

**NOVEMBER 2021**

## **ENVIRONMENTAL IMPACT ASSESSMENT (EIA)**

FOR THE PROPOSED REZONING OF ERF 1528 & 1530, RUNDU EXTENSION 5 FROM GENERAL RESIDENTIAL AND RESIDENTIAL TO HOSPITALITY AND THE CONSOLIDATION OF THE AFOREMENTIONED ERVEN WITH ERF 1532, RUNDU, KAVANGO EAST REGION, NAMIBIA

## **FINAL SCOPING REPORT**

**APP - 003248**

**CLIENT:**

KAVANGO RIVER LODGE CC



**PREPARED BY:**



## PROJECT INFORMATION

<b>PROPONENT:</b>	Kavango River Lodge CC P.O Box 3406 Rundu, Namibia
<b>PROJECT TITLE:</b>	Environmental Impact Assessment (EIA) for the rezoning of Erf 1528 & 1530, Rundu Extension 5 from General Residential and Residential to Hospitality and the consolidation of the aforementioned erven with Erf 1532, Rundu, Kavango East Region, Namibia
<b>PROJECT TYPE:</b>	Environmental Impact Assessment Study
<b>PROJECT LOCATION:</b>	Rundu, Kavango East Region, Namibia
<b>COMPETENT AUTHORITY:</b>	Office of the Environmental Commissioner (Ministry of Environment and Tourism)
<b>ENVIRONMENTAL ASSESSMENT PRACTITIONER</b>	Turnix Environmental Consulting cc <b>Contact person:</b> Mr. Olavi Makuti <b>Cell:</b> +264 811405033 <b>E-mail:</b> <a href="mailto:olavi.makuti@gmail.com">olavi.makuti@gmail.com</a> P.O Box 27488, Windhoek, Namibia
<b>DATE OF RELEASE</b>	November 2021
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## EXECUTIVE SUMMARY

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Kavango River Lodge CC, the owner of Erven 1528, 1530 & 1532, Rundu Extension 5, intends to carry out the following activities:

- **Rezoning of Erf 1528, Rundu Extension 5 from “General Residential” to “Hospitality”.**
- **Rezoning of Erf 1530, Rundu Extension 5 from “Residential” to “Hospitality”.**
- **Consolidation of the aforementioned rezoned erven with Erf 1532, Rundu, Extension 5.**
- **Consent to commence with the Proposed Development / Land Use (Hospitality) on the newly consolidated erf whilst rezoning is ongoing.**

The current lodge is located on Erf 1532. The envisioned consolidation would increase the development potential of the erf. The management of the lodge intends to expand the current facilities of the lodge to include four new rooms and a public swimming pool, which will draw more visitors to the lodge.

The project will take place in Rundu, the capital of the Kavango East Region. Erven 1528 (General Residential) and 1530 (Residential) are located in the neighbourhood of Rundu Extension 5. Erven 1528 and 1530, Rundu Extension 5 measure approximately 35,603 m<sup>2</sup> and 12 727 m<sup>2</sup> in extent, respectively.



#### Locality of Kavango River Lodge and Erf 1528 & 1530.

To satisfy the requirements of Namibia's Environmental Management Act and to ensure that the pristine natural setting of the erven is not disturbed, Kavango River Lodge CC has appointed Turnix Environmental Consulting cc to conduct this Environmental Impact Assessment (EIA) study in order to obtain an Environmental Clearance Certificate (ECC) for the above activities.

The Kavango East Region generally receives more rain than the rest of the country (except Zambezi Region) with an annual average rainfall that varies between about 450 and 600 mm. The Kavango East Region experiences average maximum temperatures of over 30°C for nine months of the year and average minimums of 4-6°C during the winter months of June, July and August.

Geologically, superficial Cenozoic deposits of the Kalahari Group underlie most of the Kavango East Region. In general, the Kalahari Group consists of light colored sands, chalcidonic limestone, silicified sandstones and ochreous sands. The most conspicuous

and important water feature in the region is the perennial Kavango River, making up 350 km of Namibia's northern border before crossing the region and flowing into Botswana.

Erf 1528 & 1530 are covered with some indigenous trees and grass species. The trees predominantly comprise of *Acacia erioloba* (camel thorn), *Schinziophyton rautanenii* (mangetti tree), *Albizia versicolor*, *Ziziphus mucronata* (buffalo thorn), *Dichrostachys cinerea* (sicklebush) and *Baphia massaiensis* (the prominent shrub in the area). *Eragrostis* species dominate the grass in the area. The grass *Cynodon dactylon* (couch grass) and *Phragmites australis* (reeds) dominates the vegetation near the riverbanks.

The significance of all the impacts identified and assessed in this project can be effectively mitigated through the implementation of mitigation measures recommended in the Environmental Management Plan (EMP). No impacts with a "high" significance rating are expected on this project. The few impacts that were rated "medium" before mitigation for both the construction and operational phase can be successfully reduced to "low" with the implementation of the recommended mitigation measures.

#### Impacts with a "medium" rating and their source.

IMPACT	SOURCE
<b>Noise</b>	Noise emanating from construction vehicles and equipment such as drillers, compactors and other machineries.
<b>Disturbance of natural slope and clearing of vegetation</b>	The construction on the two erven will involve the clearing of some areas to make way for the proposed lodge facilities and associated infrastructure. The removal of vegetation and disturbance to the natural slope can facilitate soil erosion if not done properly.
<b>Pollution</b>	Various pollutants associated with construction activities such as chemical pollution from oil spills resulting from the handling of various machineries used during construction, building rubble and empty bags and containers.

