RED-DUNE CONSULTING CC

APP: 240603003919

Environmental Scoping Study for The Proposed Drilling of Boreholes for Water Supply at Ozohere Village in Ohungu Conservancy, Erongo Region

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DOCUMENT INFORMATION	
DOCUMENT STATUS	**Final**
APPLICATION NO.	**APP:**
PROJECT TITLE	Environmental Scoping Study for The Proposed Drilling of Boreholes for Water Supply at Ozohere Settlement in Ohungu Conservancy, Erongo Region
CLIENT	Ohungu Conservancy
LOCATION	Ohungu Conservancy, Erongo Region • Ozohere Village
AUTHOR	Mr. Ipeinge Mundjulu 
DATE	17 September 2024

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ACRONYMS

CBNRM	Community Based Natural Resource Management
CCFN	Community Conservation Fund of Namibia
DEA	Department of Environmental Affairs
DWA	Department of Water Affairs
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
EC	Environmental Commissioner
ECC	Environmental Clearance Certificate
ECO	Environmental Compliance Officer
EIA	Environmental Impact Assessment
EMA	Environmental Management Act (No. 7 of 2007)
EMP	Environmental Management Plan
ESI	Environmental Social Indicators
ESMF	Environmental and Social Management Framework
FDM	Frequency Domain Electromagnetic
FPIC	Free Prior Informed Consent
GPS	Global Positioning System
GRM	Grievance Redress Mechanisms
I&APs	Interested and Affected Parties
ILO	International Labour Organization
IRDNC	Integrated Rural Development and Nature Conservation
IWRM	Integrated Water Resource Management
KFW	German Development Bank
L	Litre
m^3	Cubic
MAWLR	Ministry of Agriculture Water and Land Reform
MEFT	Ministry of Environment Forestry and Tourism
MM	Millimetres
Mm^3	Million Cubic

NACSO	Namibian Association of CBNRM Support Organizations
ºC	Degree Celsius
OMDEL	Omaruru Delta
PPE	Personal Protective Equipment
PPP	Public Participation Process
R	Reversible
RD	Red-Dune Consulting CC
SEMP	Social Environmental Management Plan
SM	Site Manager

EXECUTIVE SUMMARY

Before Namibia gained its independence in 1990, residents in the communal areas had few rights to use wildlife. After independence, and in line with Article 95l[1] of the Namibian Constitution, Namibia adopted policies, legal instruments, and strategies enabling communities and private businesses to benefit from wildlife-based tourism and sustainable natural resource management commonly known as Community-Based Natural Resource Management (CBNRM).

The CBNRM concept is based on the understanding that if natural resources have sufficient value to rural communities, and allow for rights to use, benefit and manage, then appropriate incentives for people to use natural resources in a sustainable way will be created through the establishment of a Conservancy. The CBNRM programme links conservation to poverty eradication through developing the conservation, hunting and tourism industries which in turn contribute to the Gross Domestic Product, employment creation and the improvement of the well-being and social upliftment of rural communities.

Ozohere Camp Site is located 40 km north of town Uis, on the banks of the Ugab River which marks the border between Erongo Region and Kunene Region in Ohungu Conservacny. The Ugab River is an Ephemeral River that flows only during rainfall season into the Atlantic Ocean. The campsite is the first joint-venture tourism establishments for Ohungu conservancy. The campsite was supported with basic repairs and upgrades through GIZ and Community Conservation Fund of Namibia (CCFN) in preparation for the return of tourism after the COVID pandemic. These included upgrades to solar power infrastructure, ablution, reception, office, and kitchen facilities that have aided its sustainability and self-sufficiency. In addition to a pre-set minimal monthly land rental fee to the conservancy, the campsite provides livelihood support to 17 Himba women, 10 children, and 5 permanent employees from the local community.

[1] The State to actively promote and maintain the welfare of the people by adopting policies aimed at the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future."

The area of the campsite is arid and water is scarce. The campsite applied for a Grant to the CCFN to be supported with drilling of a water point. CCFN, through the project *"Poverty Oriented Support to Community Conservation in Namibia"* is now supporting Ozohere Campsite in Ohungu Conservancy with a solar powered borehole at Ozohere campsite. The boreholes will serve as a water supply to the campsite and to the surrounding communities.

This intervention is in line with the project's main objective, "t*o contribute to biodiversity conservation and rural development* as well as to the CBNRM programme that links conservation to poverty eradication through developing the conservation, hunting and tourism industries which in turn contribute to the Gross Domestic Product, employment creation and the improvement of the well-being and social upliftment of rural communities.

Section 27 of EMA, has listed the "*Abstraction of ground water"* as an activity that may not be undertaken without Environmental Clearance Certificate. To fulfil this statutory requirements, Red-Dune Consulting CC (RDC) was appointed to develop an Environmental Management Plan (EMP) that would guide drilling and operation of the proposed borehole.

The project's magnitude is relatively small and its potential negative impacts are not significant. Rather, it has positive impact on socio-economic toward uplifting rural communities and poverty eradication. The borehole will be drilling at the campsite, an area free of biodiversity, except boulders of stones that create beautiful landscapes. Excessive groundwater extraction especially can lead to deterioration of water quality and depletion hence it will be crucial to implement groundwater monitoring measures.

1 INTRODUCTION AND BACKGROUND

1.1 Poverty Oriented Support to Community Conservation in Namibia

The Community Conservation Fund of Namibia (CCFN) is a non-profit Association incorporated under Section 21 of Namibia's Companies Act of 2004. Using a foundation model, the CCFN is mandated to raise funds and manage various financial mechanisms such as endowments, sinking or revolving funds, to ensure the long-term sustainability of Community-Based National Resource Management (CBNRM) activities that are carried out by communal conservancies and other entities with a similar legal mandate.

Box 1. A Conservancy is...

- a legally registered area with clearly defined borders and a constituted management body run by the community for the development of residents and the sustainable use of wildlife and tourism.
- managed by a group elected to serve the interests of all its members.
- a place where residents can add income from wildlife and tourism to traditional farming activities.
- a place where wildlife populations increase as they are managed for productive gain.
- a place where the value of the natural resources increases, enhancing the value of the land.
- a forum through which services and developments can be channelled and integrated.
- zoned for multiple uses to minimize conflict and maximize the interests of all stakeholders.

With financial support from the German Government through the KfW Development Bank, CCFN is implementing a project, "Poverty Oriented Support to Community Conservation in Namibia". The project's main objective is to contribute to biodiversity conservation and rural development through the establishment of sustainable Human-Wildlife-Conflict (HWC) management systems in Namibia's communal conservancies.

The project is (i) working together with CBNRM partners to develop and institutionalize long-term mechanisms and structures that make management of HWC part of the sustainability strategy of CBNRM (ii) providing targeted conservancies with the means to address the HWC challenges they face in line with the National Policies of Namibia.

1.2 Community Based Natural Resource Management

Before Namibia gained its independence in 1990, residents in the communal areas had few rights to use wildlife. Predators and foraging wild animals were regarded as threats due to their destruction of crop fields, human attacks, killing of livestock as well as damaging of infrastructures, especially water infrastructure. In turn, community retaliate by killing wild animals, which gave birth to a concept commonly known as Human Wildlife Conflict and Wildlife Crime (HWC-WC).

After independence, and in line with Article 95l[2] of the Namibian Constitution, Namibia has adopted policies, legal instruments, and strategies for addressing HWC-WC. One such strategies is enabling communities and private businesses to benefit from wildlife-based tourism and sustainable natural resource management commonly known as Community-Based Natural Resource Management (CBNRM) which is guided by the National Policy on Community Based Natural Resource Management.

The CBNRM concept is based on the understanding that if natural resources have sufficient value to rural communities, and allow for rights to use, benefit and manage, then appropriate incentives for people to use natural resources in a sustainable way will be created through the establishment of a Conservancy. The CBNRM programme links conservation to poverty eradication through developing the conservation, hunting and tourism industries which in turn contribute to the Gross Domestic Product, employment creation and the improvement of the well-being and social upliftment of rural communities.

[2] The State to actively promote and maintain the welfare of the people by adopting policies aimed at the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future."

1.3 Challenges faced by Conservancies

The CBNRM has yielded into remarkable recovery and increase of wildlife populations, including key predator species and internationally threatened or endangered species such as elephant and black rhinoceros[3]. However, this increased wildlife population resulted into their expanded foraging ranges into communal and freehold farming arear resulting in an increased frequency and severity of Human Wildlife Conflict (HWC) especially involving elephants, feline predators, crocodiles and hippopotamus[4][5].

The conflicts include damage to crops, gardens and infrastructure (water points, fences, kraals, boreholes, etc.), loss of life or injuries to people and livestock mortalities. Climate change is known to contribute to shift of wildlife population to areas that are not heavily affected by drought, which further exacerbate HWC & WC.

