ENVIRONMENTAL IMPACT ASSESSMENT

FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPL 10848 IN OKAHANDJA & OMARURU DISTRICTS, OTJOZONDJUPA & ERONGO REGION

ENVIRONMENTAL SCOPING REPORT
FINAL VERSION
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EXECUTIVE SUMMARY

Junior Baiano Industrial Consultants (JBIC) cc was appointed by Cancun Energy cc to undertake an Environmental Impact Assessment (EIA), prepare an Environmental Management Plan (EMP), and apply for an Environmental Clearance Certificate (ECC) for the proposed prospecting and exploration activities on Exclusive Prospecting Licences (EPLs) 10848. The licence areas are located within the Omaruru District of the Erongo Region and the Okahandja District of the Otjozondjupa Region, Namibia.

Prospecting and exploration activities are listed activities under Namibia's Environmental Impact Assessment Regulations (GN 30 of 2012) and may not be undertaken without an Environmental Clearance Certificate. In order to comply with national environmental legislation, the proponent appointed an independent environmental consultant to conduct the required environmental assessment process and submit an ECC application to the Ministry of Environment, Forestry and Tourism (MEFT).

The proposed exploration programme includes desktop studies, reconnaissance surveys, geological mapping, geochemical and geophysical surveys, use of existing farm access tracks, establishment of limited temporary drill sites, and exploratory drilling. These activities are temporary in nature and do not involve mining, mineral processing, or the establishment of permanent infrastructure.

In terms of the EIA Regulations, the proposed project triggered the requirement for an Environmental Clearance Certificate due to the potential for the following impacts:

- localised disturbance of land and soils at drill sites and along access routes;
- temporary disturbance to flora and fauna resulting from vegetation clearing and human activity;
- minor noise and vibration generated by vehicles, drilling rigs, and generators;
- dust generation during drilling and vehicle movement on gravel roads;
- occupational health and safety risks associated with exploration activities;
- generation of general and hazardous waste;
- potential chance-finds of archaeological or cultural heritage resources;
- temporary land-use interactions with surrounding commercial farming activities; and
- short-term disturbance to grazing land and farm infrastructure.

Public Participation Process

Interested and Affected Parties (I&APs) were notified of the proposed project through newspaper advertisements, site notices, Background Information Documents (BIDs), and direct engagement with relevant stakeholders and authorities within both the Erongo and Otjozondjupa Regions. A public meeting was organised in accordance with the Environmental Management Act; however, no community members attended the formal meeting. Additional reasonable efforts were undertaken to engage stakeholders who were willing to participate through direct discussions and individual engagements. Full details of the public consultation process are presented in Chapter 4 of this report, with all supporting documentation included in the Appendices.

Findings and Conclusion

The Environmental Assessment concluded that the potential environmental and socio-economic impacts associated with the proposed exploration activities on EPL 10848, is generally low to moderate in significance, localized, short-term, and reversible, if appropriate mitigation and monitoring measures are implemented. The most relevant impacts relate to vegetation disturbance, soil exposure, dust generation, waste management, groundwater protection, and controlled access on commercial farms.

Positive socio-economic benefits are anticipated, including temporary employment opportunities, local procurement of goods and services from nearby towns and service centers, and the generation of improved geological knowledge that may inform future economic opportunities should exploration results justify further development.

All identified impacts have been addressed through a comprehensive Environmental Management Plan (EMP), which outlines practical mitigation measures, monitoring requirements, responsibilities, and reporting procedures to ensure environmental protection and regulatory compliance throughout the exploration phase.

Recommendation

Based on the findings of the Environmental Impact Assessment, it is concluded that the proposed exploration activities on EPLs 10848 can proceed without causing significant environmental harm, provided that all mitigation and management measures described in this report and the EMP are fully implemented.

It is therefore recommended that the Environmental Commissioner of the Ministry of Environment, Forestry and Tourism (MEFT) grant an Environmental Clearance Certificate (ECC) for the proposed exploration activities, subject to ongoing compliance with the approved EMP and all applicable environmental legislation and licence conditions.

