

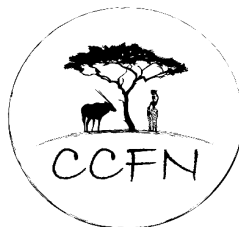
ENVIRONMENTAL SCOPING REPORT (ESR)



(Source: TEC, 2024)

FOR THE PROPOSED DRILLING AND WATER INFRASTRUCTURE DEVELOPMENT AT EPUPA SETTLEMENT, KUNENE REGION

Prepared for:



JANUARY 2025



DOCUMENT INFORMATION		
Title	Environmental Scoping Report – For the proposed drilling and water infrastructure development at Epupa settlement, Kunene Region	
ECC Application Reference number	APP- 005262	
Listed Activity	Activity 8: Water Resource Development 8.1 The abstraction of ground or surface water for industrial or commercial purposes	
Location	Epupa Settlement, Epupa Conservancy	
Proponent	Epupa Conservancy with support from the Community Conservation Fund of Namibia (CCFN) P. O. Box 78, Opuwo	
Author:	Signature	Date
Ms. Laina Alexander		13 th January 2025
Reviewer:		13 th January 2025
Mr. Jonas Heita (EAP)		
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ABBREVIATIONS

DEA	Department of Environmental Affairs
DSR	Draft Scoping Report
CCFN	Community Conservation Fund of Namibia
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
ECO	Environmental Compliance Officer
EIA	Environmental Impact Assessment
EIF	Environmental Investment Fund
EMA	Environmental Management Act (No. 7 of 2007)
EMP	Environmental Management Plan
ESR	Environmental Scoping Report
I&APs	Interested and Affected Parties
MEFT	Ministry of Environment, Forestry and Tourism
SM	Site Manager
TEC	Tortoise Environmental Consultant

1. INTRODUCTION

1.1 Terms of Reference

The Ministry of Environment, Forestry, and Tourism (MEFT) appointed CCFN as the Project Executing Agency (PEA) for the management of a project titled "Poverty Oriented Support to Communal Conservation in Namibia." The project's primary objective is to promote biodiversity conservation and rural development by establishing sustainable Human-Wildlife-Conflict (HWC) management systems within Namibia's communal conservancies.

Tortoise Environmental Consultants has been contracted to carry out Environmental Scoping Studies and Develop Environmental Management Plans for the drilling of seven (7) boreholes and associated water infrastructure development in six (6) conservancies, in the Kunene region.

1.2 Project Rationale

The Kunene region experiences severe drought, with annual rainfall as low as 100 – 300 mm (OPM, 2008), making it one of the most affected areas in the country (DRFN and KULIMA, 2017). This extreme aridity renders the region highly vulnerable to droughts, which severely impact livestock and community livelihoods (Mendelson, 2010).

The number of people living in Epupa and the surrounding villages is estimated to be about 900, livestock at about 3500 goats/sheep and 600 cattle.

A major challenge facing the community members and their livestock is the high risk of attacks by crocodiles which happens often and which forms part of the main.

In summary, it is hoped that the proposed project will:

1. Provide clean water for human consumption
2. Provide drinking water to wildlife
3. Reduce human-wildlife conflicts in the area

1.3 EIA Regulation

The EIA is regulated by the Environmental Management Act, 2007 and the EIA Regulations No. 30 of 2012, which is administered by the Ministry of Environment Forestry and Tourism (MEFT), through the Department of Environmental Affairs (DEA), which is headed by the Environmental Commissioner (EC).

1.4 Listed Activities

The proposed project triggers a number of Listed Activities as set out in the Environmental Management Act, 2007 (Act No. 7 of 2007) (herein referred to as the EMA) and the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011) (herein referred to as the EIA Regulations).

Listed Activities may not be undertaken without an Environmental Clearance Certificate (ECC), and hence an Environmental Impact Assessment (EIA) is required. The EIA entails the development of the EIA Scoping Report and Environmental Management Plan (EMP) which should be submitted to the MET as part of the application for the ECC.

Table 1-1: Listed Activities triggered by the proposed project

Listed Activity	Activity Description	Relevance to the proposed project
Activity 8 Water Resource Developments	8.1 The abstraction of ground or surface water for industrial or commercial purposes	The proposed project involves underground water abstraction.

1.5 What is an Environmental Impact Assessment?

An Environmental Impact Assessment (EIA) is a tool to manage negative environmental impacts that may arise from the proposed development and guides the project design to be more environmental friendly.

The aim of the EIA is to reduce negative impacts (effects) and maximise positive impacts, through the adoption of best environmental practices and application of the precautionary principle.

1.5.1 EIA and EMP Requirements

According to the Environmental Management Act (EMA), Act. No. 7 of 2007 (and the EIA Regulations (GN. No. 30 of 2012), underground water abstraction is a listed activity and an Environmental Impact Assessment (EIA) is required in order to obtain an Environmental Clearance Certificate (ECC) from the Ministry of Environment, Forestry and Tourism (MET) before the commencement of the proposed drilling and water infrastructure development.

1.5.2 EIA Process

An EIA is a systematic process of identifying, predicting, evaluating and mitigating the potential environmental and social effects that may arise from the activities of a proposed project.

For the proposed drilling and water infrastructure development in Epupa settlement, the EIA presents the findings of the assessment for potential impacts that may arise from the construction and operation of the proposed project and recommends remedial measures that should be undertaken to mitigate the effects of the proposed activity on the environment (Figure 1.1).