Wildlife trafficking became a million-dollar criminal enterprise that has expanded to more than just a conservation concern. The increasing involvement of organized crime in poaching and wildlife trafficking threatens peace, strengthens illicit trade routes, and destabilizes economies and communities that depend on wildlife for their livelihoods.

Namibia is not spared from Wild Crime[6] (WC). Although the country has made remarkable effort in preventing WC, the country is still facing this challenge and requires significant financial resources to address the challenge. Statistics indicates that 27 elephant and 61 rhino were poached in 2018 while in 2019, 39 live and 65 dead pangolin were seized in 2019. Furthermore, conservancy residents experiencing HWC sometimes engage in retaliatory killing to remove problem animals[7].

[3] Republic of Namibia: Revised National Policy on Human Wildlife Conflict Management 2018-2027
[4] Brian T. B. J and Jonathan I. Barnes 2006., Human Wildlife Conflict Study Namibian Case Study
[5] Ailla-Tessa Nangula Iiyambula 2021., Identifying the Spatio-Temporal Distribution and Drivers Of Human-Carnivore Conflict In Epupa And Okanguati Conservancies, Erongo Region Namibia
[66] Republic of Namibia: Revised National Strategy on Wildlife Protection and Law Enforcement 2021 - 2025
[7] Project Document: Integrated approach to proactive management of human-wildlife conflict and wildlife crime in hotspot landscapes in Namibia

2 OHUNGU CONSERVANCY

Ohungu Conservancy was registered in October 2009. It covers an area of 287 km^2 and has a population of 2286 people.

2.1 Location

The Ohungu conservancy is situated in the southern part of Erongo Region, neighbouring Tsiseb in the South, Otjimboyo conservancy in west, Sorris Sorris and !Khoro !goreb to the northwest. **Figure 1.**

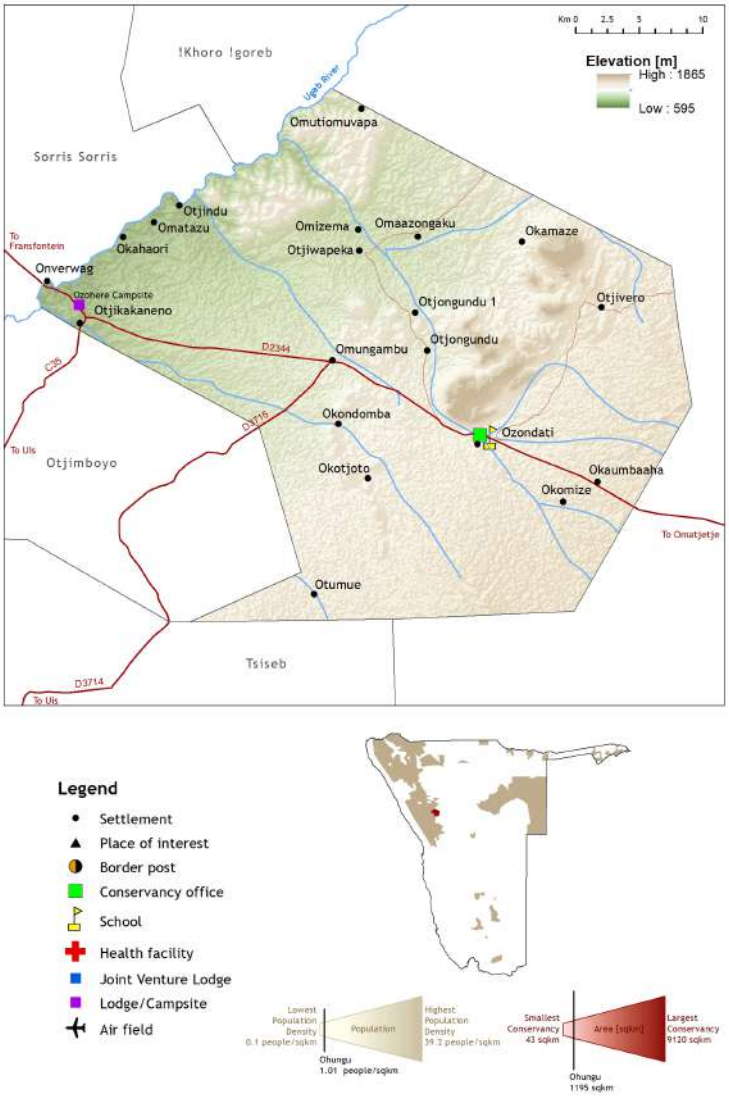

Figure 1. Map of Ohungu Conservancy (Source: NASCO, 2022)

The borehole will be drilled at Ozohere Campsite (Purple square in figure 1 above) GPS - 20.876429°S, 14.986498°E (see figure 2 below).

The Camp Site is located 40 km north of town Uis, on the banks of the Ugab River[8] which marks the border between Erongo Region and Kunene Region in Ohungu Conservacny. The campsite is the first joint-venture tourism establishments for Ohungu conservancy.

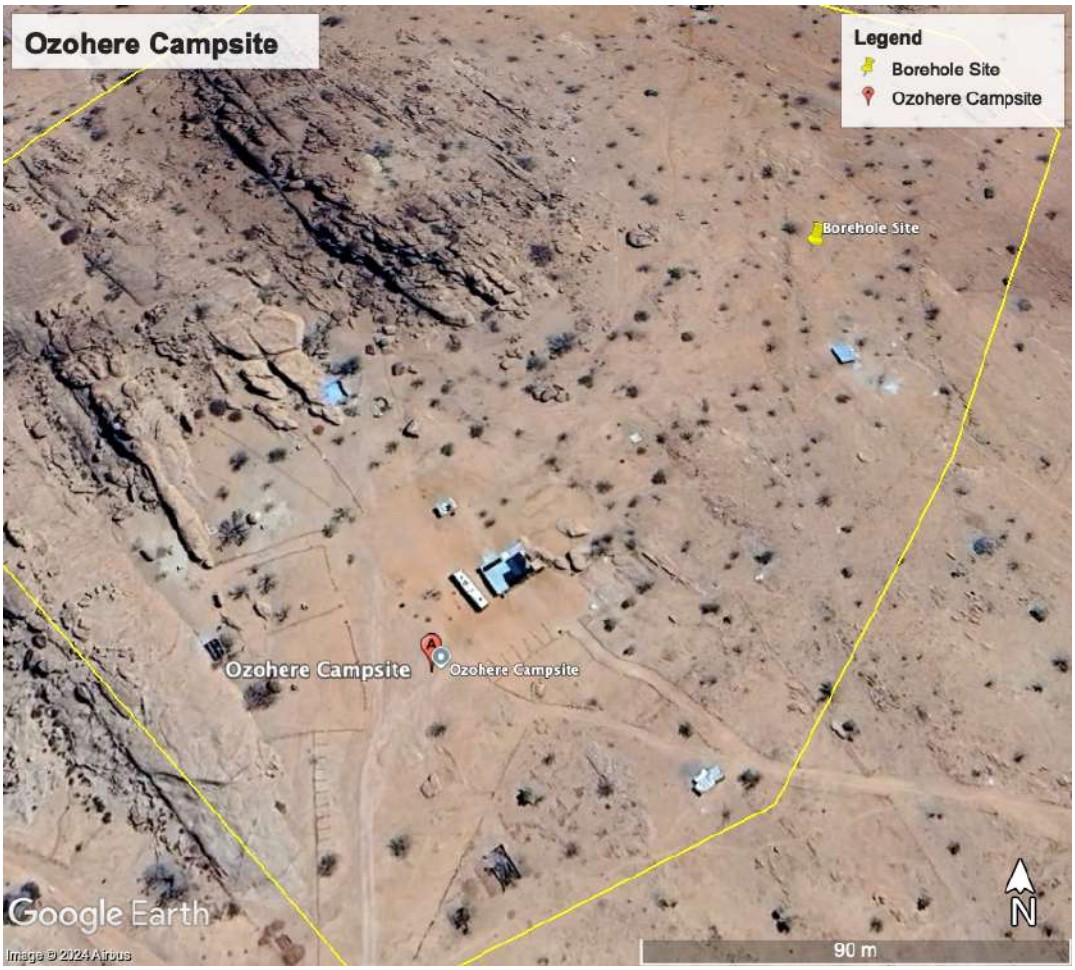

Figure 2. Ozohere Campsite and Borehole site

[8] The Ugab River is an Ephemeral River that flows only during rainfall season into the Atlantic Ocean.

2.2 Support of Ozohere Campsite by Community Conservation Fund of Namibia (CCFN)

2.2.1.1 Post COVID-19

The campsite was supported with basic repairs and upgrades through GIZ and Community Conservation Fund of Namibia (CCFN) in preparation for the return of tourism after the COVID pandemic. These included upgrades to solar power infrastructure, ablution, reception, office, and kitchen facilities that have aided its sustainability and self-sufficiency. In addition to a pre-set minimal monthly land rental fee to the conservancy, the campsite provides livelihood support to 17 Himba women, 10 children, and 5 permanent employees from the local community.

