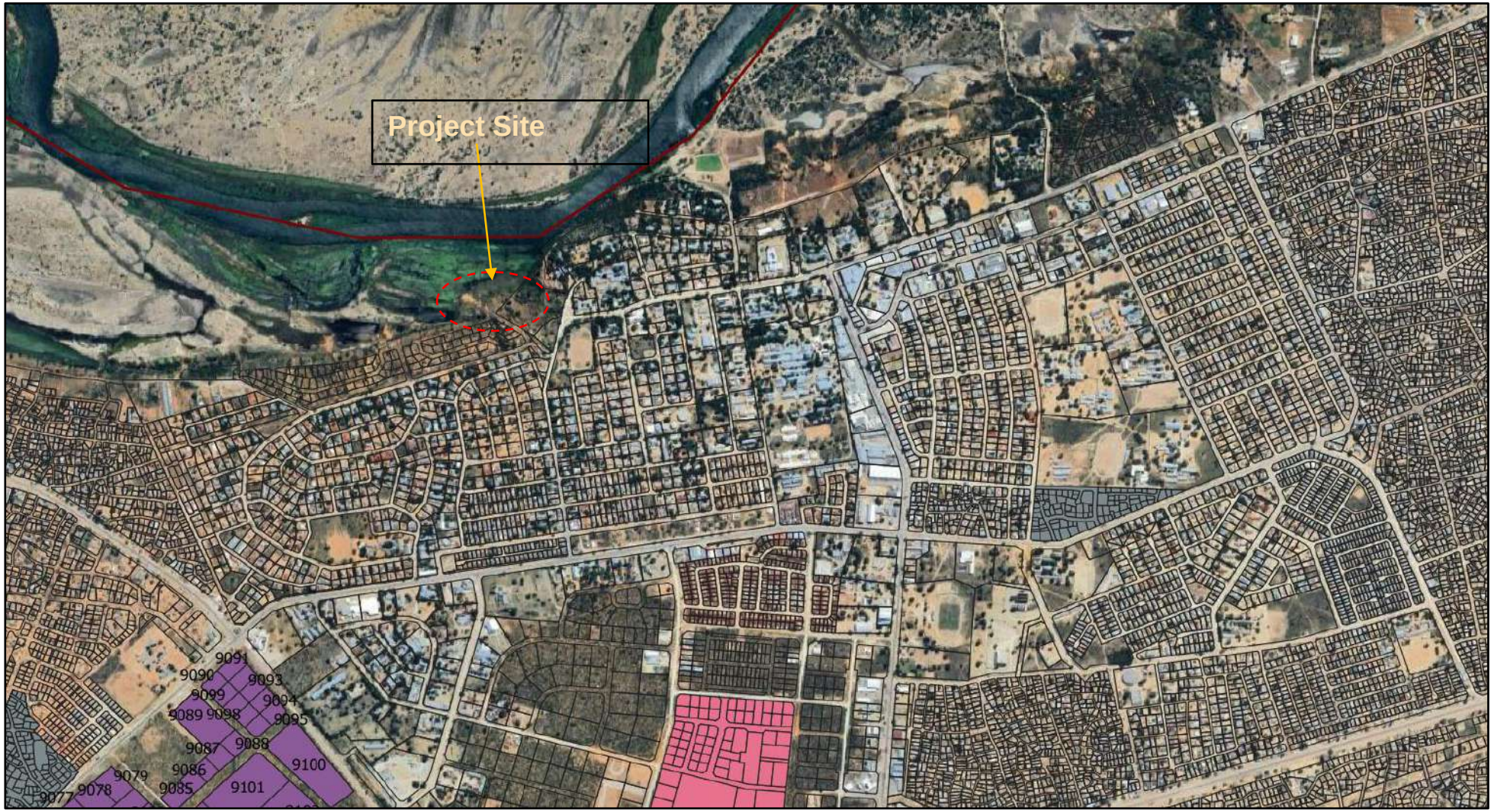


Figure 1: Project Site – Local Context


Figure 2: Project Site - Showing Erven Numbers


Figure 3: Project Site - Google Map

## 1.6 Triggered Activities

A brief review of the Environmental Impact Assessment Regulations (EIAR), as gazetted in the (Gazette No. 4878 of February 2012), has shown the listed activities triggered by the envisaged project as tabulated in **Table 4,** below.

**Table 4:** Triggered Activities

| Activity Category | Expansion |
|---|---|
| **Energy Generation, Transmission and Storage Activities** | **Paragraph 1(b)**<br>The construction of facilities for the transmission and supply of electricity.<br><br>**Remarks**: The proposed development has to be connected to the electricity supply which exists already however, the promotor may wish to consider use of alternative energy sources such as solar power) |
| **Waste Management, Treatment, Handling and Disposal Activities** | **Paragraph 2.3**<br>Temporary storage of waste generated during construction activities such as site preparation, etc.<br><br>**Remarks:** The site is fully serviced with street roads, bulk services, water reticulation, sewerage reticulation, etc. all available and functioning.<br><br>The promoter has to supply suitable waste bins for temporary waste storage during the development of the project. |
| **Forestry Activities** | **Paragraph 4**<br>Clearing of vegetation during construction activities.<br><br>**Remarks:** The site is on the banks of the Kavango River and therefore vegetated with plants and trees that commonly occur along the river. |
| **Land Use and Development Activities** | **Paragraph 5.1(a)**<br><br>Rezoning of land.<br><br>**Remarks:** The land is being rezoned from **POS** to **Business** to allow the development of a hospitality establishment (hotel with associated infrastructure) |
| **Water Resource Development** | **Paragraph 8.6**<br>Construction of any industrial or domestic wastewater pipeline system - in this case, extending water supply and sewerage networks to the proposed development.<br><br>**Comment:** Existing infrastructure is considered adequate and no additional or expansion will be required. |
| **Hazardous Substance Treatment, Handling and Storage** | **Paragraph 9.1**<br>Temporary storage of hazardous products during the construction phase.<br><br>**Remarks**: No fuel will be stored on site during construction, but use will be made of earthmoving machinery and equipment which use hydrocarbon products. |
| **Infrastructure** | **Paragraph 10.1**<br>The construction of water or other bulk supply pipelines to the proposed development. |

## 1.7 The Scoping Assessment

This scoping assessment was conducted in order to gather adequate information on the land being rezoned. Information was gathered from officials in the town planning section of RTC, field inspection of the land pieces to be rezoned in order to determine any potential impacts, both negative and positive, which the triggered activities would bring to bear on the bio-physical and socio-economic environments. Furthermore, these aspects have been considered in the scoping assessment:

- Applicable legislations to the study;
- Public consultation process;

- Methodology followed to assess identified impacts;
- Any sensitivity of the receiving environment, and
- Potential ecological, environmental and social impacts.

In the EMP section of the report, practical mechanisms have been recommended on how negative impacts associated with the installation of services can be eliminated, avoided, reduced or sufficiently mitigated to have no harmful effects. The implementation of the EMP by the proponent will ensure that any construction activity that may be required is carried out in a manner that is environmentally sustainable and socially acceptable.

Finally, the gathered information is presented to the office of EC in order to assist the EC to make an informed decision on whether to grant an ECC with conditions, to grant the ECC without conditions or to reject the application for the ECC altogether.

## 1.8 Assumptions and Limitations

This scoping report is based on a several assumptions and is therefore subject to certain limitations that are summarised here:

- The information provided to **Ekwao** (EIA Consultant) is assumed to be accurate and correct.
- The assessment has been confined to three undeveloped erven: 1527, 2867 and 2868 as depicted in Fig. 2 and to surrounding areas.
- All services (street roads, water, sewerage, electricity, etc.) have been installed and assumed to be functional and adequate to cater for the proposed development. Hence impacts associated with construction activities for the provision of such services are not expected to occur.
- Since detailed drawings for the proposed hospitality development are unavailable at the time of conducting the EIA, the precautionary principle has been adopted by overstating the negative impacts and understating any potential benefits to the socio-economic environment.
- It has been assumed that the developer will in good faith implement the mitigation measures recommended in the EMP, commit sufficient resources to the project and to hire suitably qualified personnel for any construction work that may be required. It is further assumed that all construction work will be carried out in a professional manner by complying with all local authority standards and bylaws.

Notwithstanding the above, **Ekwao** is confident that these assumptions and limitations do not compromise the overall findings of the report.

Figure 4: Lookout Site Adjacent the Street Road Intersections

## 2. SITE ASSESSMENT AND DESCRIPTION

### 2.1 Project Location

The project site is located in the bustling town of Rundu and situated on the banks of the Kavango River at the intersection of three street roads - Elizabeth Nepembe Street, Usivi Street and Eagle Fish Street as more or less shown in Figures 1 to 3.


Figure 5: View to the West from the Lookout at the Project Site

Figure 6: View to WE from the Lookout Spot

Figure 7: Standing on Erf 2868 Looking NE

**West:** The proposed site is set on the banks of the Kavango River where the river makes a gentle curve

towards the northeast providing stunning view of the river and surroundings (Figures: 3 and 4). The drop in elevation from the natural street level where the lookout spot (observation site) is situated to the water level in the river is ±15 meters.