CONTENTS

List of Figures

List of Tables

Acronyms

TERMS	DEFINITION
BID	Background Information Document
CA	Competent Authorities
EAP	Environmental Assessment Practitioners
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
GDP	Gross Domestic Product
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&Aps	Interested and Affected Parties
JBIC	Junior Baiano Industrial Consultants
MEFT: DEA	Ministry of Environment, Forestry and Tourism's Directorate of Environmental Affairs
PPE	Personal Protective Equipment

1 CHAPTER ONE: BACKGROUND

1.1 INTRODUCTION

Cancun Energy cc intends to undertake mineral prospecting and exploration activities within Exclusive Prospecting Licence (EPL) 10848, EPL 10849 and EPL 10850, situated across the Okahandja and Omaruru Districts of the Otjozondjupa a and Erongo Regions of Namibia. The three licence areas occur within a largely rural setting dominated by commercial livestock farming, existing transport corridors and areas of historical and active mineral exploration.

EPL 10848 covers an area of approximately 24,246.56 hectares and extends across a number of privately owned farms within the Okahandja District. EPL 10849, covering approximately 4,928.90 hectares, and EPL 10850, covering approximately 9,887.65 hectares, are located primarily within the Omaruru District. Together, the licence areas form part of a broader mineral-prospective zone characterised by accessible terrain, established farm infrastructure and proximity to regional service centres. The precise locations and boundaries of EPL 10848, EPL 10849 and EPL 10850, as well as their relationship to surrounding land uses and infrastructure, are shown in the locality maps included in this report.

Exploration activities are proposed to follow a staged approach, beginning with non-intrusive prospecting methods and progressing, where justified, to more focused investigation. Early-phase work will consist of desktop studies, reconnaissance surveys, geological mapping and surface sampling, supported by geophysical techniques that do not require ground disturbance. Limited drilling may be undertaken at a later stage to verify subsurface conditions in areas identified as geologically favourable. The overall objective of this programme is to establish whether the mineral occurrences within EPL 10848, EPL 10849 and EPL 10850 warrant further technical evaluation or potential future development.

Mineral prospecting and exploration activities are regulated under Namibia’s environmental and mining legislation. In terms of the Environmental Management Act, 2007 (Act No. 7 of 2007) and the Environmental Impact Assessment Regulations of 2012, the proposed activities may not commence without environmental authorisation. The project therefore requires an Environmental Impact Assessment (EIA) and the issuance of an Environmental Clearance Certificate (ECC), as it involves activities that are subject to authorisation under

the Minerals (Prospecting and Mining) Act, 1992, as well as the extraction and investigation of natural resources.

The EIA process provides a structured framework for examining the potential environmental and socio-economic effects of the proposed exploration activities, taking into account the characteristics of the receiving environment and the concerns of affected stakeholders. Through this process, potential risks are identified, opportunities for positive contribution are considered, and appropriate mitigation and management measures are developed to ensure that exploration is undertaken in a responsible and sustainable manner.

Cancun Energy cc has appointed Junior Baiano Industrial Consultants (JBIC) as an independent Environmental Assessment Practitioner (EAP) to manage the environmental assessment process and compile the Environmental Management Plan (EMP). This Scoping Report forms part of the documentation submitted to the Ministry of Environment, Forestry and Tourism (MEFT), through the Department of Environmental Affairs and Forestry (DEAF), in support of applications for Environmental Clearance Certificates for EPL 10848, EPL 10849 and EPL 10850.

1.2 PROJECT LOCATION

The proposed exploration activities are located within Exclusive Prospecting Licence (EPL) 10848, EPL 10849 and EPL 10850, which are situated within the Okahandja and Omaruru Districts of the Otjozondjupa and Erongo Regions of Namibia. The licence areas occur within Namibia’s central–western interior and are predominantly located within a rural landscape characterised by commercial livestock farming, low settlement density and existing agricultural and mining-related land uses.

EPL 10848 is located mainly within the Okahandja District, while EPL 10849 and EPL 10850 are situated primarily within the Omaruru District. The licence areas extend across a number of registered commercial farms and are defined by irregular boundaries that generally follow farm cadastral limits. The receiving environment is typical of an arid to semi-arid setting and includes gently undulating terrain, rocky outcrops, sparse shrub–savanna vegetation and ephemeral drainage features.

Access to the licence areas is provided through an established network of national and district roads linking the project area to nearby towns and regional service centres. Existing farm roads and gravel tracks are used for internal access within the licence areas and are routinely utilised for agricultural activities. The proximity of the project area to towns such as Okahandja and Omaruru ensures access to accommodation, fuel, communications and logistical support required for exploration operations.

The location and extent of EPL 10848, EPL 10849 and EPL 10850, as well as their relationship to surrounding farms, road infrastructure and regional context, are illustrated in the locality and farm maps provided in Appendix A. These maps include individual layouts for each licence area and collectively provide the spatial reference framework for the environmental assessment and public consultation processes.