2.2.2 Drilling of a water borehole

The area of the campsite is arid and water is scarce. The campsite applied for a Grant to the CCFN to be supported with drilling of a water point.

With financial support from the German Government through the KfW Development Bank, CCFN is implementing a project, *"Poverty Oriented Support to Community Conservation in Namibia"*. The Project's main objective is to contribute to biodiversity conservation and rural development through the establishment of sustainable Human-Wildlife-Conflict (HWC) management systems in Namibia's communal conservancies.

Through the Project, CCFN is supporting Ozohere Campsite with a solar powered borehole at Ozohere campsite. The boreholes will serve as a water supply to the campsite and to the surrounding communities.

This intervention is in line with the project's main objective, "t*o contribute to biodiversity conservation and rural development* as well as to the CBNRM programme that links conservation to poverty eradication through developing the conservation, hunting and tourism industries which

in turn contribute to the Gross Domestic Product, employment creation and the improvement of the well-being and social upliftment of rural communities.

3 STATUTORY REQUIREMENTS

The protection of the environment is enshrined under Article 95l of the Namibia Constitution. The Environmental Management Act (Act No 7 of 2007) (EMA) and its Environmental Impact Assessment Regulation 2012, has listed Water Resource Developments activities not to be undertaken without an Environmental Clearance Certificate (ECC) as follows.

a) 8.1 The abstraction of ground or surface water for industrial or commercial purposes
b) 8.2 The abstraction of groundwater at a volume exceeding the threshold authorised in terms of a law relating to water resources.

To fulfil the above statutory requirements, Red-Dune Consulting CC (RDC) was appointed to Develop an Environmental Management Plan (EMP) that would guide drilling and operation of the proposed boreholes.

In addition to EMA, there are other statutory requirements that would need to be fulfilled. The Ministry of Agriculture, Water and Land Reform as the custodian of the Water Resources Management Act, No.11 of 2013 instructs that a permit must be obtained prior to any borehole drilling activities can be undertaken.

4 TERMS OF REFERENCE

The scope to develop this EMP is guided by the Terms of References as provided in the EIA Regulation 2012, Section 9 (a-b) but, not limited to the following;

- Provide a comprehensive description of the proposed Project;
- Identify relevant legislation and guidelines for the project;
- Identify potential environmental (physical, biological and social) conditions of the project location and conduct risk assessment;

- Inform Interested and Affected Parties (I&APs) and relevant authorities about the proposed project to enable their participation and contribution;
- Develop an Environmental Management (EMP) that would be a legal guideline for the environmental protection by the project.

5 THE PROPONENT

Ohungu Conservancy is the proponent for this application with financial support from CCFN.

6 PROJECT ALTERNATIVES

The EMA requires impact assessment to explore various project alternatives which aims to ensure that a chosen project component does not have significant impact to the environment. Project alternatives ranges from not implementing the project (no go alternative), when the environmental impacts are severe, or there is high degree of uncertainty. Other alternative considers the project site, technology, and equipment to be used. The description of alternatives is given in **Table 1** below.

Table 1. Project Alternatives

Project Alternative	**Description**	**Advantages**	**Disadvantages**	**Alternative adoption**
No project	Do not implement the project	None	Could threaten the cost benefits of the conservation incentives by conservancy members.	No
Implement the project	Implement the project	Improved water supply	None	Yes
Diesel Power Pump	Use of diesel-powered water pump	Cost effective and quick to implement	Difficult to upkeep with fuel supply Diesel is very costly, and communities always don't have the means to buy diesel.	No
Solar Powered Pump	Use of solar powered water pump	Environmentally friendly. Does not require fuel to operate	The borehole operation could be impacted during cloud cover	Yes

7 DESCRIPTION OF THE RECEIVING ENVIRONMENT

The campsite is located on the boarder of Erongo and Kunene Region. The area geophysical characteries resembles the greater part of southern Kunene Region. Hence, the site environmental description will be using the environmental setting of southern Kunene Region.

7.1 Populational demography

On 13th March 2024 the Namibian Statistic Agency released a preliminary report that gives the provisional results from the 2023 Population and Housing Census (PHC) of Namibia to be 3.02 million people. The population has increased by 909,324 people from the 2.1 million people recorded in 2011, constituting an annual growth rate of 3.0% per annum. This rate is double what was observed in the previous intercensal period (2001 to 2011 which was 1.4% per annum) and is the highest observed since independence (see Figure 3). At this rate, by the year 2050 the population of Namibia would be over 6 million.

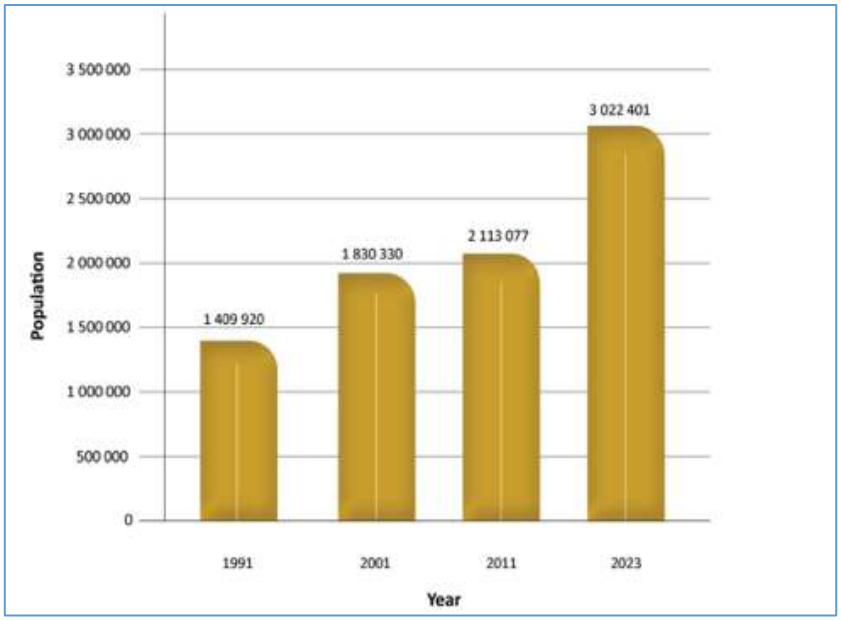

Figure 3. Trend of the Namibia Population

- Females make up a greater proportion of the population in the 2023 PHC as has been the trend for the past four censuses.
- Khomas region remains the most populous region in Namibia with a population of 494,729 people. Ohangwena region closely follows as the second most populous region with a population count of 337,729 people. Omusati is the third most populous region, with a population count of 326,671 people and these are similar trends as observed in the 2011 census.
- Erongo region is the fifth populous region, whose population in 2011 was 150 809 and grew to 240 206 representing 59.3 % change and 7.9% of the total population.
- //Kharas region and Erongo region recorded the smallest household size of 3.1 people per household while the largest household size was recorded in Kavango East and Kavango West Regions, with a household size of 5.3 and 5.5 respectively.
- Average household size has been on the decline since 1991 which is currently at 3.8 persons per household.
- The total number of households has grown by 291,500 (representing a 62.7% increase) over the 464,839 households enumerated in 2011.
- The region with the highest population density is Ohangwena with 31.5, persons per square kilometer, followed by Oshana region with 26.7 and Khomas region with 13.4 persons per square kilometer. //Kharas, Hardap, and Kunene regions are the most sparsely populated regions with 0.7 and 1.0 persons per square kilometer respectively (see Figure 4).

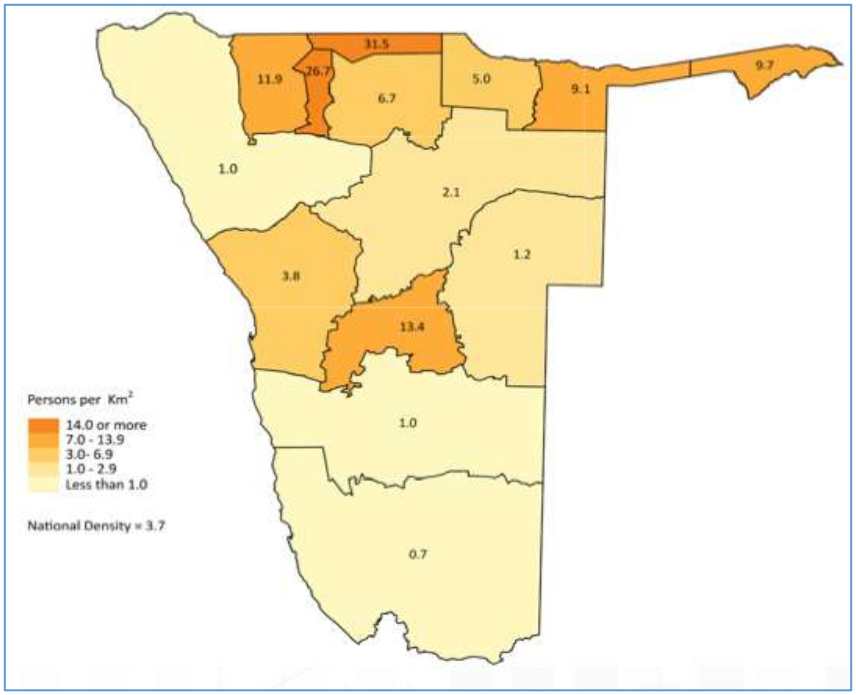

Figure 4. Namibian Regional Population Density

7.2 Demographic Overview of the Erongo Region

The Erongo Region, comprising seven constituencies: Omaruru, Karibib, Daures, Arandis, Swakopmund, Walvis Bay Rural, and Walvis Bay Urban (NSA, 2014) is a dynamic region reflecting diverse population characteristics. Ohungu conservancy is located in Omaruru constituency. The population trend of Erongo region is shown in table 2 below.