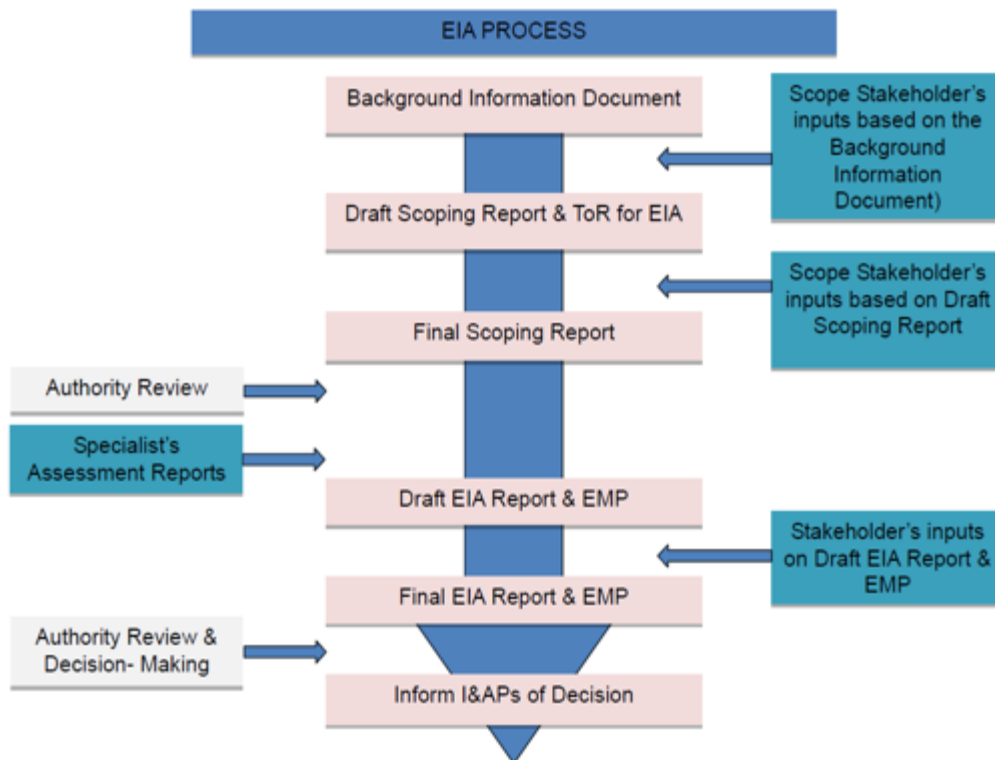


Figure 1-1: EIA flow diagram

1.5.3 Identification and Mitigation of Impacts

The backbone of the EIA report entails identification of impacts (whether real or perceived) and recommendations on suitable mitigation measures to ensure compliance with the principles of environmental management and highlight risks and measures to ensure an environmentally friendly development.

1.5.4 Purpose of the EIA Scoping Exercise

The purpose of this EIA scoping exercise is to:

- Provide description of the proposed activity;
- Describe the affected environment (proposed area),
- Identify potential environmental impacts / aspects of concern;
- Describe the methodology followed to assess the potential impacts;
- Address concerns raised by stakeholders in the Comments and Response Report – CRR);
- Mitigate negative impacts that may arise from the proposed project

1.5.5 Public Participation Process (PPP)

The EIA process is underpinned by public and stakeholder consultations. Comments made during the public participation should be properly captured and addressed in the EIA Scoping report and EMP respectively.

Consultation with the public forms an integral component of the EIA process. The Public Participation Process (PPP) allows Interested and Affected Parties (I&APs) to raise issues and concerns related to the proposed project which they feel should be considered in the EIA process and development of the project. The environmental assessment identifies feasible mitigation measures that can be implemented to address the identified issues of concern.

The following activities and documents are required in accordance with the EMA:

- Two Newspaper articles
- Site notices
- Development and circulation of the Background information document
- Public meeting
- Scoping Report

Interested and Affected Parties (I&APs) that may be consulted upon during the PPP may include, but not limited to communities, national, regional and local authorities, environmental groups and civic associations.

The PPP undertaken for the proposed project is detailed in Chapter 5.

1.5.6 Rehabilitation

The EIA should not only focus on mitigating the impacts of the activity during the active operations but also should go further and recommend rehabilitation measures at project closure (when activities cease). Rehabilitation measures should not be parked waiting for project closure but should be implemented incrementally throughout the project lifespan.

1.5.7 Environmental Management Plan (EMP)

In-addition to the EIA Scoping Report, an Environmental Management Plan (EMP) is required under the EMA as part of the ECC application. The EMP is key document and consists of the set of measures to be taken during implementation and operation to eliminate, offset, or reduce adverse environmental impacts to acceptable levels. Also included in the plan are the actions needed to implement them (Ministry of Environment and Tourism, 2008).

The EMP has been developed and is attached to the ESR.

1.5.8 Application for ECC

Upon completion, the EIA Scoping Report and Environmental Management Plan (EMP), will be submitted to MEFT for review and decision, in accordance with Section 8 of the EIA Regulations.

1.6 Scope and Purpose of this Report

The purpose of this report is to present the findings of the EIA for the proposed drilling and water infrastructure development, as part of the application of the Environmental Clearance Certificate (ECC).

The environmental assessment has been undertaken in accordance with the requirements of the Environmental Management Act, 2007 and the EIA Regulations.

1.7 Environmental Assessment Practitioner

Tortoise Environmental Consultants (TEC) has been appointed to carry out the requisite Environmental Impact Assessment (EIA) and develop an Environmental Management Plan (EMP), as part of the application for an Environmental Clearance (EC) for the envisaged drilling and water infrastructure development.

1.8 Alternatives Considered

As stipulated in the Environmental Management Act (EMA) and EIA regulations, alternatives should be considered during the project design, to determine if an alternative site (different locality) or alternative project (different project) would yield better socio-economic benefits.

No alternative sites have been identified or considered for this project.

2. PROJECT INFORMATION

2.1 Project Location – Epupa Settlement

The Epupa Settlement is located in Epupa Conservancy in Kunene region.

Epupa settlement located at the renowned Epupa falls is major tourist attraction with 5 lodges and campsites, a police station, a clinic, a school and several shops. The settlement is surrounded by villages nearby with livestock from these villages mainly utilising the water from the river.