**East:** There are three street roads intersecting to the south of the site (Fig. 8). Elizabeth Nepembe leading from the south, Fish Eagle from the north and Isuvi Road from the CDB. Elizabeth Nepembe and Isivi are tarred roads while Fish Eagle which runs along the river in the northern direction is a gravel road.

Figure 8: Street Road South of the Site

**Northeast**: The view to the northeast is as depicted in Fig. 7, with the Kavango River Lodge the immediate neighbor - abutting the subject Erf 1527 to the southeast.

## 2.2 Available Services and Infrastructure

### 2.2.1 WATER SUPPLY

Potable water is available on site. According to RTC town planner officials, available water is adequate to cater for the need of proposed development. Impacts associated with water installation do not apply to the development.

### 2.2.2 SEWERAGE

An underground sewerage network consisting of sewerage pipes, inspection manholes, pump stations and oxidation ponds has been installed on the project site. No impact with respect to excavation will apply.

Figure 9: Sewage Inspection Manhole South of Erf 1527

### 2.2.3 ELECTRICITY SUPPLY

Electricity reticulation network is available on site from the local supplier, Nored Electricity. The development will therefore be expected to connect to the existing power or to install alternative energy supply, i.e. solar power.

Figure 10: Street Light on Erf 2868

### 2.2.4 ACCESS ROAD

Tarred street roads are serving the project site as depicted in Fig. 8. Impacts associated with road construction do not apply to the project.

### 2.2.5 COMMUNICATION INFRASTRUCTURE

Communication services in the form of mobile network by MTC and land based network by Telecom Namibia are available in the town. Connection of the development to existing infrastructure is not expected to involve any major construction activity.

### 2.2.6 REFUSE AND WASTE REMOVAL AND DISPOSAL

RTC is providing solid waste removal from residential and business premises in town and disposal therefor to its landfill site.

Figure 11: Waste & Building Rubble around the Project Site

### 2.2.7 STORM WATER MANAGEMENT

The elevation drop from the street level down to the water level in the river is approximately 15 meters. The natural drainage of rainwater from the road streets east of the development is therefore to the west towards the project site. A structural engineering solution has to be provided on the east of the site to handle storm water challenges and to prevent potential erosion during severe rainfall in the area.


Figure 12: Deep Channels Running through the Site

Figure 13: Erosion - Access Road Damaged by Storm Water

## 2.3 Other Considerations

### 2.3.1 NEED FOR THE DEVELOPMENT

The proposed development will involve the establishment of a new hospitality infrastructure – a hotel or guesthouse that will create employment opportunities and enhance tourism activities in town. At present the land is vacant and zoned as a POS. For RTC to develop a public park on the land will cost millions of Namibia Dollars which RTC does not have because of competing interest and priorities including providing housing and other amenities.

### 2.3.2 **CONSIDERATION FOR ALTERNATIVES**

Three alternatives have been considered for the development which are:

- the 'no-go option', and
- 'get another land piece elsewhere'.

#### 2.3.2.1 THE NO-GO OPTION

The developer is buying the vacant land to establish a hotel and related services and infrastructure. Under normal circumstances, RTC was expected to develop a public park on the piece of land. However, this is not always possible because of the limited resources availed to the local authorities by central government. Where a potential investor identifies a commercial opportunities and is willing to shoulder the cost involved in rezoning, the local authority should support and encourage such an initiate.

With the 'no-go option', the status quo will remain – the potential impacts associated with the proposed development, both positive and negative, will not occur. The land would remain as is and the potential to realize an investment running into millions of Namibia Dollars is lost to the local authority. This option is not advisable.

#### 2.3.2.2 GET ANOTHER PIECE OF LAND ELSEWHERE

One of the biggest challenges faced by several local authorities especially those bordering communal lands such as RTC, is securing land for urban development. This problem is exacerbated by the perception that the compensation paid to the communal landowners was inadequate, hence the reluctance of the villagers to offer their land to the ministry of Urban and Rural Development to build townships.

The plan of the developer to use its own resource (capital) to purchase the land, have it rezoned and obtain all statutory requirements should be supported. The option to get land elsewhere is therefore not supported. In fact, there is no guarantee that suitable land will be secured anywhere else.

# 3. THE LEGAL FRAMEWORK

## 3.1 Introduction

In this section, the relevant legislation, policies and guidelines that are applicable to the proposed development are presented. The overall objective is to acquaint the proponent and IAPs of the requirements and expectations as laid out in such legal instruments that have to be fulfilled in order to undertake the envisaged activity.

## 3.2 The Laws

The Republic of Namibia has five tiers of law and a number of policies relevant to environmental assessment and protection which include the following:

- The Namibia Constitution;
- Statutory Law;
- Common Law;
- Customary Law, and
- International Law.

Table 5: Legislations

| Legislation/Regulations | Applicable Sections/Expansions |
|---|---|
| The Constitution of Namibia | It is the supreme law of Namibia:<br>- Encourages wise and sustainable use of natural resources.<br>- Promotes the welfare of the people.<br>- Calls for adoption of policies that maintains the ecosystem.<br>- Incorporates a high level of environmental protection.<br>- Encourages the use of natural resources in a sustainable manner for the benefit of current and future generation. |
| Environmental Management Act<br><br>(Act No. 7 of 2007) | - The Act defines what the environment is<br>- Provides assessment procedures to be followed and the activities that require an EIA.<br>- The Act provides a procedure for environmental assessments as indicated under Part VII and Part VIII, which is set out to:<br>  o better inform decision makers and promote accountability in decisions taken;<br>  o strive for public participation and involvement of all sectors of the Namibian community in the environmental assessment process;<br>  o take into account the environmental costs and benefits of proposed policies, programmes and projects;<br>  o take into account the secondary and cumulative environmental impacts of policies, programmes and projects; and<br>  o promote sustainable development in Namibia, and especially ensure that a reasonable attempt is made to minimize the anticipated negative impacts and maximize the benefits associated with the development. |
| Environmental Management Act Regulations Gazetted in 2012 | - Commencement of the Environmental Management Act,<br>- List activities that requires an ECC.<br>- Provide Environmental Impact Assessment Regulations.<br>- Activity 5.1 (d) Infrastructure. The rezoning of land from use for nature conservation or zoned open space to any other land use |
| Draft Procedures and Guidelines for conducting EIAs and compiling EMPs (2008) | Part 1, Stage 8 of the guidelines states that if a proposal is likely to affect people, certain guidelines should be considered by the proponent in the scoping process. |

| Legislation/Regulations | Applicable Sections/Expansions |
|---|---|
| Water Resource Management Act of Namibia (Act No. 24 of 2004) | ➢ Provides for the management, development, protection, conservation, and use of water resources;<br>➢ Provides for the establishment of Water Advisory Council, the Water Regulatory Board and the Water Tribunal; and to provide for incidental matters. |
| Local Authorities Acts (Act No. 23 of 1992, Govt Notice No. 116 of 1992) | ➢ Define the powers, duties and functions of local authority councils<br>➢ The Act prescribes the manner in which a town or municipality is managed by the Town Council or Municipality Council.<br>➢ The development must comply with the provisions of the Local Authority Act. |
| National Heritage Act (Act No. 27 of 2004) | ➢ Makes provision for the developer to identify and assess any archaeological and historical sites of significance. The existence of any such sites should be reported to the National Heritage Council as soon as possible.<br>➢ The Council may serve notice that prohibits any activities as prescribed within a specified distance of an identified heritage/archaeology site. |
| Hazardous Substances Ordinances (No 14 of 1974) | The Ordinance applies to the manufacture, sale, use, disposal and dumping of hazardous substances, as well as their import and export and is administered by the Minister of Health and Social Welfare. Its primary purpose is to prevent hazardous substances from causing injury, ill-health or the death of human beings. |
| Atmospheric Pollution Prevention Ordinance (No. 11 of 1976) | Governs the control of noxious or offensive gases and prohibits anyone from carrying on a scheduled process without a registration certificate in a controlled area. The registration certificate must be issued if it can be demonstrated that the best practical means are being adopted for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process |
| Public and Environmental Health Act | ➢ Provides a framework for a structured more uniform public and environmental health system, and for incidental matters.<br>➢ Deals with Integrated Waste Management including waste collection disposal and recycling; waste generation and storage; and sanitation.<br>➢ Section 111 requires local authorities to take measures for the prevention of water pollution.<br>➢ Section 119 provides that 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.<br>➢ Section 120 requires local authorities to take measures for maintaining their district at all times in a clean and sanitary condition and for preventing the occurrence therein of, or for remedying or causing to be remedies, any nuisance or condition liable to be injurious or dangerous to health.<br>➢ Various forms of nuisances are set out in section 122. |
| Pollution Control and Waste Management Act | ➢ States that no person shall discharge or cause to be discharged any pollutant to the air from a process except under and in accordance with the provisions of an air pollution licence issued under section 23.<br>➢ Provides for procedures to be followed in licence application, fees to be paid and required terms of conditions for air pollution licences.<br>➢ Stipulate that any person who sells, stores, transports or uses any hazardous substances or products containing hazardous substances shall notify the competent authority, in accordance with sub-section (2), of the presence and quantity of those substances.<br>➢ Provides for emergency preparedness by the person handling hazardous substances, through emergency response strategies. |
| Soil Conservation Act Act 76 of 1969 | ➢ The Act strives to consolidate and amend the law relating to the combating and prevention of soil erosion, the conservation, improvement and the manner of use of the soil and vegetation and the protection of the water sources.<br>➢ The proposed activity should ensure that soil erosion and soil pollution are avoided during the construction and operation phases. |