Table 2. Population of Erongo Region, 2023

Town	**Population**
Walvis Bay	102,704
Swakopmund	75,921
Arandis	5,726
Henties Bay	7,569
Usakos	5 094

Karibib	6,938
Omaruru	10,670
Total	**240,206**

7.3 Socio-economic profile

The community of Ohungu Conservancy are communal farmers who rear crops and livestock. Tourism is one of the main income generating activity for the conservancy through trophy hunting concession. Often, meat from trophy hunting is distributed to residents.

7.4 Regional Geology and Topography

7.5 Climate

Namibia is the most arid country in Sub-Saharan Africa. The country has high climatic variability in the form of persistent droughts, unpredictable, low, and variable rainfall patterns leading to scarcity of water[9]. The rainfall is highly sporadic ranging from 50mm – 600mm per year which increases from the western part of the country to the eastern part.

The general climatic condition of Erongo Region is arid and dry, characterized by high rainfall Variability, frequent and prolonged periods of drought. In addition, the region has high solar radiation, low humidity and high temperatures lead to very high evaporation rates, which vary between 3800 ml per annum in the south to 2600 ml per annum in the north. In many areas, potential evaporation is about five times greater than the average rainfall. Surface water sources such as dams are subject to high evaporation rates.

Ohungu receives an average annual rainfall of 200 mm. The area temperatures are high with an average maximum temperature between 35^0C and minimum between 14^0C.

[9] Namibia Fourth National Communication to the United Nations Framework Convention on Climate Change. Windhoek: Ministry of Environment Forestry and Tourism, March 2020

7.6 Biodiversity

Largely semi-desert and sparse savannah, Ohungu Conservancy is dominated by the Mopani woodland. Ozohere Campsite area in the northern part of the Conservacny is made up of mountainous area with scattered trees and shrubs (see Figure 5).

Figure 5. Landscape and vegetation at Ozohere Campsite (Borehole site)

Some of the key wildlife species such as Elephant, leopard, cheetah, kudu, gemsbok, ostrich, springbok, steenbok, duiker, mountain zebra ad found in the Conservacny.

7.7 Hydrology and Hydrogeology

Surface water of Erongo Region originated from inland catchment, hence, all rivers in the Region are ephemeral, specifically, the area is influence by the Ugab river, which is a tributary of the Kunene River. Generally, the Region has low groundwater potential and knowledge and understanding of aquifer characteristics in the Region is sparse due to few numbers of drilled boreholes and fewer groundwater studies done in the area. The degree of metamorphism affects the groundwater potential in the Region as it is characterized by granitic and metamorphosed rocks which exhibit low tendency to store groundwater.

Groundwater in the Region is mostly found in fractured and faults underlain by granite and meta-sediments with low yield of water. The risk of over-abstraction in these fractured ‘aquifers is high and common. Small water supply schemes from borehole in fractures in quartzite and granite of the Huab Complex for schools at Anker and Erwee, has their water quality deteriorated due to over-abstraction. The low storage capacity of the rocks combined with erratic recharge and high consumption led to over- abstraction of the aquifer. There are several natural springs in the Region which are critical source of water for human and wildlife but many dries up due to frequent prolonged drought in the Region. Sesfontein an Afrikaans word for ‘six fountains.

There is not much surface water in the Region. The little rain that falls evaporates, seeps into the ground, or is rapidly drained by ephemeral rivers. Well-developed drainage takes the form of deeply incised and structurally controlled stream-courses leading north to the Ugab River and from the elevated area within the conservancy areas.

7.8 Land use

The conservancy is zone into various uses which includes Figure 6;

1) Settlement & Cropping Area
2a) Multiple Use: Livestock Priority
2c) Multiple Use: Tourism Priority
3a) Exclusive Wildlife: All Utilisation
3b) Exclusive Wildlife: Trophy Hunting
3c) Exclusive Wildlife: Tourism
3d) Exclusive Wildlife: No Disturbance

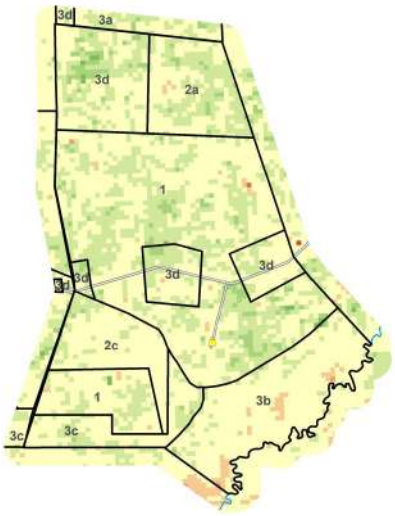

Figure 6. Conservancy Zones (Source: NACSO, 2022)

8 THE NEED AND DESIRABILITY OF THE PROJECT

The project is in line with the CBNRM programme toward reducing HWC-WC and contributing to conservation incentives and poverty reduction. In addition, the project contributes to the aim and objective of the Integrated Water Resource Management (IWRM) for Namibia which aims to achieve a sustainable water resources management regime, contributing to social equity, economic efficiency, and environmental sustainability.

9 POLICY AND LEGAL FRAMEWORK

Namibia has devised relevant policies, regulatory frameworks and institutions to ensure the conservation, sustainable use, access and benefit sharing of natural resources, biodiversity and ecosystems in line with international conventions and national legislation. The country is also party to several international treaties, conventions and multilateral agreements, and takes part in various international standards such as UNDP's SES, reviews and processes that are relevant to sustainable management of resources; access to basic rights including a clean environment.

Table 3. Policy and Legal Framework

Legislation	Relevant authority	Applicability
The Namibia Constitution	**Government Republic of Namibia**	The Namibian constitution is the supreme law of the country and makes provision for environmental protection and sustainable development.
Environmental Management Act No. 7 of 2007	**Ministry of Environment, Forestry and Tourism**	The environmental management act No.7 of 2007 aims to promote the sustainable use of natural resources and provides the framework for the environmental and social impact assessment, demands precaution and mitigation of activities that may have negative impacts on the environment and provision for incidental matters. Furthermore, the act provides a list of activities that may not be undertaken without an environmental clearance certificate.
Environmental Assessment Policy (1995)	**Ministry of Environment,**	The Environmental Assessment Policy for Sustainable development and Environmental Conservation emphasize the importance of environmental assessments as a key tool towards implementing integrated environmental

Legislation	Relevant authority	Applicability
	Forestry and Tourism	management. Sets an obligation to Namibians to prioritize the protection of ecosystems and related ecological processes. The policy subjects all developments to environmental assessment and provides guideline for the Environmental Assessment. The policy advocates that Environmental Assessment take due consideration of all potential impacts and mitigations measures should be incorporated in the project design and planning stages (as early as possible).
Pollution Control and Waste Management Bill (in preparation)	**MEFT, MHSS and others**	The Pollution Control and Waste Management Bill, intents to regulate and prevent the discharge of pollutants into the air and water as well as providing for general waste management.
Public Health Act (Act No. 36 of 1919)	**Ministry of Health and Social Services**	The Public Health Act aims to protect the public from nuisance and states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.
Water Resources Management Act (Act No. 11 of 2013)	**Ministry of Agriculture, Water and Land Reform**	This Act provides a framework for managing water resources based on the principles of integrated water resources management. It provides for the management, development, protection, conservation, and use of water resources. Therefore, water abstraction should satisfy the provisions of the water act (water abstraction / borehole permit should be applied from the respective ministry).