<b>Dust</b>	Loosening of the substrate, excavation work and movements of construction vehicles.
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This study concludes that the proposed rezoning and consolidation and the subsequent expansion of the current facilities of the Kavango River Lodge will not cause any irreversible threats to the biophysical and socio-economic environment of the area. All the impacts identified and assessed during this study are generic impacts associated with the development of tourism establishments. With strict adherence to the recommended mitigation measures, the significance of these impacts can be reduced to a “low” significance rating.

The contributions of the proposed project to the tourism industry will far out-weigh the few impacts identified. This investment is in line with Namibia’s vision for the tourism industry and will contribute to the attainment of Namibia’s sustainability objectives.

It is thus recommended that the project be issued with Environmental Clearance on condition that the mitigation measures recommended in the attached Environmental Management Plan are implemented fully.

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## 1. INTRODUCTION

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### 1.1 BACKGROUND

Kavango River Lodge CC, the owner of Erven 1528, 1530 & 1532, Rundu Extension 5, intends to carry out the following activities:

- **Rezoning of Erf 1528, Rundu Extension 5 from “General Residential” to “Hospitality”.**
- **Rezoning of Erf 1530, Rundu Extension 5 from “Residential” to “Hospitality”.**
- **Consolidation of the aforementioned rezoned erven with Erf 1532, Rundu, Extension 5.**
- **Consent to commence with the Proposed Development / Land Use (Hospitality) on the newly consolidated erf whilst rezoning is ongoing.**

The current lodge is located on Erf 1532. The envisioned consolidation would increase the development potential of the erf. The owners intends to expand the existing tourism facilities and activities on the consolidated erf thus strengthening their position within the tourism industry within Rundu and the Kavango East Region as a whole.

The rezoning of erven from residential to hospitality and the development of hospitality infrastructure is a listed activity in the Environmental Management Act (No.7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012).

To satisfy the requirements of Namibia’s Environmental Management Act and to ensure that the pristine natural setting of the erven is not disturbed, Kavango River Lodge CC has appointed Turnix Environmental Consulting cc to conduct this

Environmental Impact Assessment (EIA) study in order to obtain an Environmental Clearance Certificate (ECC) for the above activities. The Competent Authority is the Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs (Office of the Environmental Commissioner).

## **1.2 NEED AND DESIRABILITY**

Tourism is an important sector in Namibia. It is the third largest contributor to the country's Gross Domestic Product (GDP). It generates a significant number of jobs and is a valuable foreign exchange earner for the economy. It is against this background that the Namibian Government developed the *National Tourism Investment Profile & Promotion Strategy 2016-2026*. The main objective of the investment strategy is to transform Namibia into the most competitive tourism destination in Africa.

The above-mentioned strategy wants to make Namibia the country of choice for prospective investors. Many international investors are heeding the call to invest in the Namibian tourism industry due to many factors that makes Namibia a preferred investment destination. Some of these factors include the pristine natural environment and the fact that Namibia has an advantageous legislative and fiscal environment.

Thus, the proposed rezoning and consolidation of the erven and expansion of hospitality facilities of the Kavango River Lodge fits in well with the provisions of the tourism investment strategy and other national development frameworks.

The Kavango East Region has three National Parks that fall under the jurisdiction of the Ministry of Environment, Forestry and Tourism: the Bwabwata National Park (including the Ramsar Site), the Khaudum National Park and the Popa Game Park.

The parks are a major focal point for tourism in the region. The Kavango River Lodge, with a spectacular view over the Okavango River and flood plains of southern Angola, caters for both tourists and business people. The expansion of the lodge will further support the tourism industry, as it will better service the visitors to the above-mentioned game parks.

### **1.3 TERMS OF REFERENCE**

The proponent required the consultant to carry out this study as per the requirements of the *Environmental Management Act No.7 of 2007* and the *Environmental Assessment Regulations* (February 2012).

The EIA process will investigate if there are any potential significant biophysical and socio-economic impacts associated with the intended activities. Public participation is the cornerstone of the EIA process as this is the stage where Interested and Affected Parties (I&APs) are considered and involved in the decision making process. The EIA process would therefore provide the I&APs an opportunity to raise issues of concern and suggestions for enhanced benefits as provided for in the EMA and Environmental Assessment Regulations.

### **1.4 ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)**

Turnix Environmental Consulting cc (Reg. No. CC/2012/7856) is a wholly Namibian owned company, established in 2012 to provide consulting services to various public and private sectors in areas such as Strategic Environmental Assessments (SEA) & Environmental Impact Assessments (EIA), development of Environmental Management Systems, Environmental Auditing, Monitoring and Evaluation, Water Management, Solid Waste Management and Project Management.