All spatial information presented in this report is referenced using the WGS 84 (EPSG:4326) geographic coordinate system and is consistent with data submitted for regulatory and licensing purposes.

1.3 PROJECT OVERVIEW

The proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850 are designed to follow a structured, stepwise approach that allows mineral potential to be evaluated progressively while limiting environmental disturbance during the early stages of work. Activities will advance from low-impact prospecting techniques to more focused and intrusive investigations only where results justify further investment and subject to the necessary environmental authorisations.

This phased approach enables the Proponent to reduce geological uncertainty incrementally, apply appropriate environmental controls at each stage, and ensure that decision-making is informed by increasingly detailed datasets.

1.3.1 Prospecting Phase (Early-Stage Investigations)

The initial prospecting phase focuses on gathering baseline geological information to assess whether EPL 10848, EPL 10849 and EPL 10850 contain conditions favourable for Dimension Stone, Base and Rare Metals, Industrial Minerals, Precious Metals, Precious Stones and Nuclear Fuel Minerals. Activities during this phase are predominantly non-intrusive and are aimed at identifying and prioritising prospective target areas.

1.3.1.1 Desktop Studies and Preliminary Geological Assessment

The prospecting programme commences with a comprehensive desktop investigation to develop an understanding of the regional and local geological setting. This work includes, but is not limited to:

- reviewing geological maps, reports and datasets published by the Geological Survey of Namibia;
- examining lithological, stratigraphic and structural information relevant to the Damara Belt and surrounding geological domains;
- collating available historical exploration data from adjacent or nearby prospecting and mining licences;
- analysing existing regional geophysical and geochemical datasets, including airborne magnetic, radiometric and gravity surveys;
- identifying geological units and structural features commonly associated with mineralisation, such as marble horizons, pegmatite bodies, alteration zones and structurally controlled vein systems.

The outcomes of the desktop studies are used to define preliminary exploration targets and guide subsequent field-based activities.

1.3.1.2 Reconnaissance Field Investigations

Following completion of the desktop assessment, reconnaissance fieldwork is undertaken to ground-truth interpretations and verify geological features identified remotely. Typical activities during this stage include:

- geological mapping of accessible outcrops and surface exposures;
- identification and documentation of structural features, alteration patterns and lithological contacts;
- collection of limited soil, rock chip and float samples for preliminary geochemical screening;
- observation of surface indicators such as quartz veining, pegmatitic intrusions, mineralised outcrops or alteration halos;
- assessment of terrain and access conditions to inform future sampling layouts and logistical planning.

Where existing farm roads or tracks are available, these will be utilised. Should limited additional access be required, short temporary tracks may be established in accordance with the Environmental Management Plan (EMP), with care taken to avoid sensitive features such as drainage lines or areas of ecological importance.

1.3.1.3 Target Refinement and Advanced Prospecting

Where reconnaissance results indicate elevated mineral potential, more focused prospecting activities may be undertaken to refine targets. These activities may include:

- detailed geological mapping over selected target areas;
- systematic geochemical sampling using localised grids or transects to define geochemical anomalies;
- non-intrusive, ground-based geophysical surveys, which may include:
    - radiometric surveys for alteration or rare-metal indicators;
    - magnetic surveys to assist with lithological and structural interpretation;
    - electromagnetic or transient electromagnetic (TEM) methods where appropriate to the deposit model;
- integration of geological, geochemical and geophysical datasets to prioritise targets for further investigation.

Progression beyond this stage will only occur once an Environmental Clearance Certificate (ECC) has been obtained in terms of the Environmental Management Act, 2007 (Act No. 7 of 2007).

1.3.2 Exploration Phase (Subsurface Investigation)

Where advanced prospecting confirms the presence of viable exploration targets, activities may progress to subsurface investigation. This phase is more intrusive and is therefore subject to stricter environmental management and monitoring requirements.

1.3.2.1 Drilling and *Sampling Activities*

Subsurface investigation may involve Reverse Circulation (RC) and/or Diamond Core (DC) drilling, depending on target depth, geological conditions and exploration objectives. Typical activities include:

- establishment of small, temporary drill pads;

- drilling conducted in accordance with approved health, safety and environmental procedures;
- geological logging of drill cuttings or core to record lithology, structure, mineralisation and alteration;
- collection and secure storage of samples for laboratory analysis;
- submission of samples to accredited laboratories for geochemical and mineralogical testing;
- development of preliminary subsurface geological interpretations based on drilling results.