| Legislation/Regulations | Applicable Sections/Expansions |
|---|---|
| Forestry Act (Act No. 12 of 2001) and Forest Regulations of 2015 | ➢ To provide for the establishment of a Foretsry Council and the appointment of certain officials, to consolidate the laws relating to the management and use of forestry fires, to repeal the Preservation of Bees and Honey Proclamation, 1923 (Proclamation No. 1 of 1923 Preservation of Trees and Forests Ordinance, 1952 and to deal with incidental matters.<br>➢ Protected trees and plants species as per the Forest Act may not be removed without a permit from MEFT. |
| Roads Ordinances17 of 1972 | Section 3.1 deals with the width of proclaimed roads and road reserve boundaries.<br>Section 27.1 is concerned with the control of traffic on irban truck and main roads.<br>Section 36.1 regulates rails, tracks, bridges, wires, cables, subways or culverts across or under proclaimed roads<br>Section 37.1 deals with infringements and obstructions on and interference with proclaimed roads. |
| Town Council Bylaws | RTC is a relatively new local authority and is still developing its bylaws. For the proposed facility the following bylaws will be applicable:<br>➢ Waste handling and disposal<br>➢ Building plans approval<br>➢ Environmental Health bylaws<br>➢ Bylaws related to storm water management<br>➢ Traffic Regulations |

# 4. DESCRIPTION OF THE RECEIVING ENVIRONMENT

The bulk of the study information presented in this section was gathered through various sources such as desk studies, data from previous work done in the same location, physical site investigations; discussion with town planning staff of RTC, taking of photographs and observation of the immediate surrounds. Only those elements of the environment that have a direct bearing on the impact assessment process of the proposed development are discussed. The severity of the potential impacts is largely determined by the state of the receiving environment.

## 4.1 Climatic Conditions

### 4.1.1 RAINFALL

The project site is in the town of Rundu, one of the locations which receive good rainfall in Namibia. Rainfall data over a period of 60 years are available for most of the project site (Mendelsohn, el, at. 2004) which indicate that most precipitation is received between the months of November and April each year often peaking during January and February (Fig. 14)

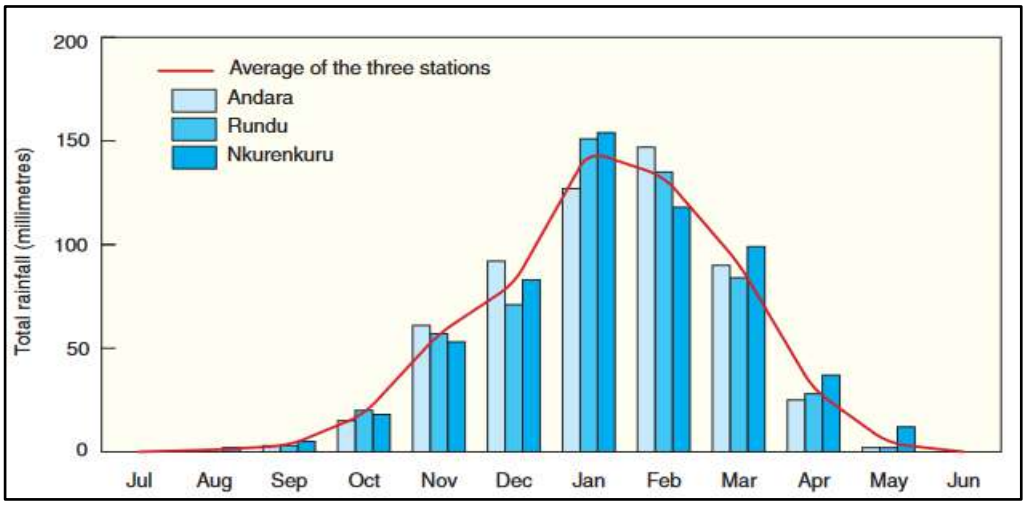


Figure 14: Rainfall (Source Mendelsohn)

**Potential Impacts:**

It is advisable to schedule construction activities to take place outside the rainy period. This is even more critical for this specific project which is on the banks of the Kavango River. The risk of erosion, contamination of soil, pollution of surface water and groundwater is far greater during the wet periods.

### 4.1.2 TEMPERATURES

The project site has a warm climate with temperatures increasing rapidly from the coldest months of June and July to the warmest month of October. Average maximum temperatures are above 30 C in all months except May, June and July (Mendelsohn, el, at. 2004). During the winter which is between June and August, temperatures seldom get close to freezing point (Fig. 15). Frost occurs very rare and only in valleys. The average is below 10.

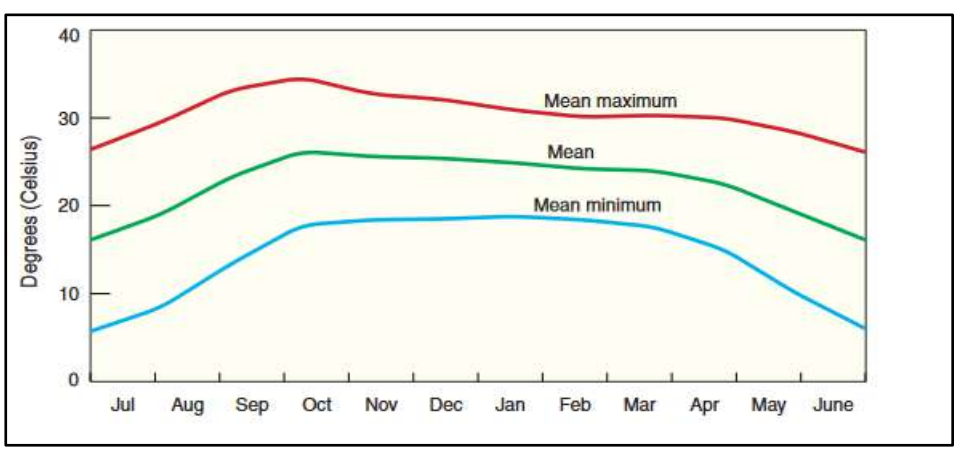


Figure 15: Temperature around Rundu

### 4.1.3 **WIND**

The predominant wind direction is from east, between north-east and south. Wind speed are generally low, rising from averages of about 3 km/hr in the mornings to about 12 km/hr in the early afternoon, before dropping again to about 3 km/hr in the evening (Mandelsohn, el at. 2004). Morning and evening winds are strongest in October and November, while afternoon winds are lightest in December and January. In most months, calm conditions are known to prevail.

## 4.2 **Vegetation**

The vegetation in the region is divided into four main types: broad leafed deciduous woodland, shrublands, grasslands and riverine. The distribution is primarily controlled by the prevailing climatic conditions, nature of soil that support the vegetation, decreasing rainfall northwards and human activities as depicted in Fig.16.

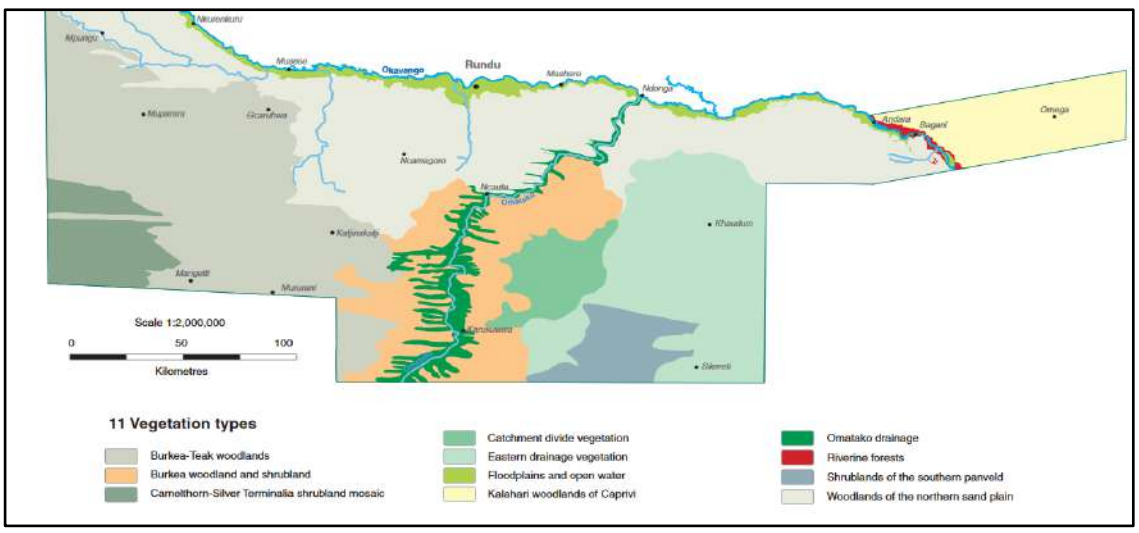


Figure 16: Vegetation in the Kavango Region

Figure 17: Vegetation around the Project Site

Figure 18: Looking North - Vegetation

## 4.3 Geology

The project region falls within the Kavango sub-basin which forms part of the greater Kalahari basin which covers the northern Namibia, Botswana and southern Angola. The Kalahari Group blankets the whole region but there are few areas where dolomitic rocks outcrops along the Kavango River near Rundu and between Mukwe and Bangani and along the Nhoma River drainage within the Kaundum Park and at the border between the Kavango and Caprivi regions near Andara.