Legislation	Relevant authority	Applicability
Water Act No, 54 of 1956	**Ministry of Agriculture, Water and Land Reform**	This act states that, all water resources belong to the State. It prevents pollution and promotes the sustainable utilization of the resource. To protect these resources, this act requires that permits are obtained when activities involve the following: (a) Discharge of contaminated into water sources such as pipe, sewer, canal, sea outfall and (b) Disposal of water in a manner that may cause detrimental impact on the water resources
Soil Conservation Act No. 76 of 1969	**Ministry of Agriculture, Water and Land Reform**	This act promotes the conservation of soil, prevention of soil erosion. Prevent soil salinification.
National Heritage Act No. 27 of 2004	**Ministry of Urban and Rural Development**	The Act makes provision for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. Part V Section 46 of the Act prohibits removal, damage, alteration or excavation of heritage sites or remains, while Section 48 sets out the procedure for application and granting of permits.
Regional Councils Act, 1992 (Act No. 22 of 1992)	**Ministry of Urban and Rural Development**	The Regional Councils Act legislates the establishment of Regional Councils that are responsible for the planning and coordination of regional policies and development. The main objective of this Act is to initiate, supervise, manage and evaluate regional development.

10 PUBLIC CONSULTATION

Section 21 of the EIA Regulation requires the undertaking of an Environmental Impact Assessment (EIA) to follows a robust and comprehensive public consultation. This is an important process, because it gives members of the public, especially the Interested and Affected Parties to comment or raise concerns that may affect their socio-economic or general environment because of the project. Further, it solicits crucial local knowledge that the Environmental Assessment Practitioner may not have.

The Public Participation Process (PPP) was focused on members of the conservancy. While competent and or regulatory authority such as Ministry of Environment Forestry and Tourism (MEFT), Ministry of Agriculture Water and Land Reform (MAWLR), where consulted during the project development phase for application for the ECC.

10.1 Ozohere Community Consultation

A community meeting was held on 15th July 2024 at Ozohere Campsite (Figure 7).

Figure 7. Community Meeting at Ozohere Campsite (Source: Red-Dune Consulting, 2024).

- The meeting was attended mainly by Ovahimba people that are supported by the Campsite through their Himba Village while the Conservacny was represented by the Secretary (***See Appendix A*).**

- Red-Dune presented the meeting objectives, particularly the requirement of the Environmental Social Safeguards (ESS) and the need for environmental impact assessment and community consultations.
- The meeting was informed that, the proposed water point will be developed with funding from Community Conservancy Fund of Namibia (CCFN) which received funding from the KfW development bank to support communal conservancies to mitigate issues of Human Wild Conflict (HWC).
- KfW require that the money is spent wisely and accounted for to the benefit of the communities and ensure that project implementing agencies observe the highest standard of Environmental and Social Safeguard (ESS) which aims to ensure that the project is environmental and social sustainability.
- The meeting was informed that, the ESS requirement does not be support projects if amongst many red-flags, if it involves:
    - Displacement of people
    - Destroying heritage sites
    - Damaging critical biodiversity habitat
    - Conflict in the community
- The meeting was further informed that the protection of the environment is provided for under the Environmental Management Act (Act No. 7 of 2007) (EMA) and its Environmental Impact Assessment Regulation 2012 where EMA has listed Water Resource Developments activities, such as drilling of boreholes not to be undertaken without an Environmental Clearance Certificate (ECC).
- To obtain an ECC, a Social and Environmental Impact Assessment has to be undertaken, which is one of the core components of the consultation.
- Lastly the meeting was informed that, a consent letter is one of the requisites for the project to be implemented. This consent letter, called 'Free Prior Informed Consent' (FPIC) represent the community in understanding and agreeing to the proposed water development project. The FPIC was explained to the project as follows;
    - **FREE** refers to a consent given voluntarily and absent of coercion, intimidation or manipulation.

- **PRIOR** means consent is sought sufficiently in advance of any authorization or commencement of activities
- **INFORMED** means that community was well informed about the project and they know all information about the project.
- **CONSENT** refers to the collective decision made by the rights-holders and reached through the customary decision-making processes of the affected peoples or communities.

- Free Prior Informed Consent was verbally obtained from the meeting by show of hands ***(See Figure 8 and Appendix B)***.

Figure 8. Consent by Ozohere Campsite Community

Comment by the community;

- The owner of the Ozohere remarked that scarcity of water in our area is one the biggest challenge, when you called me that you are coming, I thought you are coming to drill already". We are happy and grateful for the continued support we are receiving from CCFN. She urged project implementers to act with speed to deliver water to the campsite and the community at larger.

10.2 Site Assessment

The site location for the drilling of the borehole is within the campsite. The area is dry and free of vegetation, except scattered mopane trees. *(see Figure 9).*

Figure 9. Borehole drilling site at Ozohere Campsite

The Campsite is next to Himba Traditional village, which marks one of the tourist attraction of the Campsite (see Figure 10).

Figure 10. Traditional hut at Himba Village

11 ENVIROMENTAL AND SOCIAL IMPACT ASSESSMENT

11.1 Introduction

This chapter outlines the potential impacts (negative and positive) associated with drilling the borehole. The identified impacts are categorized into three components: impacts on the biophysical environment; Impacts on the health and safety; and impacts on socio-economic. It further provide the criteria used for impact assessment. The developed Environmental Social Management Plan (ESMP) for the project is a living document. Hence, impacts that could be identified during future maintenance or upgrade of infrastructures will require an amendment to the ESMP.

11.2 Impact Identification

Potential impacts were identified in accordance to the key Environmental Social Indicators (ESI)[10] and using literature review, site assessment and public participation process and experience for Red-Dune Consulting (see Table 4).

Table 4. Impact identification

Component	Impact	Description	Impact Type
CONSTRUCTION PHASE			
Bio-Physical Environment	Loss of Biodiversity	Poorly-informed or executed project activities could damage critical habitats and change landscape suitability for threatened species. This could be as a result of clearing of area to make provision for project activities which may lead to destruction fauna habitats.	Negative
	Dust emission	Land clearing, digging and excavation of trenches, movement of vehicles and heavy machinery on project	Negative

[10] Guidance Note UNDP Social and Environmental Standards Social and Environmental Assessment and Management July 2022

Component	Impact	Description	Impact Type
		sites, concrete work, transportation of sand to site and concrete stones, cement mixing may create fugitive dust. Uncoordinated / reckless driving on gravels roads could cause low visibility to other road users. Dust could be nuisance to the nearby surrounding and health hazards to the workers.	
	Land degradation / Soil erosion	Uncoordinated movement of heavy vehicle transporting sand and concrete. Further, possible formation of gullies by rainwater run-off may cause soil erosion.	Negative
	Noise and vibration	Noise is one of the major impact caused by construction activities. Trucks, concrete mixers, and drilling equipment produce significant amount of noise that could be nuisance and health hazards to the workers. Increased noise levels interfere in oral communication, disturbance in sleep.	Negative
	Traffic emission	Traffic will generate dust and exhaust emission of SO_2, CO_2, CO, NO_x and particulates. Construction vehicles will contribute to increases in emissions greenhouse gases which contribute to global warming.	Negative
	Waste generation	Construction produce amount of solid waste including, building rubbles, plastic and parts of equipment.	Negative
	Household waste	The workers on site will generate solid waste such as containers, plastics used to carry their food and sewerage.	Negative
	Soil and water pollution	Oil, fuel and lubricant (hydrocarbons) leaks from, machinery and constructing vehicles and cements from mixers could cause pollution of soil and water.	Negative
Health and Safety	Safety risk	Accidents from collision of construction vehicles, and occupational injuries.	Negative
	Health risks	Risks of hearing impairment from excessive noise, respiratory risks from dust inhalation. New social	Negative

Component	Impact	Description	Impact Type
		relationships are often a recipe for spreading of communicable diseases and sexually transmitted diseases such as HIV/AIDS. Furthermore, alcohol and drug use could be prevalent during construction and workers are susceptible to vector diseases such as malaria. Furthermore, the bush working environment makes workers to be prone to venomous insect and snake bites which may lead to fatalities. Other health risk include workers exposure to excessive noise and dust and injuries.	
	Hazardous Impact	Heavy vehicle use a lot of oil and the handling of hydrocarbons will be done on site. The site where grease, oils, lubricant and fuel get handled requires to be properly designed to avoid soil contamination that could contaminate soil and underground water.	Negative
Social Environment	Visual impacts	Poor housing keeping on site, disturbance of surrounding view by the height of the hospital, uncoordinated painting.	Negative
	Employment creation	Namibia is grappling high unemployment especially among the youth. Significant employment opportunities will be created during construction phase and equally for skills and skill transfer.	Positive
	Increase in local economy	Construction provides an opportunity for local people, especially women to sell their produce (food) to construction workers. The local economy will increase from procurement of construction materials and increased buying power.	Positive
	Heritage and Archaeological Resource	Digging and excavation has the potential to unearth archaeology material. Awareness is therefore required to prevent potential damages.	Negative

Component	Impact	Description	Impact Type
OPERATIONAL PHASE			
Water abstraction	Risk of underground over-abstraction water	Uncontrolled underground water abstraction could lead to over-abstraction and deterioration of water quality	Negative
Safety of borehole infrastructures	Theft	Theft of boreholes infrastructures	Negative
	Destruction of water infrastructure by elephant	Potential destruction of boreholes and associated infrastructure by elephants	Negative
	Corrosion of borehole metal casing	The use of poor quality borehole casing could lead to short lifespan of the borehole casing	
Conflict of water use buy the communities	Claiming ownership of boreholes by nearest community members	The community near the borehole my claim ownership of the borehole which could cause conflict in the community	Negative

11.3 Criterial for impact assessment

The criteria used to assess the impacts and the method of determining their significance is outlined in Table 4 below. This process conforms with international best practices and the

Environmental Impact Assessment Regulations of Environmental Management Act, 2007 (Government Gazette No. 4878) EIA regulations.