Location: GPS coordinates: Latitude -17.007149 and Longitude 13.251700



Figure 2-1: Epupa borehole site

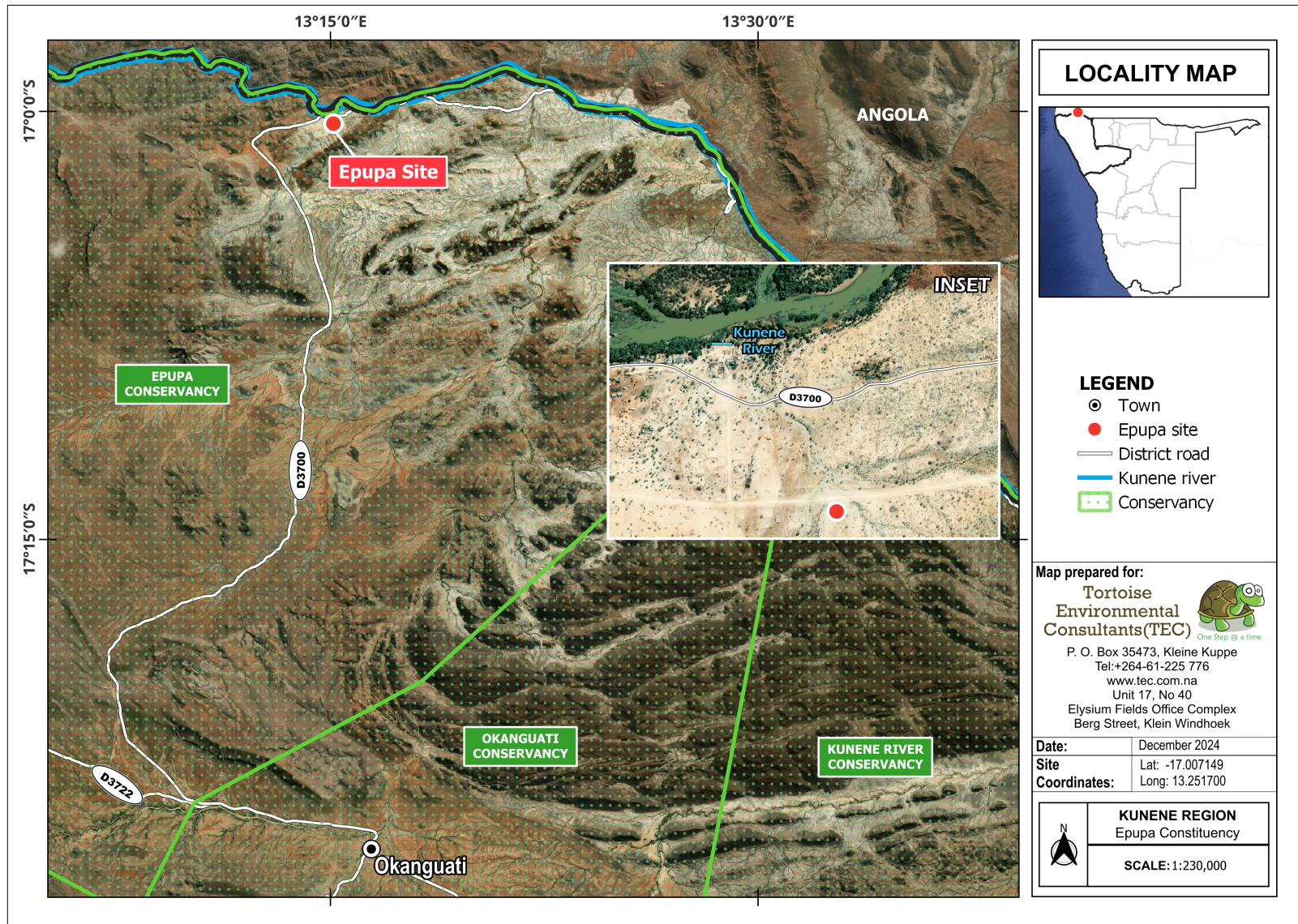


Figure 2-2: Locality map of proposed borehole site in Epupa Settlement

2.2 Water Demand – Overview

The number of people living in Epupa and the surrounding villages is estimated to be about 900, livestock at about 3500 goats/sheep and 600 cattle.

A major challenge facing the community members and their livestock is the high risk of attacks by crocodiles which happens often and which forms part of the main motivation for this initiative to provide cleaner and safer water for the community.

The plan is therefore to drill and equip a borehole with a solar pump and erect water storage tanks and troughs for livestock.

Table 2-1: Water demand in the settlement

Water User	Quantity/Units	Water demand per unit (L)	Water demand per day (L)
Large Stock	600	50	30 000
Small stock (goats/sheep)	3500	20	70 000
People	900	50	45 000
Total			145 000

2.3 Existing water source

The table below presents the existing water source/infrastructure as well as the proposed intervention.

Table 2-2: Proposed water infrastructure development at Epupa

Existing infrastructure	Description	Proposed/desired intervention
<ul style="list-style-type: none"> No existing water infrastructure in place for the targeted community. Private water extraction from the river by lodges, campsites, clinic, police and school. 	<ul style="list-style-type: none"> Water collected directly from the river for domestic use by the residents Livestock access water from the river. 	<ul style="list-style-type: none"> Drill borehole Install with solar pump Water storage facility Troughs for livestock and pipe water about 800 metres away for further individual households connections

3. LEGAL FRAMEWORK

This chapter outlines the regulatory framework applicable to the proposed project. Table 3.1 provides an overview of applicable policies, plans and strategies and Table 3.2 provides a list of applicable national legislation.

Table 3-1.1: Policies, Plans and Strategies

Policy / Plan	Relevancy/Summary	Applicability to the Proposed Project
5 th National Development Plan (NDP) and Vision 2030	Outlines the country’s national development ambitions, in line with the Harambee Prosperity Plan, and Vision 2030. NDP5 incorporates the principles and recommendations contained in the Stockholm Declaration on the Human Environment (1972) and associated Action Plan, as well as Agenda 21 which merged from the Convention on Biological Diversity, Rio De Janeiro (1992).	The proposed project is a development that forms part of the bigger picture of achieving economic progression, social transformation and environmental sustainability.