Figure 19: Rock Outcrop at the Site

## 4.4 Surface and Groundwater

The main surface water source in the region is the perennial Kavango River with approximately 50% of the residents getting water from the river (Lund, 2002). For those residents away from the river, boreholes and dug wells are the main sources of water, supporting about 25% and 12% of the population respectively. Groundwater is used for domestic and livestock watering. About 10% of the Rundu urban residents are obtaining water from communal standpipes.

## 4.5 Soil Characteristics

Five major soil types are encountered in the Kavango Region with these scientific names: *Anthrosol*, *Arenosol*, *Calcisol, Fluvisol and Solenetz*. (*Hendelsohn et al., 2009*).

*Anthrosol* is soil that has heavily modified due to long term human activities such as dry cropping, irrigation, addition of organic waste or wet-field cultivation used to create paddy fields.

*Arenosol* is a sandy-textured soil with excessive permeability and low nutrients content such that agricultural use of such soils will require careful planning and management.

*Calcisol* is a soil type which has a substantial accumulation of secondary lime. It is common in calcareous parent materials and widespread in arid and semi-arid environments.

*Fluvisol* is a genetically young soil in alluvial deposits and found on river sediments, valleys, around lakes and tidal marshes. Soil horizon is often weakly developed but a distinct topsoil maybe present. Dry cropping with some water control is possible on fluvisol soils.

*Solenetz* soils are defined by an accumulation of sodium salts and readily displaceable sodium ions bound to soil particles in a layer below surface horizon. A significant accumulation of clay is also encountered in a layers below the surface horizon.

## 4.6 The Socio-Economic Environment

### 4.6.1 POPULATION

The data used in this section has been sourced from the National Population and Housing Census conducted by the Namibia Statistics Agency (NSA) in 2023. The Kavango East Region had a population of 218 421 as at September 2023 who live in six constituencies of the region (Fig.14). Approximately 118

632 people of the population (54%) live in Rundu Urban – one of the fastest growing towns in the country. Taking the population census of 2011 as a basis, KER had a population of 136 823 which means that the population of KER had grown by about 59% in a matter of about 12 years.

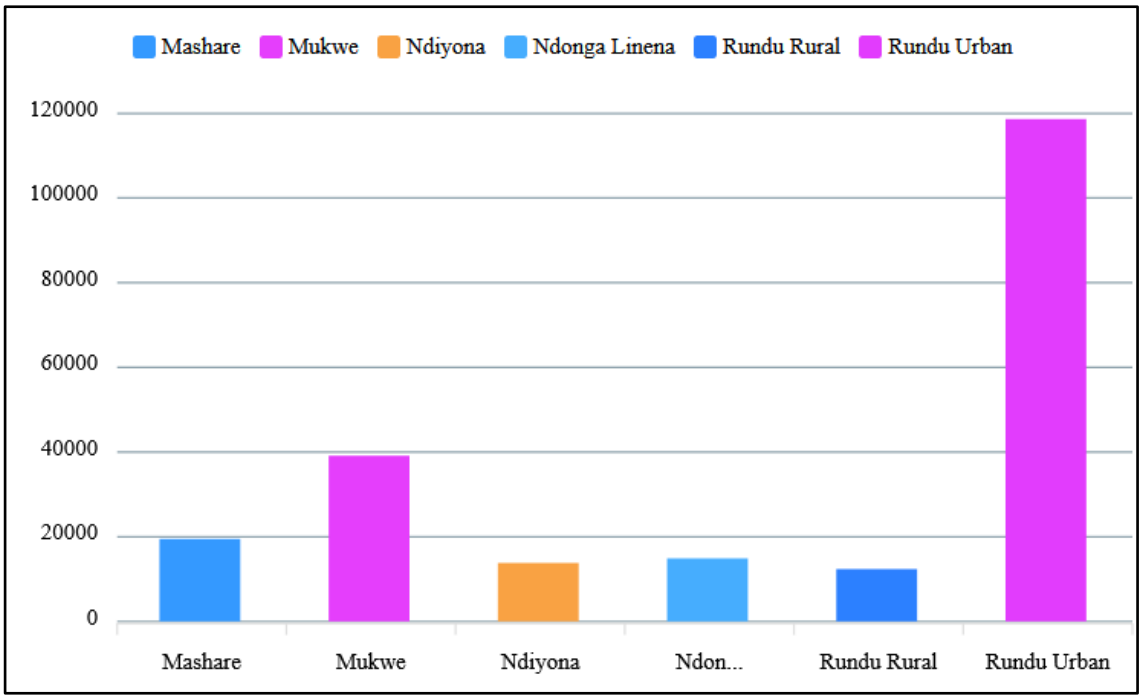


Figure 20: Population of Kavango East Region per Constituency

### 4.6.2 POPULATION AGE GROUP

Figure 21 is a graphic presentation of the population age groups by 2011 which shows that over twenty one years ago (2011), 25% of the population were in the 5-14 age band. Today, the youngest person in that age band would be 17 while the oldest would be 26 years old. In an ideal world, persons in this age group would be finishing tertiary education and entering the job market and expected to reside in urban localities. (The age group data for the 2023 population is not yet available).

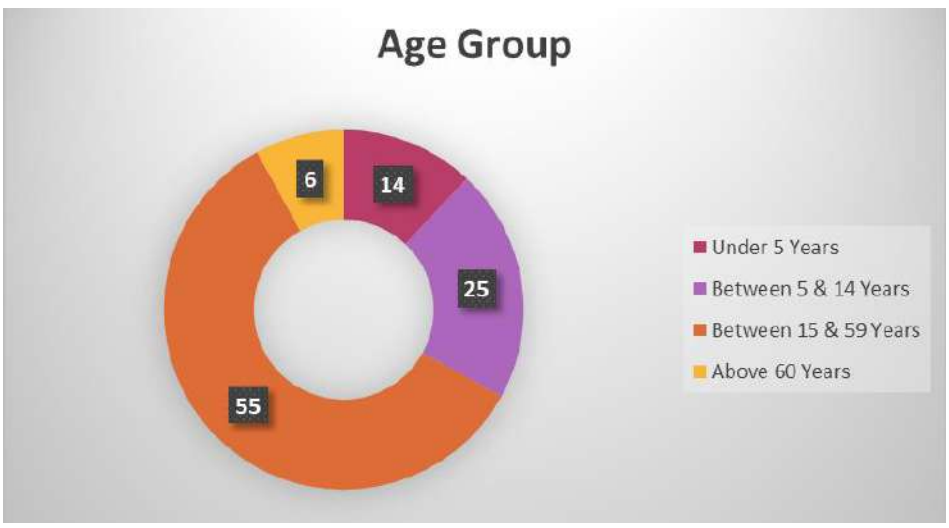


Figure 21: Population Age Group (2011)

### 4.6.3 EMPLOYMENT

Vital information on economic activities or employment status of all persons aged from 15 was gathered during the census conducted 2011 and classified as follows:

- employed
- unemployed

- economically inactive

Eleven years ago, the employment picture in the Kavango East Region was as depicted in Fig.18.