The core principle of impact assessment followed a mitigation which aims to avoid the negative impact through preventative means, minimise the negative impacts to acceptable low levels and, if the two are not possible, remedy or compensate the impact.

Table 5. Criteria for Impact Assessment

Risk Event	**Rating**		**Description of the risk that may lead to an Impact**
Probability	The probability that an impact may occur under the following analysis		
	1		Improbable (Low likelihood)
	2		Low probability
	3		Probable (Likely to occur)
	4		Highly Probable (Most likely)
	5		Definite (Impact will occur irrespective of the applied mitigation measure)
Confidence level	The confidence level of occurrence in the prediction, based on available knowledge		
	L		Low = limited information
	M		Medium = moderate information
	H		High = sufficient information
Significance	**Severity**	**Rating**	None (Based on the available information, the potential impact is found to not have a significant impact)
	Negligible	1	
	Low	2	Low (The presence of the impact's magnitude is expected to be temporal or localized, that may not require alteration to the operation of the project
	Medium	3	Medium (This impact is probable, limited in scale, expected to be of short term / temporary, can be avoided, managed and or mitigated with simple mitigation measures.)

Risk Event	Rating		Description of the risk that may lead to an Impact
	High	4	High (The impact is definite, mostly predictable, temporal, can be local, regional or national and in long term and reversible. These are impacts that may affect human rights, lands, natural resources, traditional livelihood, critical ecosystem services. The severity of these impact are more limited than sever impacts.)
	Severe	5	**Severe** (The impact is definite, it has significant adverse impacts on human population and or / the environment which are of large-scale magnitude and or spatial extend such as large geographic area, large number of people or transboundary nature. The impact duration is long term, permanent and often irreversible. Impacts include displacement of human, destruction of critical ecological systems and or cultural and heritage sites etc. The impact could have a no-go implication unless the project is re-designed or proper mitigation can practically be applied.)
Duration	Time duration of the impacts		
	1		Immediate
	2		Short-term (0-5 years)
	3		Medium-term (5-15 years)
	4		Long-term (more than 15 years
	5		Permanent
Scale	The geographical scale of the impact		
	1		Site specific
	2		Local
	3		Regional
	4		National

Risk Event	Rating	Description of the risk that may lead to an Impact
	5	International

11.4 Risk Assessment

The impact significance was determined using a risk matrix **Table 6.** A five-by-five matrix was used where the impact severity was categorised and assigned scores from 1 to 5 as follows: Improbable=1, Low=2, Medium=3, High=4 and Severe=5. Similarly, the likelihood was assigned scores as follows; improbable=1, Low Likely=2, Probable=3, High Probability=4, Definite=5. The impact rating was determined by multiplying the impact severity and likelihood.

Table 6. Risk assessment matrix[11]

LIKELIHOOD						
	5 Definite	5 Low	10 Medium	15 High	20 Severe	25 Severe
	4 High Probability	4 Low	8 Medium	12 High	16 High	20 Severe
	3 Probable	3 Low	6 Medium	9 Medium	12 High	15 High
	2 Low	2 Low	4 Low	6 Medium	8 Medium	10 Medium
	1 Improbable	1 Negligible	2 Low	3 Low	4 Low	5 Low
		1 Negligible	**2 Minor**	**3 Medium**	**4 High**	**5 Severe**
		IMPACT SEVERITY / CONSEQUENCE				
		Negligible	Low	Medium	High	Severe

[11] Risk Management Guideline for the BC Public Sector (Province of British Columbia Risk Management Branch and Government Security Office 2012)

11.5 Mitigation Hierarchy

Best practises call for mitigation measures to follow a mitigation hierarchy that favours (i) avoidance of potential adverse impacts, and where avoidance is not possible, then (ii) minimization and reduction; where adverse residual impacts remain, then (iii) mitigation measures need to be applied, and, as a last resort, (iv) measures to offset impacts that cannot be appropriately mitigated (see Figure 11 below).

According to EIS regulations, the objectives mitigations are to;

- Find environmental ways of doing thing
- Promote environmental benefits of the project
- Avoid, Minimise or remedy negative impacts and
- Ensure that residual negative impacts are within acceptable levels,

Furthermore, during consideration of the mitigation measure, the following mitigation hierarchy was followed;

- Avoid the negative impact through preventative means,
- Minimise the negative impacts to acceptable low levels and,
- If the above two are not possible, remedy or compensate the impact.

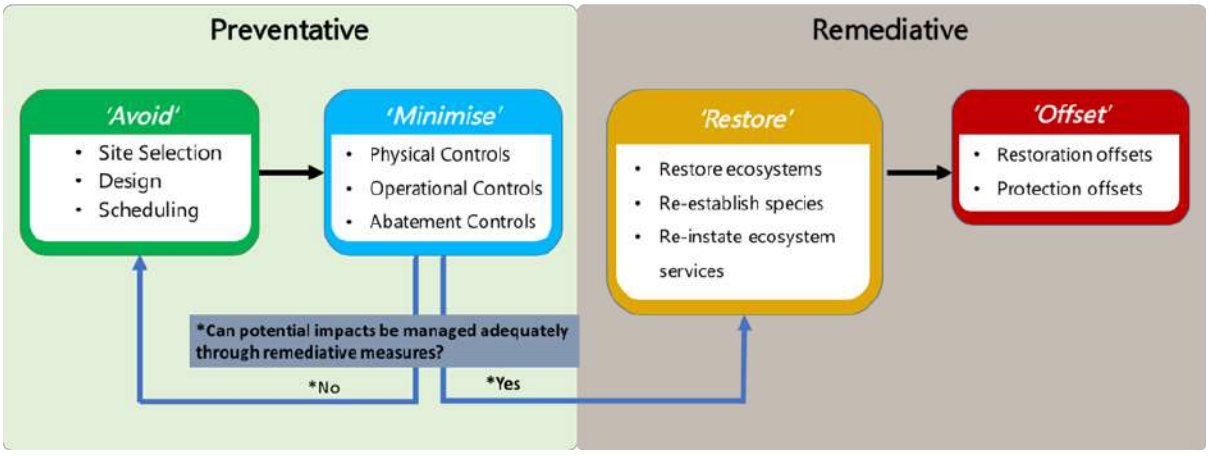

Figure 11. Mitigation Hierarchy Source [12]

[12] Cross-Sector Biodiversity Initiative (CSBI). (2015). A Cross-sector Guide for Implementing the Mitigation Hierarchy (p.9)

11.6 Potential Negative Impacts of the Project

- Noise pollution from heavy machinery and drilling
- Soil disturbance / land degradation
- Loss of habitat and biodiversity from site preparations and occupation
- Air pollution from vehicle emission and dust emission from drilling activities
- Health and Safety risk
- Risk of pollution from generated domestic solid wastes
- Risk of contamination of ground water from oil, grease and lubricants from heavy vehicles, and drilling activities.
- Poaching

11.7 Potential Positive Impact of the project

- Reduced HWC
- Direct and indirect creation of employment opportunities
- Knowledge and technology transfer.

11.8 Siting Phase: Impact Assessment

Typically, before drilling of a borehole, a site assessment is undertaken to determine the optimum location for drilling a process called siting of a borehole. This process involve analysis of geohydrology property of the area using two main conventional methods; (i) electrical resistivity and (ii) ground conductivity. These method use Frequency Domain Electromagnetic (FDM) operated by a highly trained geohydrologist.

During this phase, there was no evasive activities that could cause harm to the physical environment. To ensure social cohesion with the siting team, the Conservacny was informed about the presence of the siting team in the area. The sited location was pinned for marking purposes.

11.9 Drilling Phase:

Drilling is the major evasive and core environmental threat. This phase involves mobilization and moving of drilling equipment to the drilling site, construction of boreholes protective fence and solar panel platforms. Where necessary, setting up campsite at the drill site with supporting infrastructures such as ablution facilities, household solid waste and other solid waste. During this phase, occupation health and safety risk such as injuries emanating from operating equipment, insect (Mosquito) and snake bites as well as potential oil pollution. Table 7 below outline assessment of potential impacts and proposed mitigation measures during drilling phase.