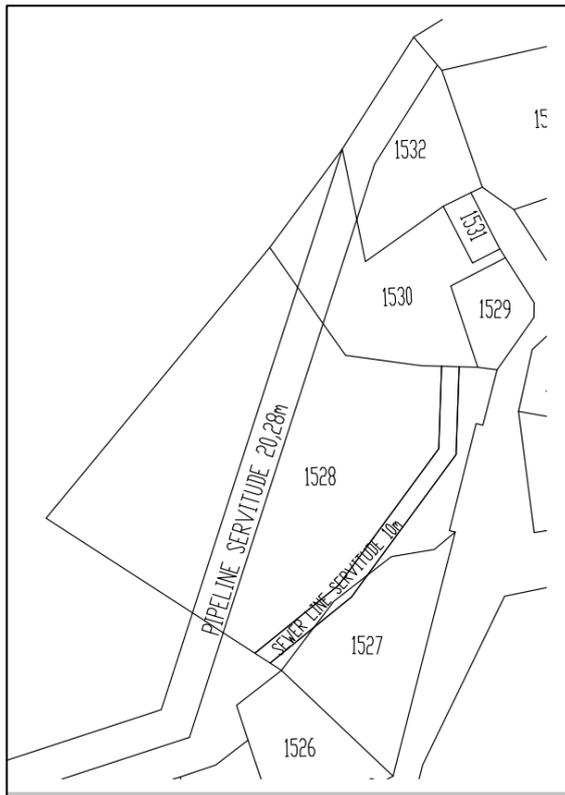
The Environmental Assessment Practitioner (EAP) for this study was Mr. Olavi Makuti. Mr. Makuti's main area of expertise includes Urban Environmental Management, Biodiversity Conservation, Strategic Environmental Assessments (SEA), Environmental Impact Assessments (EIA), and Environmental Management Systems (EMS). Olavi has 18 years' experience in the field of environmental management and has a Master's Degree in Environmental Management (University of the Free State, South Africa), B.Tech Degree in Natural Resources Management (Polytechnic of Namibia) and National Diploma in Nature Conservation (Polytechnic of Namibia). He has also done the MDP (Management Development Program) with the University of Stellenbosch and other short courses. His CV is attached for further information on his educational qualifications and experience.



Erven 1528 (General Residential) and 1530 (Residential) are located in the neighbourhood of Rundu Extension 5. Erven 1528 and 1530, Rundu Extension 5 measure approximately 35,603 m<sup>2</sup> and 12 727 m<sup>2</sup> in extent, respectively. Please refer to below locality map (Figure 2).



**Figure 2:** Location of Kavango River Lodge and Erf 1528 & 1530.



**Figure 3:** Layout of the erven

## 2.2 CURRENT OPERATIONS

Kavango River Lodge started operating in 2000. The current owners bought the lodge in 2016 and intends to extend and modernize the facilities at the lodge. The lodge provides much needed to local people. Now the lodge employs 28 people and this number will increase once the expansion project is completed. The lodge boasts the following excellent facilities:

- **Twenty-nine (29) rooms:** Three (3) are family rooms, 6 executive rooms, 3 budget rooms, 10 luxury and 7 standard self-catering rooms.
- **Conference Facility:** Can hold a capacity of plus minus 120 people.
- **Bar & Restaurant:** Caters for both in-house guests and the public.
- **Two small swimming pools for in-house guests.**





**Picture 1:** Swimming pool area.



**Picture 2:** Guest rooms

### 2.3 ENVISIONED OPERATIONS ON CONSOLIDATED ERF

The proposed consolidated erf will comprise of the following erven and their sizes:

- ERF No: 1532 is about 5, 725 m<sup>2</sup>
- ERF No: 1530 is about 12, 727 m<sup>2</sup>
- ERF No: 1528 is about 35, 603 m<sup>2</sup>

**Total 54, 055 m<sup>2</sup>**

The proposed expansion of facilities onto Erf 1528 & 1530 will only be allowed by the authorities if the two erven are rezoned to assume the appropriate land use zoning (hospitality) and are consolidated with the Erf 1532, were the current facilities are located. Furthermore, environmental management legislation in Namibia requires that the proponent must obtain Environmental Clearance before hospitality facilities are developed.

Once the rezoning and consolidation is approved, the management of the lodge intends to expand the current facilities of the lodge to include four new rooms and a public swimming pool, which will draw more visitors to the lodge.

### 2.4 SERVICES AND INFRASTRUCTURE

- **Water & Electricity Supply**

The Rundu Town Council who in turn is supplied by the national bulk water supplier, Namibia Water Corporation (Namwater), supplies potable water for the lodge. The same service will be extended to the two erven.

- **Refuse and Waste Management**

- **Construction Phase:**

The waste to be generated from construction activities will be stored in skip containers. Once the containers are full, they will be transported to the Rundu waste disposal site. Construction workers will also be encouraged to refrain from littering. Hazardous waste generated from construction activities such as used oil and paint containers will be stored in specialized containers and thereafter disposed of responsibly.

- **Operational Phase:**

During the operations of the lodge, there will be various waste streams. If not managed properly some waste such as plastic bags and packaging material can be blown by the wind to other parts of the lodge and the environs near the Kavango River. This will have a negative impact on the pristine natural surroundings and can have an impact on the visual properties of the area.

The lodge management has introduced a waste management system that is based on environmental sustainability principles. Waste at the lodge is collected and deposited in centralized bins. Each different part of the lodge and guest units have their own waste bins that are emptied by the cleaners and deposited at the central collection point. The waste is then collected by the Rundu Town Council and sometimes buy own transport for proper disposal.

The lodge will try to minimize the cost involved in waste management and environmental impacts by implementing the Integrated Waste Management Hierarchy as shown on figure 6 below.