The use of explosives or blasting is not anticipated as part of the exploration programme.

1.3.2.2 Specialist Services and Compliance

Drilling and associated activities will be carried out by suitably qualified and experienced contractors operating in Namibia. All contractors will be required to comply with:

- the Minerals (Prospecting and Mining) Act, 1992;
- applicable occupational health and safety legislation;
- the approved Environmental Management Plan (EMP);
- recognised industry best practice, including guidance from professional bodies such as the Southern African Institute of Mining and Metallurgy (SAIMM) and internationally accepted reporting standards for sampling quality assurance.

1.3.2.3 Objectives of the Exploration Phase

The exploration phase aims to:

- confirm the presence, extent and continuity of mineralisation;
- assess the grade, geometry and style of mineralised zones;
- improve understanding of the underlying mineral system;
- generate sufficient information to determine whether further technical studies, such as prefeasibility investigations, may be justified.

1.3.3 Summary of Exploration Methods Applicable to EPL 10848, EPL 10849 and EPL 10850

A range of exploration techniques may be applied across the licence areas, depending on geological conditions and results obtained at each stage.

1.3.3.1 Desktop and Remote Sensing Techniques

- Interpretation of satellite imagery (e.g. ASTER, Landsat, Sentinel-2);
- Remote sensing analysis of lithological and alteration features;
- GIS-based integration of geological, structural and geophysical datasets.

1.3.3.2 Field-Based Techniques

- Soil, calcrete and rock chip geochemical sampling;
- Limited trenching where justified and authorised;
- Ground-based radiometric and magnetic surveys;
- Structural and geomorphological mapping;
- Observational geobotanical assessments.

1.3.3.3 Detailed Investigation Techniques

- Targeted test pitting or trenching where appropriate;
- Stratigraphic or structural drilling;
- Petrographic, mineralogical and geochemical laboratory analysis.

1.3.3.4 Operational Support Requirements

Temporary infrastructure required to support exploration activities may include:

- use of existing farm access roads;
- construction of short-term access tracks where necessary;
- temporary field camps or mobile work units;
- portable sanitation and waste management facilities;
- designated areas for sample handling, storage and equipment laydown.

All support facilities associated with the exploration programme will be established, operated and decommissioned in accordance with applicable environmental management standards and the provisions of the approved Environmental Management Plan (EMP).