Table 3.2: National Statutes

National Statutes	Relevance/Summary	Applicability to the Proposed Project
Environmental Management Act, 2007 (Act No. 7 of 2007) and associated regulations, including the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011).	<p>The Act aims to promote sustainable management of the environment and the use of natural resources by establishing principles for decision-making on matters affecting the environment.</p> <p>It sets the principles of environmental management as well as the functions and powers of the Minister. The Act requires certain activities to obtain an environmental clearance certificate before project development.</p> <p>The Act states that an EIA may be undertaken and submitted as part of the environmental clearance certificate application.</p>	<p>This EIA report (and EMP) documents the findings of the EIA process undertaken for the proposed project, which will form part of the environmental clearance application.</p> <p>The EIA process and associated report have been undertaken in line with the requirements under the Act and associated regulations.</p>

National Statutes	Relevance/Summary	Applicability to the Proposed Project
<p>Revised National Policy on Human Wildlife Conflict Management (HWCM)</p>	<p>The National Policy on Human Wildlife Conflict Management was developed in 2009 to manage human-wildlife conflict and advance socio-economic developmental needs for rural communities. The policy was revised in 2018 to enhance the HWC mitigation measures.</p>	<p>By drilling a new borehole, this project aligns with the policy's goal of minimizing human-wildlife conflicts by providing a separate, reliable water source that benefits both the community and wildlife.</p> <p>Ensuring that wildlife, such as elephants, have access to sufficient water reduces their encroachment into the homesteads, reducing potential damage to infrastructure and preventing harm to both people and animals.</p>
<p>Water Act, 1956</p>	<p>This rather out-dated Act that remains in force, provides for the control, conservation and use of water for domestic, agricultural, urban and industrial purposes; to make provision for the control, in certain respects, of the use of sea water for certain purposes; and for the control of certain activities on or in water in certain areas. The Ministry of Agriculture, Water and Land Reform (MAWLR) Department of Water Affairs is responsible for administration of the Water Act.</p>	<p>Water pollution is an offence as per Section 23 of the Water Act.</p> <p>The Act stipulates obligations in Part 13 of general provisions relating to water pollution and prohibits the discharge of wastewater, effluent or waste without licence and sets forth specific requirements for such licence.</p> <p>The EMP sets out measures to avoid polluting the environment.</p>
<p>Water Resources Management Act 2004 (Act No. 24 of 2004)</p>	<p>Whilst approved and published in the Government Gazette, it is not legally enforced.</p> <p>Based on the National Water Policy and provided for the management, development, protection, conservation, and use of water resources; and it established the Water Advisory Council, the Water</p>	<p>Whilst not in operation, it is best practice to adhere to the conditions in this Act.</p> <p>The 2013 Act would repeal this Act, therefore conditions in the 2013 Act have been reviewed.</p>

National Statutes	Relevance/Summary	Applicability to the Proposed Project
	Regulatory Board and the Water Tribunal	
Water Resources Management Act, 2013 (No. 11 of 2013)	<p>Whilst enacted it has not yet come into operation, and needs approval from the Government.</p> <p>This Act provides a framework for managing water resources based on the principles of integrated water resource management. It provides for the management, protection, development, use and conservation of water resource, and for the regulation and monitoring of water services and for incidental matters</p>	<p>Whilst not in operation, it is best practice to adhere to the conditions in this Act.</p> <p>The Act sets out obligations in order to avoid water pollution Section 44 stipulates the requirements for a licence to be held for the abstraction and use of water.</p> <p>These have been incorporated into the EMP to minimise water pollution.</p>
Soil Conservation, 1969 (Act 76 of 1969) and the Soil Conservation Amendment Act (Act 38 of 1971)	Makes provision for the prevention and control of soil erosion and the protection, improvement and the conservation, improvement and manner of use of the soil and vegetation.	Through vegetation removal there may be the risk of affecting soil quality. Measures shall be taken to avoid this which are set out in the EMP.
Forest Act 12 of 2001 Forest Act Regulations 2015	<p>To provide for the protection of the environment and the control and management of forest.</p> <p>The Act and Regulations have the following stipulations that may be relevant to the proposed project:</p> <ul style="list-style-type: none"> - Approval from the Director may be required for the clearance of vegetation on more than 15 hectares (Section 23, subsection 1 (b)). - Tree species and any vegetation within 100m from a watercourse may not be removed without a permit (Section 22, subsection 1 (b)) - Provision for the protection of various plant species. This includes the proclamation of protected species of plants and the conditions under which these plants can be disturbed, conserved, or cultivated. 	<p>There may be some vegetation removal as part of the proposed project.</p> <p>There is no vegetation falling within 100m of the river, no permit shall be obtained prior to clearance.</p> <p>The proponent shall undertake all activities in line with the conditions stipulated in the Permit and a valid permit shall be obtained throughout vegetation clearance activities. It is unlikely that a permit shall be required.</p>



National Statutes	Relevance/Summary	Applicability to the Proposed Project
National Heritage Act, No. 27 of 2004.	The Act provides for the protection and conservation of places and objects with heritage significance.	There is potential for heritage objects to be found on the development site, therefore the stipulations in the Act have been taken into consideration and are incorporated into the EMP.

4. AFFECTED ENVIRONMENT

The environmental baseline for the proposed project has been collected through a desktop study as well as a site assessment.

4.1 Regional Baseline

4.1.1 Socio-economic

The majority of the population within the region live in rural areas. Raising cattle, sheep, and goats is the primary source of income in the Kunene region. Thus, farming is a challenging business, and because farmland is rarely productive, animal concentrations are typically low (Mwinga et al., 2022). Additionally, the landscape is outside the veterinary cordon fence, which regulates animal movement as a preventative precaution against foot and mouth disease. However, the practice of raising livestock is becoming increasingly risky due to the frequent, extended droughts.

During the prolonged drought that has been occurring since 2012—2016 being especially bad—farmers have lost a great deal of cattle. Water is another significant constraint because the landscape is solely dependent on diminishing subterranean water sources that can only be reached by deep boreholes, except for the Epupa Constituency, which has access to the Kunene River.

4.1.2 Climate

Kunene's rainfall is often low and extremely erratic, resulting in years of heavy rain followed by extreme dry weather. The yearly average rainfall varies from 0mm on the coast to 340mm in the east (Environmental Investment Fund, n.d).

Except for 2022, the Kunene region has had a prolonged drought for the last ten years (Mwinga et al., 2022). Farmers were thus compelled by the circumstances to relocate from their communities to places where there was greater pasture available for their animals. Many goats and animals have died over the years, leaving most people without any source of income.