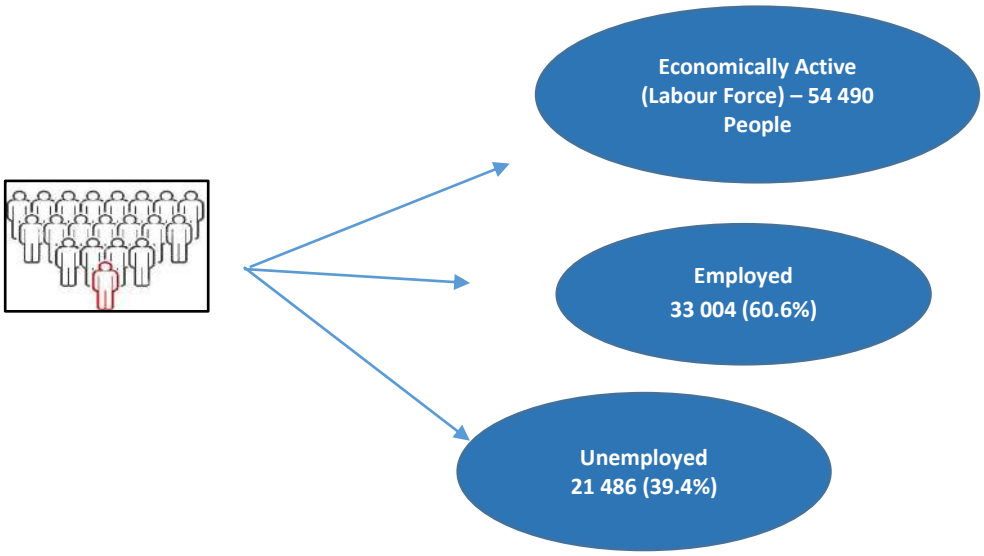


**Figure 22:** Economic Activities

# 5. IMPACT ASSESSMENT CRITERIA

## 5.1 Introduction

Described in this section are types of impacts, identification of impacts, assessment and the impact evaluation methodology applied. It is crucial that all possible significant impacts that may arise from the proposed activity (construction and operation) are identified, assessed, evaluated and mitigation measures recommended.

> In the context of this report, impact is defined as the changes in an environmental parameter that results from undertaking an activity. Such changes are the difference between the effects on an environmental parameter where the activity is undertaken compared to where the activity is not undertaken, and occur over a specific period and within a defined area. (EMA, 2007).

## 5.2 Types of Impacts

Different types of impacts may occur from undertaking an activity, which could be:

- Positive or negative impacts;
- Direct impact or primary impacts;
- Indirect impact or secondary impacts, and/or
- Cumulative impacts.

Direct impacts are those impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction phase of a development or activity and are therefore conspicuous evident and quantifiable.

On the other hand, indirect impacts are induced changes that may occur as a result of the activity or development.

Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.

## 5.3 Identification of Impacts

The identification of potential impacts associated with an activity on the environment should include impacts that may occur during the construction, operational and decommissioning phases. The process of identification and assessment of impacts could, inter alia, include the following:

- Determination of current environmental conditions in sufficient detail so that there is a baseline against which impacts are identified and measured.
- Determination of future changes to the environment that will occur if the proposed activity does take place.
- Understanding of the activity in great details so as to understand its consequences.
- Identification of significant impacts that are likely to occur if the activity is undertaken.

## 5.4 Evaluation and Assessment of Impacts

The potential impacts identified for the activity which has been described in this report, were evaluated and assessed in terms of the parameters presented in **Table 7**.

**Table 6:** Impact Assessment Methodology

| CRITERIA | EXPANSION |
|---|---|
| **Impact** | A description or list of the expected impacts |
| **Nature** (describes the type of effect of the impacts:) | **Positive** - the project will have a social or an economical benefit<br>**Neutral -** the project will have no effect<br>**Negative** - the project will have impacts that are likely to have harmful consequences |
| **Extent (**Describes the scale of the impact in terms of): | **Site Specific:** Confined within the project site boundary.<br>**Small:** Confined to the immediate environment of the site, i.e. radius of 1 km<br>**Medium**: Extends beyond the immediate environment of the site, i.e. radius of 5 km)<br>**Large:** Extends beyond the project site boundary and have a widespread effect. |
| **Duration (**Predicts the lifetime of the impact:) | **Temporary:** Impacts expected to endure for less than 1 year<br>**Short term**: Impact to endure between 2 and 5 years.<br>**Medium term:** Impact to endure between 5 and 15 years.<br>**Long term:** Impact to endure for over 15 years. Will only stop after the operational or running lifespan of the activity, either due to natural course or by human inference)<br>**Permanent:** Impact will persist beyond 15 years. |
| **Intensity (**Describes the magnitude (scale) of the impact) | **Very Low** : Affects the environment in such a way that the natural and/or social functions/processes are not affected .<br>**Low** : Natural and/or social functions/processes are slightly affected.<br>**Medium:** The natural and/ or social functions/processes are notably altered but continue albeit in a modified way.<br>**High:** The natural, cultural or social functions or processes are alerted to the extent that it will permanently cease |
| **Probability of Occurrence (**Describes the probability of the impact actually occurring): | **Improbable:** Not at all likely that impact will occur.<br>**Probable:** Distinct possibility for impact to occur.<br>**Highly Probable**: Impact will most likely to happen.<br>**Definite:** Impact will occur irrespective of any preventative measures. |
| **Degree of Confidence in Predictions (**Based on availability of information) | **Low** : Less than 40% - little confidence regarding information available<br>**Medium:** Between 40% and 80%% - Moderate confidence regarding information<br>**High:** Over 80% - great confidence regarding information available. |
| **Significance** | Significance = Consequence x Probability<br>(Consequence is a Function of Intensity x Spatial Extent and Duration) |
| **Significance Rating** | **Neutral (N):** A potential concern does exist, but it is found to have no impact when evaluated**.**<br>**Very Low (VL)**: The potential impact is very small, site specific, temporary and should not have any meaningful influence on the decision regarding the proposed activity.<br>**Low (L):** The potential impact will have a minor influence on the proposed development and/or environment. The impact may not have a meaningful influence on the decision regarding the proposed activity/development.<br>**Medium (M):** The potential impact will be experienced in the local and surrounding areas for the lifespan of the development and may result in long term changes. The impact can be minimised or improved by an amendment in the project design or implantation of effective mitigation measures.<br>**High (H):** The potential impact has a high magnitude and can be experienced regionally for at least the lifespan of the development or will be irreversible. The impact could have the 'no-go' proposition on portions of the development in spite of any mitigation measures that could be implemented.<br>**Very High (VH)**: The proposed activity should only be approved under special circumstances. |

For each impact, the EXTENT (spatial scale), MAGNITUDE (size or degree scale) and DURATION (time scale) are described. These criteria are used to ascertain the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The decision as to which combination of alternatives and mitigation measures to apply lies with the proponent, and their acceptance and approval ultimately with the relevant environmental authority.

The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. Such significance is also informed by the context of the impact, i.e. the character and identity of the receptor of the impact

## 5.5 Mitigation Measures

Once impacts have been identified or predicted for a particular activity, appropriate mitigation measures have to be established. Mitigation measures are the modification of certain activities in such a way so as to reduce the impacts on the environment. The objectives of mitigation are to:

- Find more environmentally sound ways of doing things;
- Enhance the environmental benefits of a proposed activity;
- Avoid, minimize or remedy negative impacts, and
- Ensure that residual negative impacts are within acceptable levels.

When mitigation is considered for certain impacts, it should be organized in a hierarchy of actions, namely:

- Avoid negative impacts as far as possible through the use of preventative measures
- Minimize or reduce negative impacts to 'as low as practicable' level, and
- Remedy or compensate for negative residual impacts that are unavoidable and cannot be reduced further.

The mitigation measures for those impacts that have been identified and assessed in the next chapter, are provided in the EMP report.

## 5.6 ASSESSMENT OF IDENTIFIED IMPACTS

Described in this section are those impacts that are likely to be induced by the proposed activity. The assessments are based on the methodology presented in the preceding section (**Table 7**) and will involve the impacts associated with these phases of the development:

- Planning and design phase;
- Construction phase, and
- Operational /Maintenance phase.

## 5.7 Planning and Design Phase

The planning stage for this project is primarily concerned with the following:

- Surveying
- Site stabilization, levelling and compacting,
- Engineering design for storm water management around the facility;
- Design for the access road to the proposed hotel/guesthouse,
- Design for the hotel/guesthouse and related infrastructure;
- Approval of drawings by RTC;

During this phase, there are minimal to nor environmental impacts involved. However, by the time when this phase has been accomplished, the promoters would have injected substantial capital into the development by paying for various professionals involved (e.g. town planner, land surveyor, EIA consultant, engineers needed to design the required infrastructure, payment for land to RTC, etc.) These are all positive benefits to the local economy that are derived from the envisaged development.

## 5.8 Construction Induced Impacts

The site is on the banks of the Kavango River where a drop in elevation of about 15 m is observed. An engineering solution to address slope instability is critical and should be provided. The bulk of the infrastructure (water supply, electricity, street roads, sewerage network, etc.) is available on site and minimal excavation will therefore be required to connect the development. An access road linking the facility to the street road will also be required. The impacts associated with this phase are described in this section. With these assessments the following assumptions are made:

- Civil construction activities are done by an experienced company which has suitable plants, equipment and personnel.
- All drawings will be prepared by professional civil engineer consultants preferably with practical knowledge of the local area.
- RTC will assume the role of a supervisor during the construction phase.
- A contractor's construction campsite will not be required to be established on site.

### 5.8.1 Habitat Destruction and Loss of Biodiversity

The proposed change in land use will permanently alter the natural landscape ultimately resulting in the displacement of any remaining existing vegetation and all kinds of faunal diversity. Whilst the removal of the natural vegetation in order to make way for the development is inevitable, this should be done in a responsible manner that takes into account the pristine nature of the site.