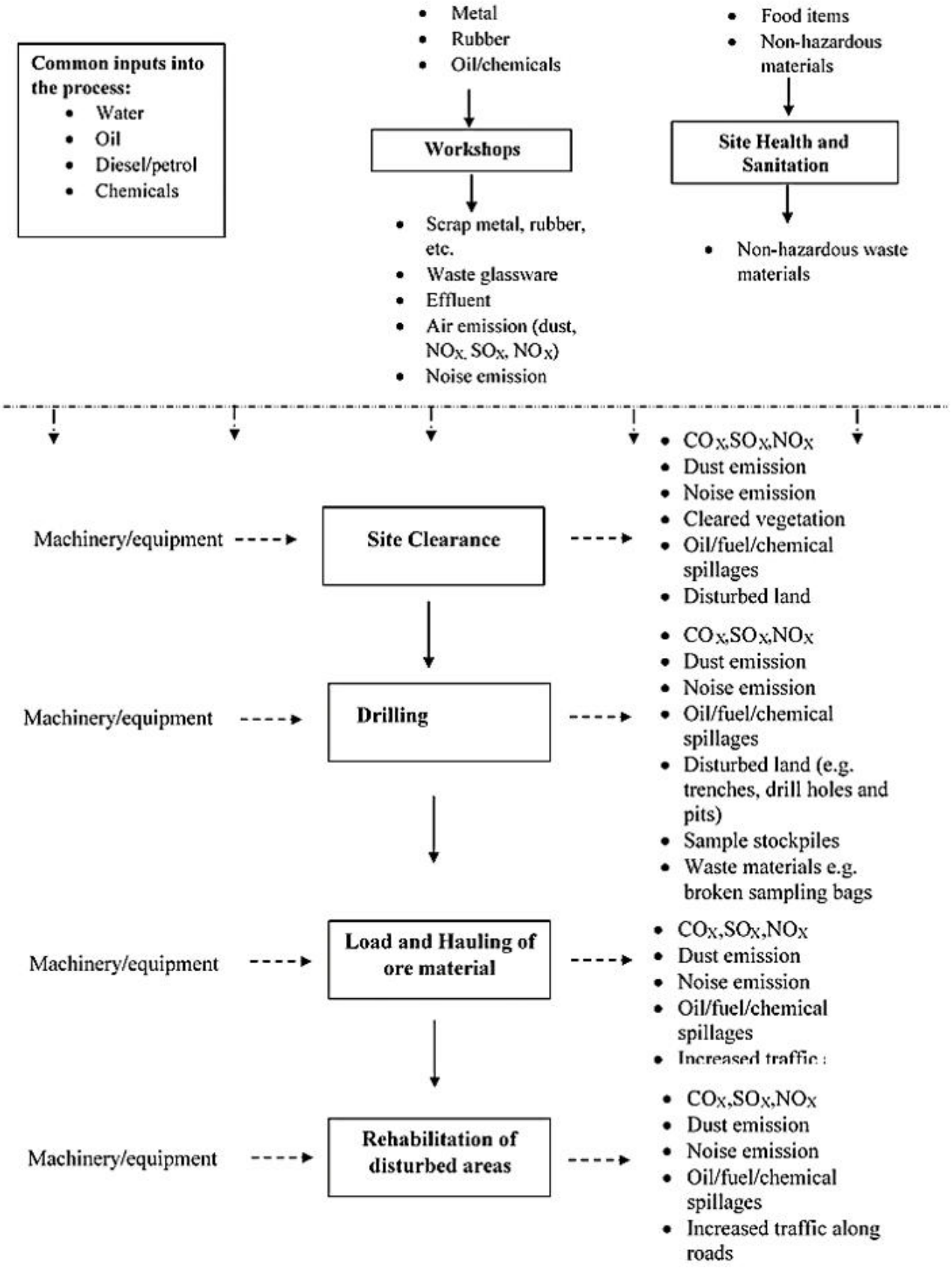

Figure 1-1: Environmental Management Flow Chart for Exploration Activities

Figure 1-1 illustrates the sequence of operational activities associated with mineral exploration and highlights the environmental aspects that require management at each stage of the project lifecycle. The flow diagram demonstrates how environmental considerations are integrated into exploration planning, implementation and closure, rather than being addressed in isolation.

The diagram begins with the common inputs required to support exploration activities, including water, fuel (diesel and petrol), oils and chemicals. These inputs are utilised across workshops, field operations and site activities and result in a range of outputs such as waste materials, effluent, air emissions (including dust and exhaust gases) and noise. Effective management of these inputs and outputs is essential to prevent environmental contamination and unnecessary disturbance.

A parallel pathway within the diagram addresses site health and sanitation requirements, including food supplies and other non-hazardous materials used by field personnel. These activities generate domestic waste streams that must be handled, stored and disposed of in a controlled and hygienic manner to prevent pollution and health risks.

The central component of Figure 1-1 presents the core operational sequence of exploration activities, each associated with predictable environmental risks:

Site clearance represents the initial phase of physical disturbance and involves the use of machinery to prepare limited access routes and small work areas. Potential environmental aspects at this stage include exhaust emissions, dust and noise generation, vegetation removal, soil disturbance and the risk of hydrocarbon spillages.

Drilling activities follow site preparation and constitute the most intensive stage of exploration in terms of localised disturbance. Environmental aspects associated with drilling include emissions from drilling equipment, increased noise and dust, generation of drill cuttings and sample materials, disturbance of surface and subsurface soils, and an elevated risk of fuel or oil spills if not properly controlled.

Where material handling is required, loading and hauling activities introduce additional impacts related to vehicle movements, including exhaust emissions, dust generation along access tracks, noise and increased traffic-related safety risks. Although haulage volumes during exploration are generally limited, these impacts require active management.

The final operational step shown in the diagram is the rehabilitation of disturbed areas. Rehabilitation activities focus on restoring affected sites through backfilling, sealing of drill holes, recontouring of disturbed ground and promoting natural vegetation recovery. While some machinery use may still occur during this phase, the objective is to progressively reduce environmental risk and return sites to a stable and safe condition.

Figure 1-1 demonstrates that exploration activities follow a logical, linear process in which environmental risks are foreseeable and can be effectively managed through appropriate planning, monitoring and mitigation. Environmental management is continuous throughout the project lifecycle, from the handling of inputs and execution of field activities to site closure and rehabilitation.