**Figure 4:** Waste Management Hierarchy

In the Integrated Waste Management Hierarchy the emphasis should first be to avoid the production of waste, were the avoidance of waste is not possible the amount of waste produced should be minimized, reuse and recycle before disposal is contemplated. This is the approach that is been promoted worldwide.

- **Accessibility**

Accessed to the two erven will be through the existing street access to Kavango River Lodge. No new roads and streets will be created.

- **Fire Fighting Provision**

The Kavango River Lodge uses the Rundu Town Council Fire Brigade in case of fire emergencies. This service forms part of the rates and taxes that Rundu residents and businesses pay to the Rundu Town Council.

- **Sewage Management**

The Kavango River Lodge is connected to the sewage reticulation system of the Rundu Town Council. The infrastructure to be developed at the two erven will similarly be connected to the town council sewage reticulation system.

### 3. LEGAL REQUIREMENTS

This section provides an analysis of the policies and legislations that are relevant to the proposed rezoning, consolidation and expansion of the lodge infrastructure. This section aims to inform the proponent about the requirements to be fulfilled in undertaking the proposed project.

The table below lists the various environmental and developmental policies and legislations that have relevance to the project.

**Table 1:** Legal framework of the project.

LEGISLATION	PROVISION	REGULATORY AUTHORITY	APPLICATION TO THE PROJECT
<b>The Constitution of the Republic of Namibia</b>	Article 91 (c) and 95 (i) which commit the state to actively promote and maintain environmental welfare of all Namibians by promoting sustainable development	Government of the Republic of Namibia	The project should not pose a threat to the natural and human environment.
<b>Environmental Management Act No.7 of 2007 and EIA Regulations (2012)</b>	Provides a list of listed activities that may not be undertaken without environmental clearance	Ministry of Environment, Forestry and Tourism (Office of the Environmental Commissioner)	An Environmental Clearance will be required before project Commences.
<b>Water Act 54 of 1956</b>	Control of disposal of sewage, the purification of effluent, the prevention of surface and groundwater pollution, and the sustainable use of water resources.	Ministry of Agriculture, Water and Forestry (Department of Water Affairs)	The sewage disposal system to be constructed at the lodge must adhere to the provisions of this Act.

<b>The Water Resources Act 24 of 2004</b>	Control of disposal of sewage, the purification of effluent, the prevention of surface and groundwater pollution, and the sustainable use of water resources.	Ministry of Agriculture, Water and Forestry (Department of Water Affairs)	Ministry of Agriculture, Water and Forestry should be consulted before any on-site wastewater treatment facility is installed.
<b>Forestry Act No 27 of 2004</b>	The Act affords protection to certain indigenous plant species.	Ministry of Environment, Forestry and Tourism (Directorate of Forestry)	A permit is required before any protected plants are removed. Some protected tree species have been observed at the site. The permit for removal can be obtained from the Directorate of Forestry in Rundu.
<b>Nature Conservation Ordinance no. 4 of 1975</b>	Chapter 6 provides for legislation regarding the protection of indigenous plants	Ministry of Environment, Forestry and Tourism	Indigenous and protected plants have to be managed within the legal confines.
<b>Soil Conservation Act No 76 of 1969</b>	Combating and prevention of soil erosion, the conservation, improvement and manner of use of the soil and vegetation and the protection of the water sources	Ministry of Agriculture, Water and Land Reform	The site of the two erven is especially prone to soil erosion. The proponent should ensure that soil erosion and soil pollution is avoided during construction and operation.
<b>Atmospheric Pollution Prevention Ordinance No 45 of 1965</b>	Part II - control of noxious or offensive gases, Part III - atmospheric pollution by smoke, Part IV - dust control, and Part V - air pollution by fumes emitted by vehicles.	Ministry of Health and Social Services	The development should consider the provisions outlined in the ordinance.
<b>Hazardous Substance Ordinance 14 of 1974</b>	To provide for the control of substances which may cause injury or ill-health to or death of human beings by	Ministry of Health and Social Services	The handling, usage and storage of hazardous substances on site should be carefully controlled according to this Ordinance.

	reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances; to provide for the division of such substances into groups in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances; and to provide for matters connected therewith.		
<b>Urban and Regional Planning Act No. 5 of 2018</b>	Chapter 7 deals with the Subdivision or Consolidation of Land.	Ministry of Urban and Rural Development	The development must comply with the provision of the act.
<b>Local Authorities Act No. 23 of 1992</b>	The Local Authorities Act prescribes the manner in which a town or municipality should be managed by the Town or Municipal Council.	Ministry of Urban and Rural Development	The development has to comply with provisions of the Local Authorities Act.
<b>The Labour Act of 1992</b>	Employees are subject to the terms of the Labour Act. The act also contains the Health and Safety Regulations.	Ministry of Labour, Industrial Relation and Employment Creation.	Given the employment opportunities presented by the expansion of the lodge infrastructure, compliance with the labour law is essential.