Table 7. Social Environment: Impact Assessment

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
Employment / Socio-Economic advancement of local	Possible exclusion of locals community from job opportunities. Unfair compensation of workers. It is not anticipated that a significant number of employment will be created during drilling	1. Ensure that all general work is reserved for local people unless in circumstances where specialized skills are required. 2. Fair compensation and labour	+ve	2	2	4	Regional	Life of project	n/a	Low	High

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
		practice as per Namibian Labour Laws must be followed 3. Ensure skill transfer to the locals 4. Use local supplier for good and service where possible									

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
Health and Safety for employees and general public	Job opportunities leads to new social relationship which often spread disease, particularly pandemic such as HIV and AIDS and substance abuse. Hiring off unlicenced employees to operate vehicles and special machinery pose safety risk to themselves, co-workers and public. Additionally, employees are subject to dust and noise pollution as well as other occupational health and safety issues	1. Provide awareness to the employees on dangers of HIV/AIDS, alcohol and drug abuse 2. Provide condoms on site 3. Develop a safety plan 4. Ensure that every employee goes through an induction course about safety to train employees on health and safety. 5. All drivers must be in possession of appropriate driver's licenses	-ve	2	2	4	Site Specific and Local	Project Duration	n/a	Low	High

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
		6. Adequate safety signs must be put at designated places. 7. Provide safe wears such as, overalls, safety boots, safety eyeglasses, Hand gloves and hard hat etc to employees 8. Adhere to the Labour act, non-toxic human dust exposure levels may not exceed 5mg/m3 for respiratory dust and 15mg/m3 for total dust. 9. Employees must NOT be exposed to									

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
		noise levels above the required -85dB (A) limit over a period of 8 hours. 10. Abide by the Occupational Health and Safety and Labour Act of Namibia and other statutory requirement such as International Labour Practise (ILO) 11. Ensure adequate first aid kit on site taking into consideration, insect and snake bites									

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
		12. Supervisors must undergo an occupational health and first aid course, 13. Supply clean drinking water to the site, such as portable water tank; 14. Used gendered mobile toilets 15. Provide insect repellent, mosquito nets and if necessary immunization to prevent deadly diseases such as malaria.									
Heritage and Archaeology	Potential unearthing of archaeological material	1. Employee must be trained on the	-ve	2	2	4	Site Speci	Const ructio	R	Low	High

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
	or damaging heritage resources	possible find of heritage and archaeological material in the area; 2. Implement a chance find and steps to be taken for heritage and archaeological material finding (Heritage (rock painting and drawings), human remains or artefacts) are unearthed 3. Stopping the activity									

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
		immediately i. Informing the operational manager or supervisor ii. Cordoned of the area with a danger tape and manager to take appropriated pictures. iii. Manager/supervisor must report the finding to the following competent authorities, National Heritage									

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
		Council of Namibia (061 244 375) National Museum (+264 61 276800) or the National Forensic Laboratory (+264 61 240461).									

Table 8. Bio-Physical Environment: Impacts Assessment

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
Biodiversity: Flora	Destruction of trees	1. Avoid cutting down mature and protected plant species. 2. Ensure that access roads are rehabilitated after use to enhance revegetation	-ve	2	2	4	Site Specific	Construction / Drilling	R	Low	High
Biodiversity: Fauna	Destruction of animal habitats such as bird nests, poaching, stealing of livestock	1. Do not kill animal, unless such animals pose eminent danger to humans 2. There must be ZERO tolerance to poaching to ensure this, no weapon and traps are allowed on site;	-ve	2	2	4	Regional	Construction / Drilling	R	Low	High
Surface and Ground Water Pollution	Heavy vehicle and machinery may pollute water sources from leakages of oils,	1. Fuelling of heavy vehicle on site must be well coordinated at designated places, 2. Stationary vehicles must be provided with drip tray to capture	-ve	2	2	4	Site Specific	Construction / Drilling	R	Low	High

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
	hydraulic fluids, lubricants and greases. These pollutants may reach underground water through seepage. Further surface water may be polluted from surface run off soils that is polluted.	oil, lubricants and hydraulic fluids leakages 3. All vehicle and machinery must be well service to avoid leakages 4. Provide and train on oil spill emergency response 5. Servicing of vehicles and machinery must take place at designate places									
Waste Generation	General household pollution and littering such as used oil cans drums, metals,	1. Provide skip bins to collect waste and be disposed of at an approved disposal site 2. Provide labelled household waste drums for household solid waste. 3. Do not burry waste on site	-ve	2	2	4	Site Specific	Life of project	R	Low	High

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
	and household solid and liquid waste	4. Excavate a small biodegradable waste site that would be dump filled at the end of the project, alternatively, provide mobile toilets that will be disposed at an approved site and ensure separate ablution facilities for men and women. 5. Used oil, grease and lubricants cans must be collected in appropriate drums and disposed of at an approved site 6. Maintain good housekeeping on site. 7. Do not burry waste on site									
Dust Pollution	Land clearing, digging, excavation of trenches, drilling,	1. Movement of heavy vehicles must strictly be restricted on site.	-ve	2	2	4	Local and Site Specific	Immediate	R	Low	High

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
	movement of vehicles and heavy machinery in site, transportation of material to site, will create fugitive dust which could be a nuisance to the surrounding.	2. Adhere to the minimum speed limit of 30 or 40km/hour when on farm roads. 3. On site where soil is loosened by vehicle movement, apply dust a suppression method such as water spraying. 4. During drilling, use water to suppress the dust									
Land degradation and pollution	Uncoordinated movement of heavy vehicles and uncoordinated land clearing could lead to soil erosion. Possible	1. Movement of heavy vehicles must be coordinated and restricted to be on access roads 2. Normally, public gravel roads are meant for light vehicles drilling vehicles have the potential to damage the access roads. Hence proper road maintenance must be	-ve	2	2	4	Site Specific	Life of project	R	Low	High

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
	spill and leakages of fuel and lubricants from vehicle and machinery could pollute the soil and eventually the ground water resource.	implemented to ensure that the roads are left on good state 3. Fuelling of heavy vehicles on site must be well coordinated at designated places 4. Servicing of vehicles and machinery must take place at designated sites 5. Stationary vehicles must be provided with drip tray to capture oil, lubricants and hydraulic fluid leakages 6. All vehicles and machinery must be well serviced to avoid leakages 7. Provide and train on oil spill emergency response.									

11.10 Operational Phase:

The main activities during the operational phase of the borehole is water abstraction which, if not well monitored could lead to over abstraction and consequently to deteriorating of water quality and potential impacts on vegetation from deepening of water table. The borehole could also cause social conflict whereby community in the surrounding area could claim ownership of the borehole and may prevent other communities from using the borehole. Table 9 below outlines the potential impacts during the operational phase and proposed mitigation measures.

Table 9. Operational Phase Impact Assessment

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
Increase in community water supply	Besides reducing HWC, the borehole will also make water readily available for household use by the community	1. Aid in increasing water point in the village 2. Reduced distance travel by people to water points 3. Sustainable supply of water during drought	+ve	2	2	4	Site Specific	Life of project	R	Low	High

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
Over abstraction of underground water	High and unsustainable water abstraction which could affect ground water quality	1. Do not abstract more than what is recommended by the permit 2. Where possible, install automatic measuring gauge to monitor abstraction 3. Monitor water level periodically 3. Carry out periodic pumping yield to assess aquifer sustainability 4. Undertake systematic water quality assessment	-ve	2	2	4	Local	Life of project	R	Low	High
Risk of water infrastructure destruction buy elephants	Elephant are notorious known for damaging water points in search for drinking water	1. Construct an elephant proof fence around the borehole and its supporting infrastructures 2. Build high and thick enough walls that will prevent elephants access to the water tank and solar infrastructures.	-ve	2	2	4	Local	Life of project	R	Low	High

Project-Environment Interaction	Description	Mitigation Measures	Impact type	Likelihood occurrence	Severity	Impact Rating	Geographical Extend	Duration	Reversibility (R)	Significance	Confidence Level
Conflict of water use buy villagers	Claim of ownership of water point / borehole by some community members	1. Raise awareness of the indented purpose of the borehole 2. Ensure no one is made to be entitled to owning or have controlling power on who should use the borehole	-ve	2	2	4	Local	Life of project	R	Low	High
Theft of borehole infrastructures	There are reported cases where boreholes infrastructure such as solar panel are stolen	1. Construct theft proof fence to protect solar panels	-ve	2	2	4	Local	Life of project	R	Low	High

12 GRIEVANCE PROCEDURE

The Grievance Procedures will be a process to facilitate for an easy and smooth process in which stakeholders are able to submit their complaints about the project activities or its consequences i) free of charge ii) without fear of retribution iii) anonymously and iv) user friendly channels.

It is important to emphasise that the Grievance Procedure will not address HWC incidents per se, because those are not caused by the Project. Grievances that are eligible are, for instance, cases where a party is disadvantaged as a result of a Project activity, or as a result of negligence on the part of the Project to follow its procedures thoroughly or fairly. Complainants may be by actual or potential beneficiaries of the Project, or any members of the public.