Responsibility for implementing and overseeing environmental controls rests with the Proponent, supported by Junior Baiano Industrial Consultants (JBIC) as the Environmental Assessment Practitioner, the appointed Environmental Control Officer (ECO), and oversight by the Ministry of Environment, Forestry and Tourism (MEFT). This integrated approach ensures that environmental considerations are embedded into all stages of exploration on EPL 10848, EPL 10849 and EPL 10850, in line with regulatory requirements and best practice.

1.3.4 Summary of Activity Impacts

Table 1-1 provides an overview of the anticipated levels of environmental disturbance associated with the principal exploration activities proposed for EPL 10848, EPL 10849 and EPL 10850. The table reflects the progressive nature of the exploration programme and illustrates that the majority of early-stage prospecting activities are non-intrusive or result in only minor, short-term disturbance.

Potentially noticeable physical disturbance is limited to specific activities such as trenching, drilling and the establishment of temporary field infrastructure. These activities are localised in extent, short in duration and subject to rehabilitation in accordance with the Environmental Management Plan (EMP)..

Table 1-1: Summary of Activity Impacts

Activity	Primary Purpose	Anticipated Disturbance Level
Desktop studies	Review and interpretation of existing geological and geophysical information	None
Satellite imagery and remote sensing	Identification of regional geological features and anomalies	None
Geochemical surveys	Collection of surface soil, calcrete and rock-chip samples	Low; limited to walk-over sampling with no mechanical disturbance
Geophysical surveys	Delineation of subsurface structures and anomalies	Low; movement largely restricted to existing tracks and access routes
Test pits and trenches	Examination of shallow subsurface geological features	Localised and temporary; disturbance confined to small areas
RC / Diamond drilling	Collection of subsurface geological samples	Localised; temporary drill pads established and rehabilitated after use
Temporary field camps	Provision of short-term accommodation and logistical support	Low; fully reversible with site clean-up and restoration
Rehabilitation activities	Restoration of disturbed areas following exploration	Positive; reduces residual impacts and stabilises disturbed sites

1.4 ACCESSIBILITY

The licence areas covered by EPL 10848, EPL 10849 and EPL 10850 are located within regions that already benefit from an established network of national roads, district roads and

farm access routes associated with commercial agriculture and historical mining activities. As a result, the project area is readily accessible, and the proposed exploration activities can be undertaken without the construction of new permanent roads or extensive ground disturbance.

Primary access to the project area is provided by national and regional roads linking the licence areas to nearby towns and service centres, including Okahandja, Karibib and Omaruru. From these main routes, existing farm roads and gravel tracks extend into and around the licence areas, providing direct access to exploration sites. These routes are routinely used by landowners for livestock management, property maintenance and access to water infrastructure and are therefore suitable for light exploration vehicles and equipment.

Within EPL 10848, EPL 10849 and EPL 10850, access for exploration teams will rely primarily on:

- existing farm roads and previously disturbed access routes;
- short internal tracks leading to water points, livestock posts or historical workings; and
- informal jeep tracks associated with past exploration or agricultural use within the wider region.

The use of existing access routes is intended to minimise vegetation clearance, soil disturbance and visual impacts.

No new permanent access roads are proposed as part of the exploration programme. Where access to a specific sampling location or drill site cannot be achieved using existing tracks, the Proponent may establish short, temporary access paths. Any such paths will be planned and implemented in accordance with the Environmental Management Plan (EMP) and in consultation with affected landowners. Temporary access routes will:

- utilise natural clearings or previously disturbed ground wherever practicable;
- avoid environmentally sensitive features such as drainage lines, steep slopes and areas of ecological importance;
- be limited to the minimum width required for safe vehicle access; and
- be rehabilitated promptly once no longer required.

Given the dispersed nature of exploration activities, the reliance on existing infrastructure and the temporary nature of any additional access paths, the overall environmental

disturbance associated with vehicle movement within EPL 10848, EPL 10849 and EPL 10850 is expected to be low, localised and reversible.

1.5 INFRASTRUCTURE AND SERVICES

Although EPL 10848, EPL 10849 and EPL 10850 are located within predominantly rural areas of the Okahandja and Omaruru Districts, the licence areas are supported by existing infrastructure associated with commercial farming, quarrying and nearby mining activities, as well as regional transport corridors. The availability of this infrastructure is sufficient to support the proposed low-impact exploration activities without the need for new permanent installations.