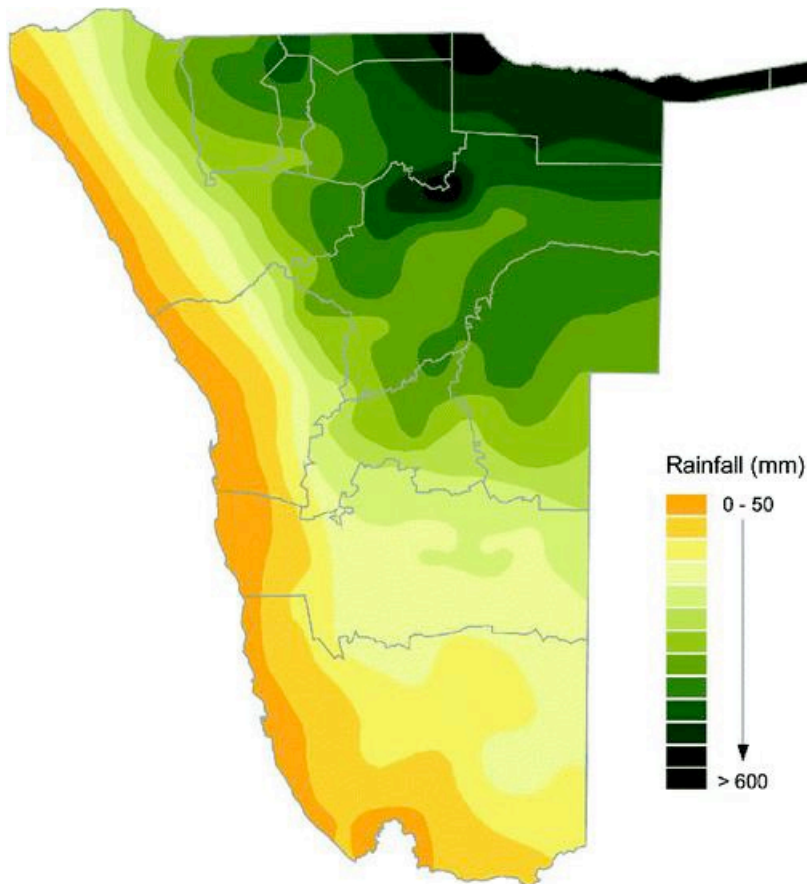


Figure 4-1: Namibia Rainfall Pattern (First Capital Namibia, 2022)

4.1.3 Topography, Landscape and Soils

The natural mountainous scenery, rocks, minerals, soil, underground water, springs, and rivers are the region's most significant resources (Mwinga, et al., 2022). Rock formations offer some mining opportunities, which may benefit the region economically (Mwinga, et al., 2022). Furthermore, the soil, underground aquifers, springs, and perennial rivers all have a significant impact on food production and tourism in the region Kunene Region is a natural wonderland stretching back 250 million years, with fascinating and vividly visible rock formations (Mwinga, et al., 2022). The region has a diverse range of rock formations, commonly found in valleys, escarpments, mountains, and plains.

4.1.4 Surface and groundwater

The Kunene region is located within the hydrogeological regions of Kaokoveld and Northern Namib (Figure 4.2) (Salom, 2023). The region has generally low groundwater potential and the area with aquifer potential exhibits rainfall characteristics diminishing westwards (Lohe et. al., 2021). The region is well-known for the many springs that the Sesfontein push created, but due to the low number of drilled boreholes and the paucity of groundwater research conducted in the area, little is known about the properties of the aquifer in this region (Lohe et al., 2021).

Although groundwater potential is largely determined by recharge from rainfall, groundwater potential is also influenced by the degree of metamorphism (Lohe et al., 2021).

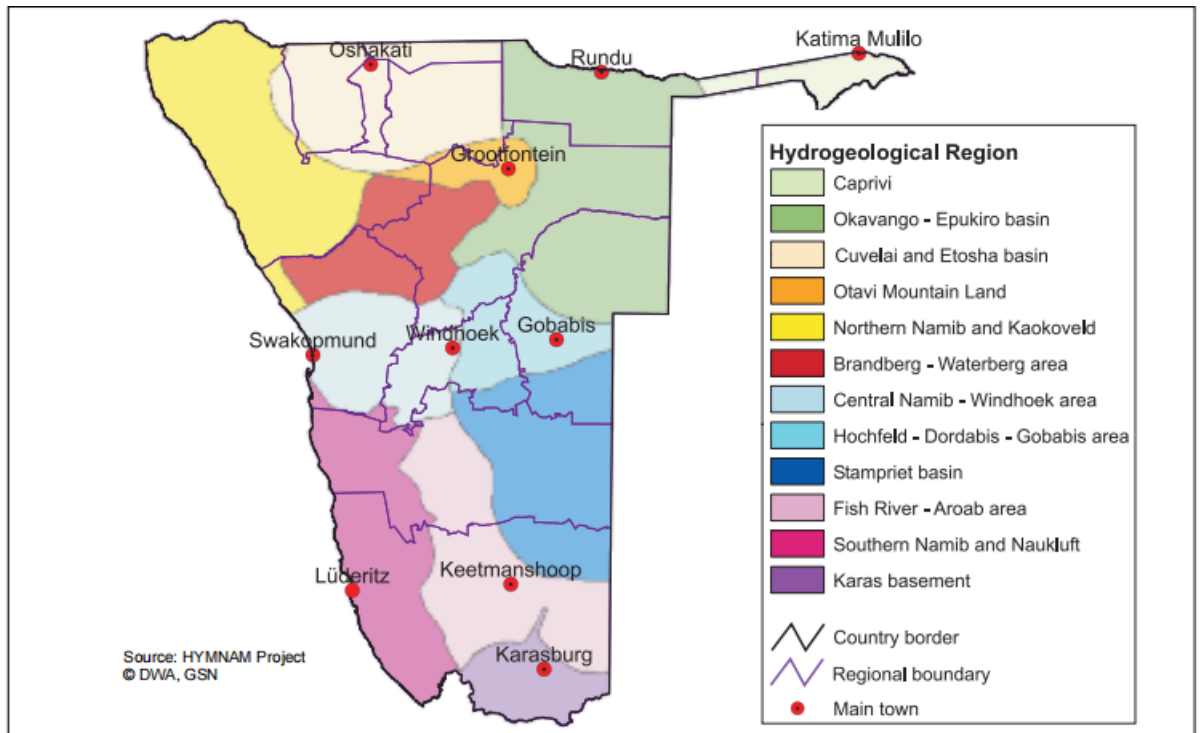


Figure 4-2: Hydrogeology of the Study area (Christellis et al, 2001)

4.1.5 Vegetation

The Kunene region is primarily covered in mixed woodlands with various species of Acacia, Cammiphora, Terminalia, and Mopane savanna (*colophospermum mopane*). This landscape area also has grass species like Stipagrostis spp. and Bushman grass (EIF, n.d).