<b>Public and Environmental Health Act of 2015</b>	This Act (GG 5740) provides a framework for a structured uniform public and environmental health system in Namibia. It covers notification, prevention and control of diseases and sexually transmitted infections; water and food supplies; waste management; health nuisances; public and environmental health planning and reporting. It repeals the Public Health Act 36 of 1919 (SA GG 979)	Ministry of Health and Social Services	Contractors and users of the proposed development are to comply with these legal requirements.
<b>National Heritage Act, 2004 (Act N0.27 of 2004)</b>	This Act calls for the protection, conservation and registration of places and objects of heritage significance.	National Heritage Council of Namibia	Even though the scoping exercise did not discover any archaeological material on the site, should there be any such discovery (e.g. graves) the National Heritage Council should be informed immediately.
<b>National Tourism Policy of 2008</b>	This policy stipulates that all tourism developments should be within the carrying capacity of an area and that the carrying capacity be defined by environmental limits	Ministry of Environment and Tourism (Directorate of Tourism)	The capacity of the lodge should take the carrying capacity of the receiving environment into consideration.
<b>Atmospheric Pollution Prevention Ordinance (1976)</b>	This Ordinance generally provides for the prevention of the pollution of the atmosphere. Part IV of this ordinance deals with dust control.	Ministry of Environment and Tourism.	This Ordinance requires that any person carrying out industrial activities which is liable to cause a nuisance to persons residing in the vicinity or to cause dust pollution to the atmosphere, shall adopt the best practicable means

			<p>to prevent such dust from becoming dispersed and causing a nuisance.</p> <p>Activities at the lodge construction site such as excavation and land clearing need to properly controlled to ensure dust is not a nuisance.</p>
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## 4. DESCRIPTION OF THE RECEIVING ENVIRONMENT

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### 4.1 CLIMATE

The Kavango East Region generally receives more rain than the rest of the country (except Zambezi Region) with an annual average rainfall that varies between about 450 and 600 mm. As with most of Namibia, the Kavango East Region receives summer rainfall with the first early rains coming to the region in October and November. The highest rainfall usually occurs in January and February and the months from May to September tend to be dry (Mendelsohn, *et al* 2002).

The Kavango East Region experiences average maximum temperatures of over 30°C for nine months of the year and average minimums of 4-6°C during the winter months of June, July and August (Mendelsohn, *et al* 2002).

### 4.2 GEOLOGY AND SOILS

Geologically, superficial Cenozoic deposits of the Kalahari Group underlie most of the Kavango East Region (Schneider, 1987). In general, the Kalahari Group consists of light colored sands, chalcedonic limestone, silicified sandstones and ochreous sands.

Aeolian sand and water-deposited gravel are dominant in the soil body. The relatively sterile sandy soils of the Kavango are enriched by silt, deposited by the Kavango River, in both the river terraces and on the flood plain (Schneider, 1987).

### 4.3 HYDROLOGY AND HYDROGEOLOGY

The most conspicuous and important water feature in the region is the perennial Kavango River, making up 350 km of Namibia's northern border before crossing the region and flowing into Botswana. Almost the entire runoff of the Okavango basin is generated in the Angolan highlands with the main Rio Cubango providing over half the total runoff. The Rio Cuito joins the Kavango River about 100 km downstream of Rundu, and has a more even flow rate and later flood peak (El Obeid & Mendelsohn, 2001).

Where the Kavango River runs along the Namibia-Angolan border, it is a large, sluggish, low-gradient river until the summer floods. Summer floods in Angola start from about September and usually reach Namibia in January or February continues to rise until April, and take several months to recede. During this period, the valley becomes inundated with water three to four times higher than the lowest levels in November. During low flow periods, the water is confined to the main channel, which is seldom more than 100 m wide and less than one meter deep in places. Water is abstracted from the Kavango River to supply Rundu with potable water (El Obeid & Mendelsohn, 2001).

Most underground water lies in a variety of aquifers in Kalahari sediments that extend to depths of up to 350 metres in some places. The Kalahari aquifers are largely recharged by water seeping in a northerly direction from elevated areas in the south of the region. In the northeastern part of the region, water is usually about 20 metres below the ground, while it is generally at between 40 and 80 metres in the south-west. Most boreholes produce yields in excess of 1-5 cubic metres per hour, which are adequate to supply small villages (El Obeid & Mendelsohn, 2001).

#### 4.4 BIODIVERSITY AND ECOLOGY

The vegetation in the Kavango East Region is homogeneous Kalahari Woodland that is comprised of broad-leafed, deciduous woodlands that vary according to topography and the nature of the soils that support them.

The area where the two erven are located is near the Kavango River banks and the vegetation mainly consists of forests with distinctive trees, such as Knob thorn, Weeping Wattle and Jackal berry with dense shrubby undergrowth. Large areas of reeds grow in the river margins in the floodplains of the Kavango River.

According to Mendelsohn, anthropogenic activities such as vegetation clearing, especially in developed areas such as Rundu has led to the disappearance of much of the wildlife that used to occur along the Kavango River. Most species of wildlife are now mostly confined to conservation areas outside urban areas.

As shown on picture 3 below, currently Erf 1528 & 1530 are covered with some indigenous trees and grass species. The trees predominantly comprise of *Acacia erioloba* (camel thorn), *Schinziophyton rautanenii* (mangetti tree), *Albizia versicolor*, *Ziziphus mucronata* (buffalo thorn), *Dichrostachys cinerea* (sicklebush) and *Baphia massaiensis* (the prominent shrub in the area). *Eragrostis* species dominate the grass in the area.

The grass *Cynodon dactylon* (couch grass) and *Phragmites australis* (reeds) dominates the vegetation near the riverbanks. *Phragmites australis* grow tall on the edges of the main channel of the river.