All excavations should be well planned and confined to sites that are clearly surveyed and demarcated. Where possible, mature trees should be preserved and incorporated in the envisaged development. This can be done at the planning stage where all mature trees are identified and indicated on the project layout.

During site clearance mature trees should be marked with danger tapes and retained. Overall, the impacts on the habitat destruction during the construction phase would be localized, of a short duration and can be effectively mitigated if the management actions proposed in the EMP are implemented.

The impacts associated with this environmental aspects have a significance rating of **Medium** prior to mitigation and **Low** post mitigation.

### 5.8.2 Impacts on Surface and Groundwater

Poor handling, storage and disposal of any hydrocarbon products (fuel, oil, lubricants, etc.) that may be used by construction vehicles and equipment as well as any hazardous materials (chemicals: thinners, solvents, paint, etc.) have the potential to cause soil pollution and contamination of both surface and groundwater, especially if the development is carried out during the rainy season. However, this can only happen in the event of a major fuel spill or excessive leak. The risks can also be minimised by appointing an experienced contractor.

When handling fuel, it is crucial to bear in mind the following regulations/requirements:

- Any fuel spill or leak in excess of 200 liters is considered an environmental incident which should be investigated and reported to the line ministry.
- A permit is required for the on-site storage of fuel in excess of 200 liters.

Pre-mitigation, the impacts are considered to have a **Low** significance rating and **Very Low** post-mitigation

### 5.8.3 Soil Disturbances

The characteristics of the site – on the banks of the river and sloping, soil erosion is likely to be encountered especially if construction is carried out during the rainy season. The clearing of vegetation will render the soil vulnerable to erosion. Judging from the existing neighbouring development (Kavango River Lodge) an engineering solution has to be provided to deal with the instances of storm water occurring around the project site.

The significance rating for this impact is **Low** with mitigation measures. If recommended measures are implemented the possibility of soil erosion occurring is **Very Low**.

### 5.8.4 NOISE AND VIBRATION DISTURBANCE

Sources of noise and vibration disturbance are likely to originate from construction vehicles (trucks, concrete mixers, compactors, welding tools, etc.) used in construction activities. Given the sensitivity of the site, i.e. in an urban environment – excessive idling, revving, and hooting can be annoying to the local residents. However, this impact can be mitigated by confining construction activities to working hours of 07h00 to 17h00.

The predicted noise level from the operation of the envisaged development and that of the adjacent highway is considered **Low.**

### 5.8.5 POTENTIAL DUST AND AIR POLLUTION

Dust is often generated when construction work that includes excavation and handling of dry soil materials is involved. Handling of construction materials such as sand, stones and cement when making concretes will also generate some dust.

Gaseous emissions in the form of smoke is released into the atmosphere by the construction vehicles and equipment which could lead to the pollution of the ambient air quality.

The potential impact with respect to dust and air pollution has a significance rating of **Low** without mitigation and **Very Low** with mitigation.

### 5.8.6 WASTE HANDLING - SOLID AND HAZARDOUS

Waste, especially solid waste will be generated during the construction period which could pose some threats to human and the natural environment. For this specific activity, typical solid waste during the construction is likely to consist of: empty cement bags, mixed concrete, bottles, broken glasses, plastics, carry bags, redundant PPEs. Used water and human excretes will also be included under this type of waste.

These type of waste will constitute hazardous waste: waste oil, used lubricants, old batteries, oil filters, scrap metals, scrapped machines, old tyres, paints, thinners as well as electrical products (cables, wires, bulbs, fuses, etc.). Such waste would arise from the use of construction vehicles, plants and equipment used in the construction operation.

Hazardous waste could have long term effects and it is very crucial that extreme care is exercised when handling, storing and using such products. Electrical work is also considered as hazardous substance and any installation which may be required including any electrical wirings and connection of any appliances should only be done by qualified and experienced personnel.

### 5.8.7 HEALTH AND SAFETY IMPACTS

Construction activities have the potential to cause health and safety risks to personnel working on the project site and to those members of the public who may be visiting the site. It is therefore important that areas where activities are taking place, that such areas are secured and access controlled and limited to employees only. Fencing and screening of construction sites against the prying eyes of the public are considered safe practices. The significance rating for the impacts associated with this environmental aspect is **Medium** without mitigation and **Low** post mitigation.

### 5.8.8 TRAFFIC IMPACTS

Construction activities are often carried out with various types of vehicles, machinery, plants and equipment which could lead to increased traffic flow in and around the project site. It is recommended that access to construction site be restricted to the employees only.

It is also important that all operators of construction vehicles are given an induction on the EMP and adequate road signage used around the project site.

Post construction, the traffic flow around the project site is expected to be low to moderate.

### 5.8.9 VISUAL AESTHETICS AND LOSS OF SENSE OF PLACE

Construction sites are often a hive of activities with movements of construction vehicles, machinery, equipment and overhead cranes. The site can therefore be a source of visual annoyance to sensitive residents and visitors alike.

It is often said that some places carry memories, meanings, cultures and traditions such that people who have lived in such an environment for a long time become attached to the place and would do everything in defence of losing such a place. While the site has remained undeveloped for many years, it provides a beautiful view of the Kavango River especially when viewed from the observation spot erected on the periphery of the site. The impact with respect to 'sense of place' has long been accepted by the neighbouring residents and those travelling on the adjacent street road.

The impacts associated with this environmental aspect have a significance rating of **Medium** without mitigation and **Low** with mitigation.

### 5.8.10 CULTURAL AND HERITAGE RESOURCES

The planned development is not taking place in an area known to have any significant archaeological or cultural resources. The physical site inspection did not reveal any graves or any sites of cultural interest. However, should such items be encountered during any excavation activities, mitigation measures as recommended in the EMP section of the report, should be implemented.

The impacts associated with this environmental aspect have a significance rating of **Low** without mitigation and **Very Low** with mitigation.

### 5.8.11 IMPACTS ON SOCIOECONOMIC ENVIRONMENT

By its nature, the construction subsector is one of the biggest economic subsectors in the country which employs hundreds of people – skilled, unskilled, experienced and unexperienced. This development will therefore have its own set of environmental impacts both positive and negative.

#### (a) Employment creation and transfer of skills

As mentioned in the preceding section, the construction sector is one sector which makes use of larger numbers of people – skilled and unskilled labour. It is important that local residents are given preference during the hiring and recruitment process. This will help to transfer skills and knowledge in the sector which would stand the town of RTC in good stead as it evolves and becomes an administrative capital of the region.

#### (b) Benefits to the Local Economy

The development of the site will cost millions of Namibia Dollars which, given the scale of the project, will ultimately benefit both the national and local economies as goods and services that are required for the development have to be procured from the national and local vendors.

It is important that a local construction company which has the prerequisite experience and expertise is hired to develop the facility. Ideally, basic construction materials (bricks, stones, cement, etc.) should be procured from the local vendors to stimulate and encourage the local economy to grow and develop.

## 5.9 Operational Induced Impacts

Impacts associated with the operational phase of the development (hotel or guesthouse) are inherently of a long-term in duration. It should be mentioned here that the design for the proposed hospitality establishment is still unavailable and therefore the scope and footprint of the development in terms of number of guestrooms, sitting capacity for the restaurants, parking areas, and other recreational amenities etc. are unknown at the time of conducting the EIA.

### 5.9.1 NOISE POLLUTION

The operational activities may result in associated noise impacts, depending on the exact type of activities taking place on the premises. However, based on the nature of the proposed land uses, it is not expected that noise levels will be significant if managed in accordance with management actions recommended in the EMP.

### 5.9.2 TRAFFIC IMPACTS

A slight increase in traffic flow around the hotel/guesthouse will be expected during the operational phase of the development, but it is unlikely to lead to traffic congestion in the area.

### 5.9.3 AIR POLLUTION

The air quality in the area is considered fairly good. Additional gaseous emissions are expected from operational phase (smoke from the kitchen in the restaurant, emissions from vehicles of hotel guests, etc.) but such emissions are minimal and can be effectively mitigated.

### 5.9.4 VISUAL AESTHETICS & SENSE OF PLACE

The site will be completely altered on completion of the construction phase and a hotel/guesthouse structure will impose itself on the premises. The development has therefore the potential to change the visual characteristics of the site. The extent of this disturbance will depend on how highly interested and affected parties valued the initial aesthetic quality of the site. The change in sense of place is not expected to be significant as the proposed land use for the subject erven is in line with the surrounding land uses of the area

### 5.9.5 SOCIO-ECONOMIC IMPACTS

The operational phase of the development will result in new jobs being created. The number of job vacancies that will be created are not known at this stage, but hospitality industry is quite a labour intensive economic subsector. Other socioeconomic benefits that will accrue from the operational phase are transfer of new skills and technology to new employees, stimulation of the local economic activities in the form of procurement of goods and services that are required for the hotel/guesthouse. It is recommended that a concerted effort be made to procure goods (furniture, etc.) from local manufacturers.