4.1.6 Wildlife

From an evolutionary perspective, the biodiversity of this area has been significantly impacted by the long history of aridity experienced by this region (CCFN, 2020). It has continued to be a reasonably stable center for the development of species found in dry savanna and the desert, leading to the emergence of distinct assemblages with high endemism and a variety of sophisticated adaptations to arid environments (Lovegrove 1993).

The area's megafauna includes black rhinos, giraffes, and elephants that have adapted to live in the desert (CCFN, 2020). These animals live in riverbeds and use trees like Faidherbia albida (Joubert and Mostert 1975). There is no other unfenced black rhino population in the world except the one in this region. The area is home to several other species, including black-faced impala, kudu, springbok, gemsbok, and Hartmann's mountain zebra (CCFN, 2020). Among the predators are lions, cheetahs, and brown spotted hyena.

5. PUBLIC PARTICIPATION PROCESS

Public consultation is a requirement by law (EMA No 7 of 2007) to be incorporated into an EIA process, hence it is a fundamental part of the EIA. Public consultation ensures robust decision-making by involving Interested and Affected Parties (I&APs).

The PPP has therefore been structured to provide I&APs an opportunity to gain more information on the proposed project and for them to provide inputs through the review of documents/reports, and to flag any issue of concern during the PPP process.

5.1 Authority Consultation

Consultations were done with the Epupa Conservancy during the EIA field assessment exercise, through which due information and documentation were provided to the Environmental Assessment Practitioner (EAP).

5.2 Newspaper Adverts

Section 21 (c), stipulates that ECC applications should be advertised once a week for two consecutive weeks in two newspapers that are widely circulated in Namibia.

However, due to the remoteness of the settlement, the community was informed through the conservancy office.

5.3 Public Meetings – Free Prior Consent

Free Prior Informed Consent public meetings were held at Epupa settlement on the 22nd November 2024. These consultations emphasised transparency, mutual respect and cultural sensitivity, ensuring that the proposed project aligns with the community's needs and values.

According to the Legal Assistance Centre (n.d), FPIC consists of the following elements which were all considered for this project:

- **Free:** Under Namibian law, consent is not considered valid if obtained through manipulation or coercion. It is therefore crucial to ensure that consent for development projects is given voluntarily. This requires that the responsibility for obtaining consent does not solely rest with the project developer or the State. Indigenous communities are required to actively participate in the process and have sufficient access to judicial remedies to safeguard their rights against potential harm.
- **Prior:** Consent must be obtained before the State issues final authorization for any project that could impact the rights, lands, territories or resources of indigenous people. The affected communities should be given adequate time to fully understand the information provided.

- **Informed:** The FPIC process requires meaningful consultation and participation by affected communities, facilitated by the comprehensive and accurate disclosure of information. According to the Convention on Biological Diversity's Working Group, this information should include the nature of the proposed project, size, scope, purpose, duration and the affected areas. Communities are also to receive preliminary assessments of the impacts of and details about those involved in its development. Full disclosure of potential risks, such as negative environmental impacts, disruptions to significant sites, must also be provided, along with a realistic outline of the project's foreseeable implications.
- **Consent:** Consent entails meaningful consultation and participation in all phases of the project, from initial planning to monitoring and eventual closure. Indigenous people must have the right to participate through representatives of their choice and identify any special measures necessary for effective inclusion. Additionally, they are allowed to seek advice or legal representation from experts of their choices.

6. IMPACT ASSESSMENT METHODOLOGY

6.1 EIA Methodology

The EIA methodology applied to this EIA has been developed using the Namibian Draft Procedures and Guidance for EIA and EMP (Republic of Namibia, 2008); international and national best practice; and over 20 years of combined EIA experience. The method of each step in the EIA process is described in the next sections.

6.1.1 Screening

As per the Draft Procedures and Guideline for Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) (Ministry of Environment and Tourism, 2008), the determination of a proposal and if it triggers a Listed Activity in the EMA is the first stage of the EIA process. The proposed project triggers several Listed Activities as per Section 1.4 and therefore an ECC is required.

6.1.2 Scope of Assessment

The Scoping Process is a fundamental stage in the EIA process. Through a high-level assessment, the likely effects and severity of effects as a result of the development and operations of a proposed project can be identified. Any likely significant effects are taken forward for further assessment (detailed EIA). This stage is important in the EIA process to enable the assessment to be concise and focus on key issues that are central to efficient decision making.

If no likely significant effects are anticipated, a detailed EIA is not undertaken and a Scoping Report detailing the high-level assessment is submitted as part of the ECC application.

As there was uncertainty around the potential effects and their severity, a scoping process was undertaken for the proposed development. The Draft Procedures and Guideline for Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) (Ministry of Environment and Tourism, 2008) were followed to undertake the scoping stage.

The baseline environment that could be affected by the project was reviewed and potential effects on receptors identified. Receptors under the following aspects were considered (Ministry of Environment and Tourism, 2008):

- | | |
|-------------------------------------------|---------------------------|
| • Geology and soils | • Air quality |
| • Topography | • Sound levels |
| • Groundwater and surface water resources | • Socio-economics |
| • Environmentally sensitive areas | • Infrastructure services |
| | • Cultural resources |
| | • Project Economics |

Embedded mitigation and industry best practice measures were considered in the review and conclusion drawn identifying those effects that needed to be assessed further due to the potential severity and significance.

The findings of the scoping process are presented in **Error! Reference source not found..**

6.1.3 Detailed Impact Assessment

Through scoping, potential significant effects were identified. These potential effects are then considered further to determine the level of significance and identify additional mitigation required to avoid, reduce, or compensate for the effect.

6.1.4 Impact Significance

The level of significance is identified through the assessment process in order to understand the potential severity of the effect and identify appropriate mitigation. The significance of effect after mitigation is also considered during the decision-making.

The significance of an impact is determined by considering and measuring the temporal and spatial scales and magnitude of the project and the specific activities associated with the project.