**Picture 3:** Vegetation on erf 1528 & 1530.

#### **4.5 SOCIO-ECONOMIC SETTING**

The economy of Kavango East is vested in the agricultural, manufacturing, trade, and services sectors (which includes government services), and tourism. Agricultural sector is the most important sector in Kavango East, with 47% of the employed population being active in this sector.

The international and interregional road network in the Kavango East Region is well developed. Especially the Trans Caprivi Highway is of great benefit for the Kavango East Region concerning access to local and foreign markets, as well as for tourism. An airstrip in Rundu handles medium-sized airplanes and is serviced by local airlines on a weekly basis.

#### 4.6 ARCHAEOLOGY

The scoping exercise did not discover any archaeological material on the two erven, should there be any such discovery during the course of the lodge facilities construction, the National Heritage Council of Namibia should be informed immediately and all construction activities must be halted. The National Heritage Council will assess the discovery and based on the findings of their assessment they will advise on the way forward.

## 5. PUBLIC CONSULTATION

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### 5.1 OBJECTIVES OF PUBLIC CONSULTATION

Public participation is the cornerstone of the EIA process as this is the stage where Interested and Affected Parties are considered and involved in the decision making process. Its key objective is to assist stakeholders to raise issues of concern and suggestions for enhanced benefits, and to comment on the findings of the EIA. *Namibia's Environmental Management Act No.7 of 2007* and its regulations require that the Interested and Affected Parties be adequately consulted during the EIA process.

### 5.2 PUBLIC PARTICIPATION DURING THE SCOPING PHASE

Interested and Affected Parties (I&APs) during the scoping exercise were given an opportunity to get background information on the proposed development and raise their concerns through newspaper advertisements that called for stakeholders to register as I&AP. Information on the project was provided to Interested and Affected Parties upon request.

**Information to I&APs regarding the proposed rezoning and consolidation of the two erven was disseminated through the following means:**

- **Newspaper Notices**

Newspaper notices were placed in two daily newspapers (*Namibian Sun & Republikein*, which are some of the most widely circulated newspapers in Namibia). The notices were placed once a week for two consecutive weeks as required by the EIA Regulations. The newspaper notices of the



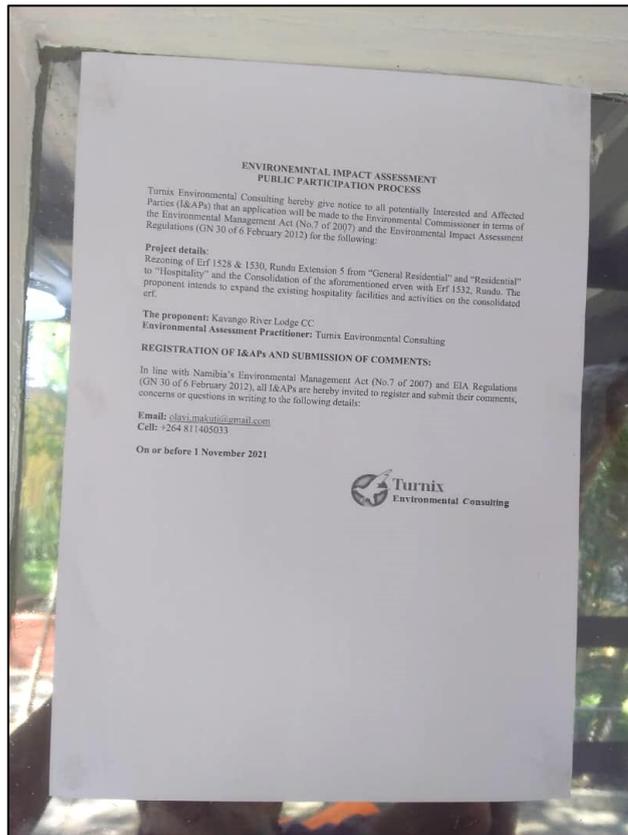
environmental clearance application for the proposed rezoning and consolidation are attached as **Appendix E**. The newspaper notices stated an application for an Environmental Clearance is to be submitted to the Environmental Commissioner, provided information on the nature of the activity and location, invited I&AP to register as such and provided contact details where further information on the application or activity can be obtained.

- **Background Information Document (BID)**

A BID was prepared for the proposed project (**Appendix D**). The BID was intended to provide information about the EIA being undertaken for the proposed rezoning and consolidation and provided: an overview of the project; a description of the manner in which the EIA was undertaken, an indication of how Interested and Affected Parties (I&AP) may become involved in the EIA process; and provided Contact details of the person to whom I&APs may submit their comments. The BID was circulated to all that registered as I&AP.

- **Notice Board**

Posters were fixed at the reception of Kavango River Lodge to provide information to stakeholders as shown on the pictures below. The notice board contained the same information that was in the Newspaper Notices as described above.



**Picture 4:** Poster at the Kavango River Lodge Reception.

- **Comments from I&AP**

No comments or objections regarding the proposed rezoning and consolidation were received from I&AP. Only two inquiries were received regarding potential employment opportunities. The parties were informed that they must contact the proponent directly regarding any opportunities for employment.

## 6. ENVIRONMENTAL IMPACT ASSESSMENT

### 6.1 METHOD OF ASSESSMENT

The significance of the identified impacts of the proposed rezoning and consolidation was assessed using the criteria discussed on table 2 below.