In generally, the grievances process will follow six (6) Grievance Redress Mechanism (GRM) value chain, namely; i) Receive and log grievance, ii) Acknowledge grievance, iii) Assess and Investigate iv) Grievance Resolution, iiv) Sign-off on grievance and iiiv) Monitor and continuously evaluate the effectiveness of the GRM.

Grievances will be addressed through the channels in the institutional structure presented in **Figure 12** below, in an efficient, effective and consistent manner.

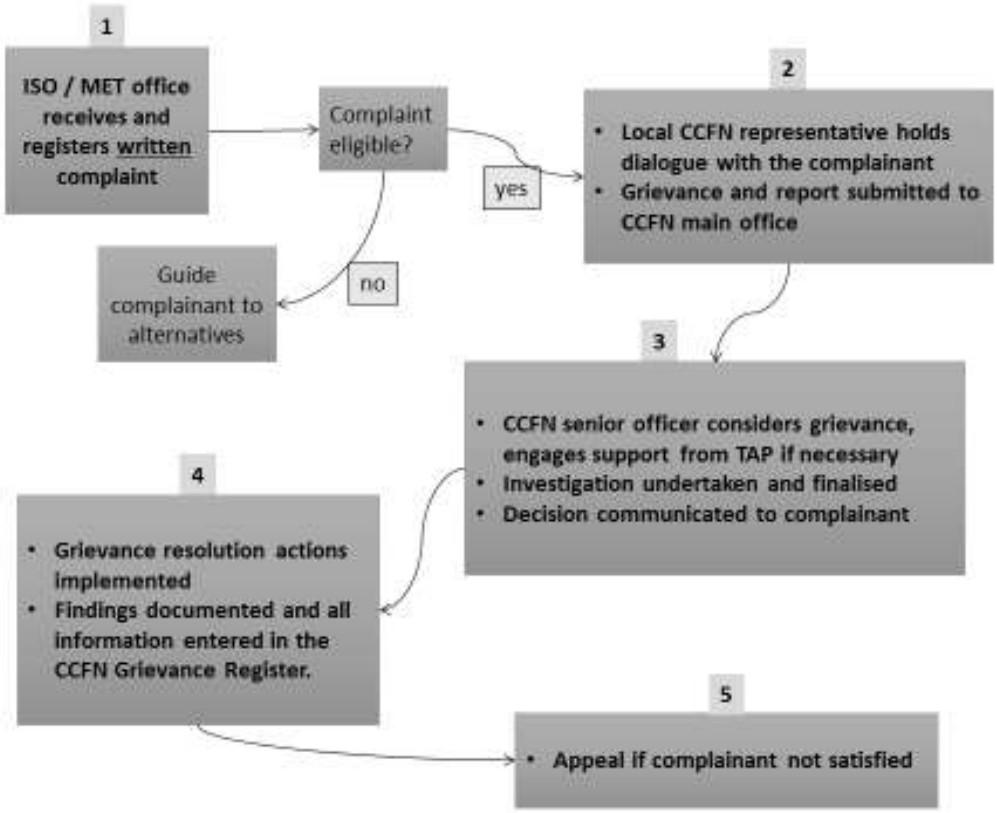

Figure 12. GRM flow chart (Source: ESMF_ Poverty Oriented Support to Community Conservation in Namibia)

The eligibility of the grievance will be assessed at the level where it is first received, at a local MEFT / ISO office (Step 1) and the following actions / steps will be undertaken. The grievance will be discussed with the complainant, with the objective of understanding the problem and giving the complainant a fair hearing (Step 2). The local CCFN representative will submit the grievance, and any notes of their own, to the CCFN head office for higher-level input to the issue (Step 2). The CCFN senior officer will investigate the substance of the grievance (Step 3). If necessary, assistance may be sought from the TAP. Further dialogue with the complainant and others affected by the grievance might also be necessary. The CCFN senior officer will compile a written report on the grievance and communicate the outcome to the complainant.

Any actions necessary to resolve the grievance will be implemented by the relevant parties, under the direction of the CCFN (Step 4). Resolution of the grievance will be documented and entered into the Grievance Register. Under normal conditions, a grievance will be resolved, and redress actions commenced within 30 days of receiving a complaint. A complainant is permitted to appeal against the decision by the CCFN, to the CCFN CEO (Step 5). In such a

case the CEO must present the grievance and the CCFN decision to the Board, for reconsideration.

13 DECOMMISSIONING AND REHABILITATION PLAN

Decommissioning is normally the reverse of construction where all installed equipment / structure must be removed. Supply of water to the community is aimed to be a life-long intervention unless of a pressing issue that would necessitate decommissioning. Aging equipment that requires replacement should be done by qualified Namibians to ensure smooth operation and constant water supply.

14 CONCLUSION AND RECOMMENDATIONS

14.1 Conclusion

With the available information, the following conclusions were made:

1. The region has low groundwater potential.
2. Excessive groundwater extraction could lead to water depletion and deteriorating of water quality.
3. Provision of water to the campsite will increase benefit from tourism as well as make water readily available to the surrounding community.

14.2 Recommendations

- It is recommended to the approving authority for the issuance of the ECC.
- CCFN should continue to support Ohungu Conservacny to ensure intermittent testing of water quality and obtain necessary fitness approval to monitor the borehole performance.

15 ANNEX 1. GROUNDWATER MONITORING PLAN

The purpose of the groundwater monitoring plan is to make sure that suitable procedures are in place to monitor and evaluate the response of the aquifer and the surrounding environment to the abstraction process. Furthermore, the plan is aimed to control the impacts of groundwater abstraction and contaminant loads, and monitoring aquifer response and quality. The proposed procedures shall also serve as an early warning system for over-abstraction.

15.1 Groundwater Quality

It is essential that the quality of groundwater abstracted is monitored on a realistically regular basis, to serve as an early warning of quality changes that may occur due to the abstraction; natural causes; or pollution. Undertake intermittent water quality testing.

15.2 Groundwater Level Measurements

The level of groundwater in the aquifer will serve to inform the water quantity vs the rate of abstraction. This will be critical given low to no recharge due to lower rainfall in the area. This provision is provided for in the monitoring sheet for water meter readings provided by the MAWLR to the borehole operator. It is therefore important that hydrological baseline information of water level is recorded to ensure time-variant collection of data. This type of monitoring becomes effective proof of errors when MAWLR also carries out periodic inspections.

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17 APPENDICES

17.1 Appendix A. Attendance Register Ozohere Village

MEFT

KFW

CCFN

STAKEHOLDER CONSULTATION FOR ENVIRONMENTAL SCOPING STUDY AND DEVELOPMENT OF ENVIRONMENTAL MANAGEMENT PLAN FOR THE DRILLING OF WATER POINT AT OZOHERE, IN OHINGU CONSERVANCY, ERONGO REGION."

Place: Ozohere Campsite, Ohungu Conservancy
Date: 15 July 2024
Time: 10:00 am

No	Name	Gender	Organization	Position	Cell	Email	Signature
1	Tukaa	F	ozohere Campsite	Community member		N/A	
2	Mukaakarabu	F	ozohere Campsite	C m		N/A	
3	Kupwe	F	OC	C m		N/A	
4	Timyjona	F	OC	C m		N/A	
5	Kandjipoo	F	OC	C m		N/A	
6	Unao	M	OC	C m		N/A	
7	Mbinani	F	OC	C m		N/A	
8	Maukaniuapi	F	OC	C m		N/A	
9	Helena	F	OC	C m		N/A	
10	Tjiloi	F	OC	C m		N/A	
11	Mbwena	F	OC	C m		N/A	
12	Mapani	F	OC	C m		N/A	

17.2 Appendix B: Consent letter: Ozohere Village

15 July 2024

To Whom It May Concern:

Dear Sir / Madam

SUBJECT: FREE PRIOR INFORMED CONSENT FOR THE DRILLING OF WATER POINT AT OZOHERE VILLAGE IN OHUNGU CONSERVANCY

The above subject bears reference,

I, Mr Fabianus H. Urorakamani as the area Headman of Ozohere Village in Ohungu Conservancy fully understand the above-mentioned project and its benefit to our community. The proposed project does not interfere with our traditional norms and culture. We welcome it and encourage adequate consultation during the implementation of project activities.

This letter to serve as a Free Prior Informed Consent for the project.

Yours Sincerely

H. Urorakamani Fabianus

Name of Headman

Signature

Zeraeua **Traditional Authority**

Ohungu Conservancy

0812484672

Cellphone Number

Stamp

Zeraeua Traditional Authority
P.O. Box 96 • Omaruru
15 -07- 2024
Tel: 064-571053
E-mail: mczeraeua@gmail.com
Republic of Namibia

OHUNGU CONSERVANCY
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