6.1.5 Impact Assessment Criteria

For each impact, the **EXTENT** (spatial scale), **MAGNITUDE** and **DURATION** will be 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 mitigation described in the Scoping Report and EMP would represent the full range of plausible and pragmatic measures.

Table 6-1: Assessment criteria for the evaluation of impacts

CRITERIA	CATEGORY	DESCRIPTION
Sensitivity or importance/value of receptor	High	Of value, importance or rarity on a national scale, and with very limited potential for substitution; and/or Very sensitive to change, or has little capacity to accommodate a change.
	Medium	Of value, importance or rarity on a regional scale, and with limited potential for substitution; and/or Moderate sensitivity to change, or moderate capacity to accommodate a change
	Low	Of value, importance or rarity on a local scale; and/or Not particularly sensitive to change, or has considerable capacity to accommodate a change.
	National	Beyond a 20km radius of the site

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial influence of impact	Regional	Within a 20 km radius of the site
	Local	Within a 2 km radius of the centre of the site
	Site specific	On site or within the boundaries of the property
	Zero	
Magnitude of impact (at the indicated spatial scale)	High	Natural and/ or social functions and/ or processes are <i>severely</i> altered
	Medium	Natural and/ or social functions and/ or processes are <i>notably</i> altered
	Low	Natural and/ or social functions and/ or processes are <i>slightly</i> altered
	Very Low	Natural and/ or social functions and/ or processes are <i>negligibly</i> altered
	Zero	Natural and/ or social functions and/ or processes remain <i>unaltered</i>
Duration of impact	Zero	Zero time
	Short Term	Up to 18 months
	Medium Term	0-5 years (after operation)
	Long Term	5- 10 years (after operation)
	Permanent	More than 10 years (after operation)
Probability	Definite	Estimated greater than 95 % chance of the impact occurring.
	Very likely	Estimated 50 to 95% chance of the impact occurring
	Fairly likely	Estimated 5 to 50 % chance of the impact occurring.
	Unlikely	Estimated less than 5 % chance of the impact occurring.
	Zero	Definitely no chance of occurrence
Confidence	Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
	Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
	Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.
Reversibility	Irreversible	The activity will lead to an impact that is permanent.
	Reversible	The impact is reversible, within a period of 10 years.

Significance is not defined in the EIA Regulations, however the Draft Procedure and Guidance for EIA and EMP states the significance of a predicted impact depends upon its context and intensity. Accordingly, the following have been applied in the environmental assessment, which is based on professional judgement:

- **High:** effects are considered to be key factors in the decision-making process. These are generally (but not exclusively) associated with sites and features of national importance and resources/features that are unique and which, if lost, cannot be replaced or relocated.
- **Medium:** effects are considered to be important factors but which are unlikely to be key decision-making factors.
- **Low:** effects are considered to be local factors that are unlikely to be critical to decision-making.

The significance of effect has been derived by applying the identified thresholds for receptor sensitivity and magnitude of change, as well as the definition for significance.

If effects of high significance are identified, the effects are considered to be significant. A further detailed EIA would be deemed appropriate for these effects, to further understand the consequences (through modelling or other assessment techniques) and required mitigation measures to reduce the effect.

6.2 Assessment of Cumulative Impacts

The Environmental Assessment Policy in Namibia requires cumulative environmental impacts to be considered in all environmental assessment processes.

Cumulative impacts can arise when a single resource or receptor is affected by more than one impact or activity of the proposed project. For example, the view of a local resident's property could be altered through the construction phase of the proposed development and noise levels could increase due to excavation activities. In isolation, the impacts may be insignificant, however when combined, the impacts on the local resident may result in a significant impact.

Cumulative impacts may also arise as a result of the combination of two or more projects on the same receptor. The receptor could be affected by the same activities of these projects resulting in the same impact or by completely different activities resulting in different impacts. An example of this is as follows; dust generated during the construction stage of the proposed project may not cause a significant effect in isolation; however, a sensitive receptor (e.g. local resident) may be significantly impacted when dust from the proposed project is combined with noise generated from other projects.

A high-level cumulative impact assessment has been undertaken for the proposed project as part of the scoping phase as the anticipated effects are expected to be local and of minor significance. If effects were determined to be significant, a detailed EIA would be required.

6.3 Mitigation Measures

For each impact assessed during the scoping phase and detailed assessment, mitigation measures are identified to reduce and/ or avoid negative impacts. These mitigation measures are also incorporated in the EMP to ensure that they are implemented throughout the lifespan of the proposed project. The EMP forms part of the Scoping Report, and upon project approval, the implementation thereof, would become a binding requirement.

6.3.1 Mitigation Hierarchy

Actions to mitigate a potential impact can be done in as systematic manner as guided by what is referred to as Mitigation Hierarchy (Figure 4.1).

From the onset, the positive impacts of the proposed project should be **enhanced**, however, where an impact in is inevitable, the following sequence should be followed.

Impact avoidance: This step is most effective when applied at an early stage of project conceptualization and planning. It can be achieved by:

- Not undertaking certain projects or elements that could result in adverse impacts;
- Avoiding areas that are environmentally sensitive; and
- Putting in place preventative measures to stop adverse impacts from occurring.

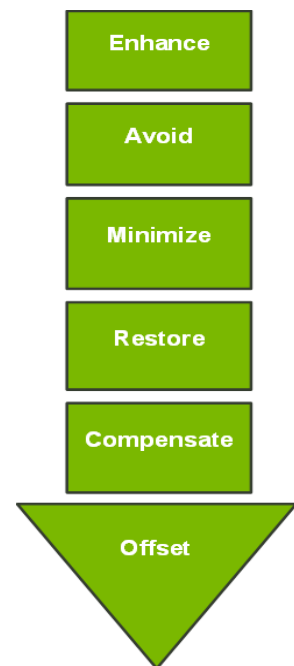


Figure 6-1 - Mitigation Hierarchy

Impact minimisation: This step is usually taken during impact identification and prediction to limit or reduce the degree, extent, magnitude, or duration of adverse impacts. It can be achieved by:

- Scaling down or relocating the proposal;
- Redesigning elements of the project; and
- Taking supplementary measures to manage the impacts.