**Table 2:** Criteria used to determine the significance of impacts and their definitions.

CRITERIA	DESCRIPTION
<b>NATURE</b>	This criteria indicates whether the proposed activity has a <b>positive</b> or <b>negative</b> impact on the environment (environment comprises both socio-economic and biophysical aspects).
<b>EXTENT</b>	This criteria measures whether the impact will be site specific; local (limited to within 15 km of the area); regional (limited to about 100 km radius); national (limited to within the borders of Namibia) or international (beyond Namibia's borders).
<b>DURATION</b>	This criteria looks at the lifetime of the impact, as being short (days, less than a month), medium (months, less than a year), long (years, less than 10 years), or permanent (more than 10 years).
<b>INTENSITY</b>	This criteria is used to determine whether the magnitude of the impact is destructive and whether it exceeds set standards, and is described as none (no impact); low (where the environmental functions are negligible affected); medium (where the environment continues to function but in a noticeably modified manner); or high (where environmental functions and processes are altered such that they temporarily or permanently cease).
<b>PROBABILITY</b>	Considers the likelihood of the impact occurring and is described as improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will happen regardless of prevention measures).
<b>DEGREE OF CONFIDENCE IN PREDICTION</b>	This is based on the availability of information and knowledge used to assess the impacts.

The significance of the potential impacts identified for this project is determined using a combination of the criteria discussed on the above table. The significance rating of impacts is described on the table below.

**Table 3:** Definition of the various significance ratings

SIGNIFICANCE RATING	CRITERIA
<b>Low</b>	Where the impact will have a negligible influence on the environment and no mitigations are required.
<b>Medium</b>	Where the impact could have an influence on the environment, which require some modifications on the proposed project design and/or alternative mitigation.
<b>High</b>	Where the impact could have a significant influence on the environment and, in the case of a negative impact, the activity causing it, should not be permitted.

## 6.2 POTENTIAL IMPACTS IDENTIFIED AND ASSESSED

### 6.2.1 CONSTRUCTION RELATED IMPACTS

- **NOISE**

Construction vehicles and equipment such as drillers, compactors and other machineries used to install services during the construction phase can be a nuisance and disturbance. However since the Kavango River Lodge is far from any residential areas, the only people that will be affected by the noise would be the construction workers and visitors to the lodge. Noise and vibrations will also have an impact on animals such as birds and reptiles. Birds are known to abandon their nests if subjected to continuous noise. The nearby riverine ecosystem is home to a number of bird species.

**Table 4:** Assessment of impacts associated with noise.

IMPACT	NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE MITIGATION	PRESCRIBED MITIGATION	POST MITIGATION
Increased noise levels	Negative effect on construction workers, visitors and animals	Local	Medium	Low	Probable	Medium	Medium	All workers on site must be equipped with earplugs to be used when the noise becomes unbearable.	Low
							Medium	Switch off machines that are not used.	Low
							Medium	Construction activities must not start before 08h00 and not exceed 17h00 to avoid disturbing visitor to the lodge.	Low

- **DISTURBANCE OF NATURAL SLOPE AND CLEARING OF VEGETATION**

The construction on the two erven will involve the clearing of some areas to make way for the proposed lodge facilities and associated infrastructure. The removal of vegetation and disturbance to the natural slope can facilitate soil erosion if not done properly. This area of Rundu slopes towards the Kavango River. The combination of the slope and sandy soils makes it very prone to soil erosion as shown on the picture below.



**Picture 5:** Erosion after heavy rains damaged the road in an area near erf 1528 & 1530

**Table 5:** Assessment of impacts associated with disturbance of natural slope and land clearing.

IMPACT	NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE MITIGATION	PRESCRIBED MITIGATION	POST MITIGATION
Disturbance of natural slope	Negative effect on the slope stability.	Site specific	Permanent	Low	Probable	Medium	Medium	All infrastructure should be constructed in such a way that it does not promote erosion especially on steeper slopes.	Low
							Medium	Steep slopes should be strengthened with retaining walls. This method has been used at the old part of the lodge.	Low
Habitat destruction	Negative effect on biodiversity when vegetation	Site specific	Permanent	Low	Probable	Medium	Low	-Big trees on site should be incorporated in the landscaping	Low

	is cleared from site.							as much as possible.	
								-Indigenous vegetation should be used in the landscaping of the lodge to promote biodiversity.	

- **POLLUTION**

There are various types of pollution associated with the construction phase. The most important one is probably chemical pollution from oil spills resulting from the handling of various machineries used during the construction phase. Other sources of pollution include building rubble and empty bags and containers. Construction workers can also pollute the surrounding environs if they are not provided with adequate toilet facilities. If the waste is not handled properly, it can have a detrimental effect on the surrounding environs.

**Table 6:** Assessment of impacts associated with pollution.

IMPACT	NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE MITIGATION	PRESCRIBED MITIGATION	POST MITIGATION
Pollution	Negative effect on the ecosystem when waste emanating from construction activities is not managed.	Local	Medium	Low	Probable	Medium	Medium	Ensure that all waste from construction activities is stored and contained in designated containers and transported to Rundu Waste Disposal Site for proper disposal	Low

- **DUST**

Construction activities are generally associated with dust as the substrate is loosened during construction. Activities such as the clearing of vegetation and levelling of land will slightly affect the air quality. This will especially be an issue during windy days. Dust can affect the health of the construction workers and visitors to the existing part of the lodge.