1.5.1 Road Network

Access to the licence areas is facilitated by an established network of national, district and farm roads. Regional connectivity is provided by major transport routes, including the B2 National Road, which links Okahandja, Karibib, Usakos and Arandis and serves as an important corridor for mining- and logistics-related activities in central Namibia. From these primary routes, a network of farm access roads, service tracks and informal jeep tracks provides internal access within and around EPL 10848, EPL 10849 and EPL 10850.

These routes are routinely used by landowners, farm workers and service providers and are suitable for the light vehicles and equipment required during exploration. No new permanent roads are proposed. Where access to specific drill sites or sampling locations cannot be achieved using existing tracks, short temporary access routes may be established and rehabilitated after use in accordance with the Environmental Management Plan (EMP).

1.5.2 Water Supply

Water supply within the project area is typically based on groundwater abstraction from farm boreholes, which is standard practice in rural parts of the Erongo and Otjozondjupa Regions. The proposed exploration activities require relatively small volumes of water, mainly for drilling, dust suppression and domestic use at temporary camps.

Water will be sourced either from existing boreholes on affected farms, subject to landowner consent and confirmation that abstraction rates are sustainable, or from commercial water suppliers transporting water from nearby towns such as Okahandja, Karibib or Omaruru, depending on the location of active exploration sites and logistical considerations. No

permanent water abstraction infrastructure will be installed as part of the exploration programme.

1.5.3 Power Supply

The licence areas are not directly connected to the national electricity grid, although electricity transmission infrastructure, including 66 kV and higher-voltage powerlines, occurs within the broader region. Exploration activities will therefore rely on portable power solutions such as diesel generators, solar-assisted hybrid systems and rechargeable battery-powered equipment.

Fuel storage and handling will be managed in accordance with the EMP and applicable safety standards, including the use of appropriate containment measures and spill-prevention controls to minimise environmental risk.

1.5.4 Sanitation and Waste Management

Temporary sanitation facilities will be provided at exploration sites and camps through the use of portable chemical toilets, which will be serviced by registered waste contractors as required. Domestic waste generated by exploration personnel will be collected regularly, stored in secure containers that prevent access by wildlife or livestock, and removed for disposal at approved municipal landfill facilities serving Okahandja, Karibib or Omaruru, depending on proximity to the active exploration area.

No waste will be buried, burned or disposed of on farmland. Hazardous wastes, including oily rags, used filters and other contaminated materials, will be stored separately and removed for disposal at licensed hazardous-waste facilities in accordance with applicable legislation.

1.5.5 Communication Networks

Mobile network coverage within the project area is generally adequate along major transport corridors but may be limited in more remote or low-lying areas within the licence boundaries. To ensure effective communication and operational safety, the exploration team will use a combination of mobile phones, satellite communication devices or two-way radio systems where required, as well as GPS-enabled digital mapping tools for navigation and site recording. Emergency communication and response procedures will be incorporated into the project’s EMP.

1.5.6 Accommodation

Accommodation for exploration personnel will be arranged using existing facilities wherever possible. Options may include farmstead accommodation subject to agreement with landowners, guest farms, lodges or guesthouses located in Okahandja, Karibib or Omaruru, or the establishment of a small temporary exploration camp within the licence areas.

Any temporary camp will be located in consultation with affected landowners and will include appropriate water storage, sanitation, waste management and power supply systems. Temporary camps will be dismantled once no longer required, and the sites rehabilitated in accordance with the EMP

1.6 NEED AND DESIRABILITY

The proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850 support Namibia's national development objectives by contributing to the sustainable growth of the minerals sector, which remains one of the country's key economic pillars. Mineral exploration underpins future mining development by expanding the national mineral-resource base and enabling informed decision-making regarding land use, investment and infrastructure planning. In this context, exploration plays a critical role in sustaining long-term economic growth, export earnings and employment opportunities, particularly in rural areas.

National policy instruments, including Vision 2030, the Fifth and Sixth National Development Plans (NDP5 and NDP6), the Harambee Prosperity Plan II, and the National Minerals Policy (2003), consistently identify mineral exploration as a strategic priority for economic diversification, industrial development and the attraction of responsible investment. By generating new geological information and reducing uncertainty, exploration activities contribute to improved resource governance and strengthen Namibia's competitiveness within regional and global mineral value chains.