Impact compensation: This step is usually applied to remedy unavoidable residual adverse impacts. It can be achieved by:

- Rehabilitation of the affected site or environment, for example, by habitat enhancement;
- Restoration of the affected site or environment to its previous state or better; and

- Replacement of the same resource values at another location (off-set), for example, by wetland engineering to provide an equivalent area to that lost to drainage or infill.

7. ENVIRONMENT AND SOCIAL RISKS AND IMPACTS

7.1 Scoping Stage

This section presents the potential impacts that may arise from the proposed drilling activities. The full mitigation measures are presented in the EMP. The assessment includes potential risks to the environment, local ecosystems, and affected communities, to guide the development of mitigation strategies to minimize harm and maximize benefits.

Table 7-1: Scoping Assessment Findings

Aspect	Risk / No-Action	Potential Effect	Mitigation
Groundwater and surface water resources			
Groundwater	Abstraction of water during the operational phase of the project.	Over-abstraction	Mitigation and management measures in the ESMP are deemed suitable to avoid and reduce impacts.
	Water ponding	<ul style="list-style-type: none"> • Ponded water can infiltrate the soil and potentially pollute groundwater. • Breeding ground for mosquitoes. • Can harbor harmful bacteria and pathogens, posing health risks to the surrounding community. 	<ul style="list-style-type: none"> • Construct raised platforms around the water point to prevent ponding during rainfall or overflows.
Cumulative Effects			
Cumulative effects refer to the combined impacts of the project when considered alongside existing, planned, or foreseeable developments in the area. For a water infrastructure upgrading project, such as improving hand-dug wells or installing solar-powered boreholes, these effects can be environmental, social, and economic.			

Aspect	Risk / No-Action	Potential Effect	Mitigation
<p>The Environmental Assessment Policy in Namibia requires that cumulative impacts should be considered in all environmental assessment processes. However, EIAs have traditionally failed to account for cumulative impacts, largely as a result of the following considerations:</p> <ul style="list-style-type: none"> - Cumulative effects may be local, regional or global in scale and dealing with such impacts requires coordinated institutional arrangements. - Environmental assessments are typically carried out on specific developments, whereas cumulative impacts result from broader biophysical, social and economic considerations, which may not always be practical to address at the project level. 			

8. CONCLUSION

The environmental assessment undertaken by TEC followed specific EIA Methodology to identify if there is potential for significant effects to occur as a result of developing and operating the proposed project.

Through the scoping process, all social and environmental receptors were scoped out as it was unlikely that there would be significant effects.

Through further analysis and identification of mitigation and management methods, the assessment concluded that the likely effects on the terrestrial communities is expected to be of low significance.

Various best practice and mitigation measures have been identified to avoid and reduce effects as far as reasonably practicable across the proposed project, as well as ensure the environment is protected and unforeseen effects are avoided.

On this basis, it is of the opinion of TEC that an ECC could be issued, on conditions that the management and mitigation measures specified in the EMP are implemented and adhered to.

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APPENDICES

APPENDIX (1): Free Prior Informed Consent



22 November 2024

To Whom is May Concern:
Dear Sir / Madam

SUBJECT: FREE PRIOR INFORMED CONSENT FOR THE PROPOSED DRILLING OF A BOREHOLE AT Epupa VILLAGE IN EPUPA CONSERVANCY

The above subject bears reference,

We, the undersigned, as the community representatives of Epupa Village in Epupa Conservancy Conservancy hereby certify that we fully understand the above-mentioned project and its benefit to our community. The proposed activity does not interfere with our traditional norms or culture. We wholeheartedly welcome the intent to drill a borehole for our community and encourage adequate consultation during the implementation of the proposed project activities.

This letter serves as the **Free Prior Informed Consent (FPIC)** for the proposed project and intention to drill a borehole.

For the Traditional Authority (TA)

For the Conservancy

Signature: X
Name: Nongava Tjitaava
Title: Councily
Date: 22/11/2024

Signature: [Signature]
Name: Kaatjua
Title: Chairperson
Date: 22/11/2024

Stamp site holder
Samuel K. Ndlaombe
[Signature]

Stamp

APPENDIX (2):

Attendance Register – Public Consultation Meeting


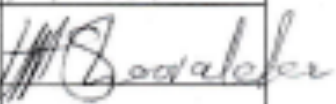
ATTENDANCE REGISTER

FREE PRIOR INFORMED CONSENT FOR THE PROPOSED (FPIC)

DATE: 22/11/24 VILLAGE: ERUPA CONSERVANCY: ERUPA

	Full Name	Organization / Representation	Gender M/F	Telephone Number	Signature
1.	Samuel Mhlonke	Community member	M	0817471394	[Signature]
2.	Eufemia K. Uugwanga	CM	F	0813030872	E. K. Uugwanga
3.	Rauna Jonas	CM	F	0817730380	[Signature]
4.	Rauna Elcandjo	CM	F	0812479818	Rauna E
5.	Lipulani Shitulekoo	CM	M	0816046727	[Signature]
6.	UKISESEKA Mutege		M	0814019299	
7.	Veronica Henriques	CM	F	0813654995	[Signature]
8.	Amandijke M		M		[Signature]
9.	Anamias K	CM	M	0815573997	[Signature]

	Full Name	Organization / Representation	Gender M/F	Telephone Number	Signature
10.	Uzapara mbandura	CM	m	0817579559	M.M
11.	Nahanga Nambunge	CM	f		N-N
12.	mbelulua Talyila	CM	f	0814805760	m-T
13.	Setwa Kapara	CM	f	0816852580	S.K
14.	Mapatasana Tjindinda	CM	F	—	U.T
15.	P-Moses	CM	m	081-353600-P-moses	
16.	Maveja Icarari	CM	f	0817291379	M.K
17.	Kamukajona Nunge	CM	f	—	K.M
18.	Vambakusa rubinge	CM	m	—	M.M
19.	Dutanga Dzimbuka	CM	f	0813552274	D.Z
20.	Icarjoro Ngombe	CM	m	—	K.N
21.	Icarjoro Muehwe	CM	m	—	K.M

	Full Name	Organization / Representation	Gender M/F	Telephone Number	Signature
22.	Kopuita Katfeja	CM	M	0813308678	
23.	Meripi Muheni	CM	M	—	M.M.
24.	Lazarus S. Lazarus	CM	M	0814475847	
25.					

APPENDIX (2):

Environmental Management Plan