**Table 7:** Assessment of impacts associated with dust emission.

IMPACT	NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE MITIGATION	PRESCRIBED MITIGATION	POST MITIGATION
Health effect of dust on the construction workers	Respiratory sicknesses can result from prolonged exposure to dust	Local	Medium	Low	Probable	Medium	Medium	- Equip all the workers exposed to dust with dust masks  -Spray the areas that are most affected to minimize dust.	Low
Effect of dust on the ecosystem.	Dust can negatively affect wildlife and the ecosystem in general	Local	Medium	Low	Probable	Medium	Low	Minimize activities that can generate dust during windy days.	Low

- **VISUAL AND SENSE OF PLACE IMPACTS**

The area where erf 1528 & 1530 is located in an area known for its pristine natural surroundings and beautiful views of the Kavango River. Many uses pictures of this area to describe the scenic beauty of Rundu as shown on the picture below. It is therefore important to ensure that any facilities developed here blends in well with the natural surroundings.





**Picture 6:** View of the Kavango River from near erf 1528 & 1530

**Table 8:** Assessment of visual impacts of the project.

IMPACT	NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE MITIGATION	PRESCRIBED MITIGATION	POST MITIGATION
Impact on visual properties of the area	The lodge facilities can have an impact on the visual quality of the area.	Local	Permanent	Low	Probable	Medium	Low	Blending the built structures with the natural surrounding will maintain the natural aesthetic value of the area e.g. buildings should be of earth colours instead of bright colours.	Low

## • EMPLOYMENT OPPORTUNITIES

The project will provide employment opportunities to a few people during the construction phase. This will be a welcomed relief considering the high rate of unemployment in Rundu and in Namibia as a whole.

**Table 9:** Assessment of impacts associated with employment opportunities.

IMPACT	NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE MITIGATION	PRESCRIBED MITIGATION	POST MITIGATION
Employment opportunities during the construction of lodge facilities.	The construction of lodge facilities will create a few job opportunities and this will have a positive economic impact on the surrounding communities	Local	Medium	Low	Probable	Medium	Low	To further enhance the socio-economic benefits of the surrounding communities from the lodge facilities development, the Project Manager should make it mandatory to all contractors that all unskilled work should be given to the residents of Rundu.	Low

## 6.2.2 OPERATION RELATED IMPACTS

### • POLLUTION FROM OPERATIONAL ACTIVITIES

The operation of a lodge produces various types of waste. Common types of waste include solid waste (e.g. papers, plastics and cans) and sewage from toilet facilities. Solid waste will be blown to other parts of the lodge such as the nearby Kavango River and associated flood plains if not managed properly.

**Table 10:** Assessment of impacts associated with pollution from operations of the lodge.

IMPACT	NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE MITIGATION	PRESCRIBED MITIGATION	POST MITIGATION
Pollution from lodge operation	Waste can harm the surrounding ecosystem	Local	Permanent	Low	Probable	Medium	Medium	Institute and maintain a waste management system.	Low

- JOB OPPORTUNITIES**

The current permanent staff complement (28 people) of the Kavango River Lodge will increase once the expansion project is completed. This will provide job opportunities for some people in the hospitality industry.

**Table 11:** Assessment of impacts associated with employment opportunities from lodge operations.

IMPACT	NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE MITIGATION	PRESCRIBED MITIGATION	POST MITIGATION
Job Opportunities	The operations of the lodge will create a few permanent jobs.	National	Permanent	Low	Probable	Medium	Low	The opportunities should preferably benefit Namibians  In cases where the skills required is not available in Namibia, training should be provided to Namibians to fill the positions.	Low

## 7. CONCLUSIONS AND RECOMMENDATIONS

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The significance of all the impacts identified and assessed in this project can be effectively mitigated through the implementation of mitigation measures recommended in the Environmental Management Plan (EMP). No impacts with a “*high*” significance rating are expected on this project. The few impacts that were rated “*medium*” before mitigation for both the construction and operational phase of the project can be successfully reduced to “*low*” with the implementation of the recommended mitigation measures.

This study concludes that the proposed rezoning and consolidation and the subsequent expansion of the current facilities of the Kavango River Lodge will not cause any irreversible threats to the biophysical and socio-economic environment of the area. All the impacts identified and assessed during this study are generic impacts associated with the development of tourism establishments. With strict adherence to the recommended mitigation measures, the significance of these impacts can be reduced to a “*low*” significance rating.

The contributions of the proposed project to the tourism industry will far out-weigh the few impacts identified. This investment is in line with Namibia’s vision for the tourism industry and will contribute to the attainment of Namibia’s sustainability objectives.

It is thus recommended that the project be issued with Environmental Clearance on condition that the mitigation measures recommended in the attached Environmental Management Plan are implemented fully.

## 8. REFERENCES

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## **APPENDICES**

### **APPENDIX A: ENVIRONMENTAL MANAGEMENT PLAN**

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**APPENDIX B: CV OF ENVIRONMENTAL ASSESSMENT  
PRACTITIONER**

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## **APPENDIX C: INTERESTED AND AFFECTED PARTIES REGISTER**

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## **APPENDIX D: BACKGROUND INFORMATION DOCUMENT**

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## **APPENDIX E: PRESS NOTICES**

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