Table 7: Summary of Significance of Potential Impacts

| Potential Impacts – on three rezoned and Consolidated Erven | WM / WOM | Extent | Magnitude | Duration | Significance | Probability | Confidence | Reversibility | Cumulative Impact |
|---|---|---|---|---|---|---|---|---|---|
| **Planning and Design Phase** | | | | | | | | | |
| **Impacts on existing services and infrastructure** | WM | Localised | Medium Low | Short term | **Medium** | Probable | Certain | Reversible | Medium (-ve) |
| | WOM | Localised | Low | Short term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| **Loss of Flora (Biodiversity)** | WM | Localised | Medium Low | Short term | **Medium** | Probable | Certain | Reversible | Medium (-ve) |
| | WOM | Localised | Low | Short term | **Medium Low** | Probable | Certain | Reversible | Low (-ve) |
| **Construction Induced Impacts** | | | | | | | | | |
| **Habitat Destruction and Loss Biodiversity** | WM | Localised | Medium - Low | Short term | **Medium** | Probable | Certain | Reversible | Medium (-ve) |
| | WOM | Localised | Low | Short term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| **Surface and Groundwater** | WM | Localised | Medium | Short term | **Medium** | Probable | Certain | Reversible | Medium (-ve) |
| | WOM | Localised | Low | Short term | **Medium Low** | Probable | Certain | Reversible | Med Low (-ve) |
| **Soil Disturbance** | WM | Localised | Medium | Short term | **Medium Low** | Probable | Certain | Reversible | Med Low (-ve) |
| | WOM | Localised | Low | Short term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| **Noise and Vibrations** | WM | Localised | Medium | Short term | **Medium Low** | Probable | Certain | Reversible | Med Low (-ve) |
| | WOM | Localised | Low | Short term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| **Dust and Air Pollution** | WM | Localised | Medium | Short term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| | WOM | Localised | Low | Short term | **Very Low** | Probable | Certain | Reversible | Low(-ve) |
| **Waste handling – Solids and Hazardous** | WM | Localised | Medium | Short term | **Medium** | Probable | Certain | Reversible | Medium (-ve) |
| | WOM | Localised | Low | Short term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| **Health and Safety Aspects** | WM | Localised | Medium | Short term | **Medium Low** | Probable | Certain | Reversible | Med Low (-ve) |
| | WOM | Localised | Low | Short term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| **Traffic** | WM | Localised | Medium | Short term | **Medium Low** | Probable | Certain | Reversible | Med Low (-ve) |

| Potential Impacts – on three rezoned and Consolidated Erven | WM / WOM | Extent | Magnitude | Duration | Significance | Probability | Confidence | Reversibility | Cumulative Impact |
|---|---|---|---|---|---|---|---|---|---|
| | WOM | Localised | Low | Short term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| **Visual Aesthetics and Loss of Sense of Place** | WM | Localised | Medium | Short term | **Low** | Probable | Certain | Revrsible | Low(-ve) |
| | WOM | Localised | Low | Short term | **Very Low** | Probable | Certain | Reversible | Very Low (-ve) |
| **Cultural and Heritage Resources** | WM | Localised | Very Low | Short term | Low | Probable | Certain | Reversible | Low (-ve) |
| | WOM | Localised | Negligible | Short term | Negligible | Probable | Certain | Reversible | Negligible (-ve) |
| **Impacts on Socioeconomic Environment** | WM | Localised | Medium | Short term | **Medium** | Probable | Certain | Reversible | Medium (-ve) |
| | WOM | Localised | Medium | Short term | **Medium** | Probable | Certain | Reversible | Medium (-ve) |
| **Operational Induced Impacts** | | | | | | | | | |
| **Noise Pollution** | WM | Localised | Medium – Low | Medium term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| | WOM | Localised | Low | Medium term | **Very Low** | Probable | Certain | Reversible | Very Low (-ve) |
| **Traffic** | WM | Localised | Medium – Low | Medium term | **Medium** | Probable | Certain | Reversible | Medium (-ve) |
| | WOM | Localised | Low | Medium term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| **Air Pollution** | WM | Localised | Medium-Low | Medium term | **Low** | Probable | Certain | Reversible | Low (-ve) |
| | WOM | Localised | Low | Medium term | **Very Low** | Probable | Certain | Reversible | Very Low (-ve) |
| **Visual Aesthetics & Sense of Place** | WM | Localised | Medium-Low | Medium term | **Medium** | Probable | Certain | Reversible | Medium (-ve) |
| | WOM | Localised | Low | Medium term | **Medium Low** | Probable | Certain | Reversible | Med Low (-ve) |
| **Socioeconomic environment** | WM | Localised | Medium | Long term | **Medium** | Probable | Certain | Reversible | Medium (-ve) |
| | WOM | Localised | Medium | Long term | **Low** | Probable | Certain | Reversible | Low (-ve) |

## 5.10 Recommended Mitigation Measures

The mitigation measures recommended for the project are presented in Table 8.

Table 8: Mitigation Measures for Identified Impacts

| Potential Impacts /Aspects | Mitigation Measures /Management Actions |
|---|---|
| **Planning, Designing and Mobilisation** | |
| **Compliance** | Promotor must ensure that all the necessary permits and or licenses are secured and in order before starting with any construction work. |
| **Decarbonisation** | The planning and designing of the proposed development should be approached in a manner that takes the decarbonisation initiatives into account by being energy efficient, use of clean energy such as solar or wind energy and the use of clean fuel (unleaded fuel, etc.).<br>Buildings should be designed and oriented in a way that allows maximum utilisation of solar power.<br>It is also advisable to encourage the recycling of waste and recycling of water. |
| **Construction Induced Impacts** | |
| **Habitat Destruction and Loss of Biodiversity** | ➢ Any activity which requires vegetation clearing must be preceded by careful planning and the execution well-coordinated.<br>➢ Mature trees on the site must preserved and not uprooted during the site clearance.<br>➢ Dead trees may be harvested for firewood with the permission of the Contract Manager.<br>➢ Limit the possibility of compaction and creating hard subsurface.<br>➢ Equipment used must be in good condition to ensure that accidental oil spills do not occur to contaminate water sources<br>➢ Discourage scavengers by not disposing of any refuse on site. If bins are used and kept outdoors such bins should be made animal proof.<br>➢ Comply with the recommended management measures in the EMP. |
| **Surface and Groundwater** | ➢ Any major spill must be reported to the line ministry and steps taken to prevent re-occurrence.<br>➢ Store any bulk fuel that may be required in suitable containment areas (non-porous surface and bunded)<br>➢ Fuel must be obtained in a lawful manner and a permit for on-site storage obtained from the line ministry.<br>➢ Training through toolbox talks on all aspects of the EMP is vital and encouraged.<br>➢ Maintain a high standard of housekeeping.<br>➢ Drip trays must be used whenever machinery (concrete mixers, generators, compactors, etc. are being refueled.<br>➢ Accidental spills and leaks (including absorption) to be cleaned as soon as possible. |
| **Health, Safety & Security** | ➢ Develop a Health and Safety Plan for the project.<br>➢ Provide adequate training to employees on all aspects on health and safety.<br>➢ Develop an Emergency Response Plan for the project.<br>➢ Provide adequate training to staff and employees on such procedure framework.<br>➢ Ensure employees are provided with suitable PPE and enforce wearing thereof.<br>➢ A fully equipped first aid box must be provided and employees trained on how to offer first aid.<br>➢ Provide correct equipment for the specific jobs and train employees on the use of such equipment.<br>➢ Regulate access to the facilities by deploying security measures and or fencing where appropriate in order to protect the workers and local community from potential accidents.<br>➢ Employee good housekeeping rules and ensure proper handling of all waste products. |

| Potential Impacts /Aspects | Mitigation Measures /Management Actions |
|---|---|
| | ➢ No dangerous items (guns, snares, combat knives, etc.) should be allowed at the work place.<br>➢ No alcohol, drugs and foul languages should be allowed at the work site.<br>➢ Comply with the EMP. |
| **Soil Disturbance** | ➢ All excavations that are required should be well planned and carefully executed.<br>➢ Restrict movements of machinery and vehicles to existing routes.<br>➢ Topsoil from excavations that is not immediately needed must be stockpiled and preserved for future rehabilitation.<br>➢ Ensure that any stored topsoil is not washed away during the rainy season.<br>➢ Allow vegetation to grow on topsoil because it keeps the topsoil biologically active.<br>➢ Prevent wind erosion of any topsoil stockpiled for future rehabilitation.<br>➢ Any alien vegetation species growing on topsoil stockpiles should be removed.<br>➢ When doing rehabilitation, first replace subsoil, then topsoil on top. |
| **Noise and Vibrations** | ➢ Confine any construction work to daytime hours: 06h00 to 17h00 Monday to Friday and 07h00 to 13h00 on weekends.<br>➢ No construction activities should be performed between dust and dawn.<br>➢ Restrict excessive noise to areas of activities only.<br>➢ Position equipment making noising (bulldozers, compactors, concrete mixers, etc.) in such a manner that noisy is directed away from any known sensitive receptors.<br>➢ All machinery and equipment should be shut down when not being used or throttle back between periods of use and non-activity.<br>➢ Long idling, hooting and excessive revving of equipment & machinery should be avoided.<br>➢ Employees working with noisy machines & equipment should be provided with suitable PPEs.<br>➢ Any complainants received from any stakeholders regarding noise or vibrations should be investigated and corrective action taken. |
| **Dust and Air Pollution** | ➢ Ensure that machinery and equipment used are regularly serviced and well maintained.<br>➢ Dust emissions must be kept within allowed standards.<br>➢ Provide suitable PPEs to Employees working in areas where dusty is generated.<br>➢ Suspend activities that generate excessive dust and noxious emissions during strong winds.<br>➢ Any complaints received from any stakeholder should be investigated and corrective action taken.<br>➢ Machinery and equipment used in the operation should be well maintained and regularly serviced. |
| **Traffic Impacts** | ➢ Ensure that suitable and adequate road traffic signs are installation around the construction site.<br>➢ Limit speed limits on access roads leading to the construction site.<br>➢ Ensure that construction vehicles used in the operation are roadworthy and adequately signposted.<br>➢ Truck operators must be cautioned to limit idling, hooting and revving of construction vehicles.<br>➢ Equipment and machinery and plants used in the operation must be well maintained and regularly serviced. |
| **Waste Handling – Solid and Hazardous** | **SOLID WASTE:**<br>➢ Keep various types of waste separate.<br>➢ Wherever possible waste should be sorted into recyclable and non-recyclable.<br>➢ Organic waste (food items, etc.) should not be fed to wildlife. |

| Potential Impacts /Aspects | Mitigation Measures /Management Actions |
|---|---|
| | ↓ Avoid wind dispersal of papers and plastics as it results in visual nuisance.<br>↓ Maintain a high standard of housekeeping.<br>**HAZARDOUS WASTE**<br>↓ Ensure machineries are well maintained, serviced and breakdowns promptly fixed.<br>↓ Any leaks must be promptly fixed.<br>↓ Use drip pans when re-fueling or changing oil & fuels.<br>↓ Store used oil filters in leak-proof steel containers until disposed of.<br>↓ Store bulk fuel in adequate containment areas (non-porous surface and bunded)<br>↓ Under no circumstances should hazardous waste buried or burned on site. |
| **Cultural and Heritage Resources** | ↓ If any remains are found, stop work and implement a 'Chance Find Procedure'.<br>↓ Raise awareness about possible heritage finds.<br>↓ Report all findings that could be of heritage importance to the relevant authority (NHC).<br>↓ In case archaeological remains are uncovered, cease activities and inform the site Supervisor.<br>↓ The site must be assessed and demarcated and determine whether work can proceed without damage to findings, mark exclusions boundary and information NHC with GPS position.<br>↓ If needed, further investigation has to be requested for professional assessment and the necessary protocols of the Chance Find Procedure have to be followed.<br>↓ The significance of the remains has to be evaluated by an archaeologist who then determined the next steps to be taken.<br>↓ If remains are of a human, report finding to the nearest police.<br>↓ Obtain clearance from relevant authority on what to do next.<br>↓ Employees should be trained on 'Heritage Resources' and what to do when such resources are uncovered during the course of exploration activities.<br>↓ Respect items of cultural heritage including any graves. |
| **Visual aesthetics and Loss of Sense of Place** | ↓ Position the construction facilities in such a way that it is out of sight of human receptors.<br>↓ Maintain a high standard of housekeeping which includes effective waste handling and management.<br>↓ Apply dust suppression measures where possible, especially when excavating during windy conditions.<br>↓ Any lights used at the construction campsite should point inwards and outwards.<br>↓ Specific activities that may generate excessive dust should be avoided during high windy conditions.<br>↓ No littering should be allowed at the exploration sites. |
| **Socioeconomic environment** | Same as for the Operational Phase |
| **Operational Induced Impacts** | |
| **Noise** | ↓ Limit activities that generate industrial noise, i.e. maintenance work which generate excessive noise should be performed during day hours.<br>↓ Continuous monitoring of noise levels should be conducted to make sure the noise level does not exceed acceptable thresholds.<br>↓ Air conditioning units should have noise blankets or curtains installed to to decrease the amount noise generated by the air conditioning units.<br>↓ Hooting, revving and idling of vehicles is not allowed and guests should be informed about this requirements. |

| Potential Impacts /Aspects | Mitigation Measures /Management Actions |
|---|---|
| | ➢ Any complainant received with respect to noise must be investigated and corrective actions taken. |
| **Emission** | ➢ Ensure that all outside areas of the hotel/guesthouse premises are paved to combat dust.<br>➢ Manage activities that generate emissions on the premises – smoke from the kitchens, braai areas, etc.<br>➢ Any complainant received regarding emissions must be investigated and corrective measures taken. |
| **Waste** | ➢ Hospitality establishments produce a lot of waste from guests and operations such as food scraps, plastics, papers, even hazardous materials like cleaning chemicals and e-waste.<br>➢ Develop a waste management plan for the establishment.<br>➢ Consider donating food surplus to better manage hotel food waste.<br>➢ Use a food waste smart metre which promotes sorting and separation of different types of waste.<br>➢ Encourage waste recycling<br>➢ Use bins which have lids.<br>➢ Ensure that fat traps in the kitchen are regularly serviced and well maintained.<br>➢ Hazardous waste (cleaning products, chemicals, oil leaks, fuel leaks, cooking oil leaks, etc.) should be stored in leak-proof containers and disposed of in a responsible manner. |
| **Visual Intrusion** | ➢ It is recommended that more green technologies be implemented within the proposed design and building materials of the development where possible in order to minimise the visual prominence of such a development within the more natural surrounding landscape.<br>➢ Natural colours and building materials such as timber and stones should be incorporated as well as the use of indigenous vegetation in order to help the development to blend in well with the natural environment.<br>➢ Visual pollutants can further be prevented through mitigations, i.e. by retaining mature trees, introduce tall indigenous trees, keep structures unpainted and minimizing large advertising billboards. |
| **Socioeconomic environment** | ➢ **Hiring of Prospective Employees**: Handle the hiring process for any new vacancies that may need to be filled in a manner that is fair and transparent by offering jobs to the locals or to those people living within the town of Rundu.<br>➢ **Working Conditions:** Provide good working conditions for employees hired during the construction activities with clear defined roles and responsibilities. Poor labour relations could lead to industrial actions and strikes which ultimately attract unwanted attention to the promoter.<br>➢ **Good and services:** Procure goods and services required for the project from local communities (where feasible). This could be items such as water pipes, electrical cables, foodstuff, stationeries, fuel, spare parts, PPEs, etc.<br>➢ **Communication:** Keep stakeholders especially members of the community informed of construction activities by erecting an onsite information board on activities being performed, by who and for who, so as to avoid unexpected social impacts. Maintaining a good relationship with the community is beneficial to all parties.<br>➢ **Social ills:** News of employment opportunity could lead to an influx of people streaming into the town in search of employment which could lead to overcrowding and creation of shacks or informal settlements.<br>➢ **Transfer of New Technology:** Transfer of new technology and skills will be acquired by those who will be employed especially the youths. |
| **Surface and Groundwater** | ➢ No waste products of any kind may be dumped in or in close proximity to any surface water bodies or storm water channels on the property.<br>➢ Contaminated runoff from the various operational activities should be prevented from entering any surface or groundwater bodies.<br>➢ Fat traps should be fitted in all drainage system from the kitchen/restaurant areas to prevent fats and other cooking oil entering the sewerage system.<br>➢ Ensure that surface water accumulating on site are channeled and captured through a proper storm water management system to be treated in an appropriate manner before disposal into the environment.<br>➢ Disposal of waste from various sections of the property must be properly managed. |

## 6. CONCLUSION AND RECOMMENDATION

The environmental scoping assessment conducted for the permanent closure of Remainder Erf 1527, Extension 5, Erf 2868 and re of Erf 2867 in Extension 9, consolidation of the aforesaid erven into a single erf X and rezoning from public open space to business will not have any significant negative impacts on the environment.

All the necessary services such as street roads, water reticulation, sewage system, electricity points, street lighting, etc have been installed and the connection of the envisaged development to the services will not cause any impacts. The site is along the banks of the Kavango River with a 15 m drop in elevation and requires for an engineering solution to handle the storm water from the street road to east of the site.

There were no objections received during the public participation process conducted which included advertisement in two local newspapers as well as planting EIA Notices at the site. It is the opinion of the EIA Consultant that the envisaged development will be of economic benefit to RTC and its residents. A number of employment opportunities are expected to be created during the construction of the facility and for its operation.

Most of the potential impacts that were identified during the scoping assessment have a significant rating of low without mitigation measures, to very low when mitigated.

Overall the economic benefits that will accrue to RTC and its residents from the proposed development, both in the short term and long term, by far outweigh the minimal environmental impacts associated with the development.

It is recommended that an ECC be granted to the applicant subject to the applicant committing to comply with any conditions which the EC may wish to impose.

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