EPL 10848, EPL 10849 and EPL 10850 are located within geologically favourable terrains associated with the Damara Belt, which is recognised for its mineral diversity, including dimension stone, pegmatite-hosted rare metals and structurally controlled mineral systems. The licence areas are accessible via existing national and district road networks and established farm infrastructure, allowing exploration to be undertaken efficiently and with relatively low logistical and environmental requirements. Current land uses, which are dominated by commercial livestock farming and low-intensity rural activities, are compatible

with carefully managed, small-scale exploration conducted in accordance with the Environmental Management Plan (EMP).

From a socio-economic perspective, the proposed exploration activities are expected to generate localised benefits within the Okahandja and Omaruru Districts. These benefits may include short-term employment opportunities, local procurement of goods and services, and increased demand for accommodation, transport, fuel and catering services in nearby towns and farming communities. While exploration does not provide long-term employment at this stage, it contributes to rural economic activity and supports broader regional development objectives.

The desirability of the project is further reinforced by Namibia's commitment to responsible natural resource development, as reflected in its environmental legislation and sustainable development policies. Compliance with the Environmental Management Act, 2007 (Act No. 7 of 2007) ensures that potential environmental risks associated with exploration are identified, assessed and managed proactively, while allowing socio-economic opportunities to be realised in a controlled and transparent manner.

Table 1-2 summarises the key considerations underpinning the need for, and desirability of, the proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850.

Table 1-2: Need and Desirability Matrix

Criterion	**Need**	**Desirability**
National economic priorities	Strengthens the upstream exploration pipeline required to sustain future mining development, exports and employment.	Licence areas are located in geologically prospective zones capable of contributing to mineral diversification and resource security.
Demand for minerals	Growing demand for industrial minerals, base metals and dimension stone driven by infrastructure development and technological applications.	Location within the Damara Belt increases the likelihood of economically viable mineral discoveries.

Criterion	Need	Desirability
Economic recovery and growth	Exploration stimulates investment and supports rural economies in line with national economic recovery strategies.	Activities rely on existing infrastructure and are consistent with low-impact, responsible exploration practices.
Regional socio-economic needs	Rural districts require increased economic participation, short-term employment and local business opportunities.	Exploration activities support service providers and communities in and around Okahandja and Omaruru.
Scientific and geological knowledge	Updated geological data are required to refine Namibia's mineral inventory and guide long-term planning.	Licence areas remain underexplored and offer potential to improve understanding of regional mineral systems.
Environmental suitability	Exploration must be undertaken in a manner that avoids unnecessary impacts on farming activities and ecosystems.	Low-intensity land use and manageable sensitivities make the areas suitable for EMP-guided exploration.
Infrastructure availability	Cost-effective exploration requires access to roads, services and support infrastructure.	Existing road networks and service centres reduce the need for new infrastructure development.
Policy alignment	Supports Vision 2030, NDP5/6, HPP II and the National Minerals Policy objectives.	Timing aligns with national efforts to promote exploration and attract responsible investment.

1.7 PROJECT ALTERNATIVES

The consideration of alternatives is a statutory requirement in terms of Regulation 8 of the Environmental Impact Assessment Regulations (GN No. 30 of 2012). While alternatives for mineral exploration projects are inherently limited—given that the spatial extent of an Exclusive Prospecting Licence is fixed by the mineral right issued under the Minerals (Prospecting and Mining) Act, 1992—reasonable alternatives relating to project

implementation and operational methods must still be evaluated to ensure that exploration is undertaken in an environmentally responsible and sustainable manner.

The alternatives considered for EPL 10848, EPL 10849 and EPL 10850 include the No-Go alternative, the Project (Go) alternative, and a range of operational alternatives relating to access, water use, sanitation, energy supply and waste management.

1.7.1 No-Go Alternative

Under the No-Go alternative, no exploration activities would be undertaken within EPL 10848, EPL 10849 or EPL 10850, and the proposed project would not proceed.

1.7.1.1 Environmental Implications

- No vegetation clearance, soil disturbance, drilling or temporary access creation would occur.
- Existing land uses, primarily commercial livestock farming and low-intensity rural activities, would continue unchanged.
- No additional pressure would be placed on groundwater resources, biodiversity or surface features.

1.7.1.2 Socio-Economic Implications

- No short-term employment or local procurement opportunities would be generated within the Okahandja and Omaruru Districts.
- No expenditure would occur on accommodation, fuel, transport or local services.
- Geological knowledge of the licence areas would remain limited, reducing Namibia's ability to plan future mineral-resource development in these areas.

1.7.1.3 Policy Alignment

While the No-Go alternative represents the environmental baseline against which the proposed project is assessed, it is not aligned with national policy objectives that promote mineral exploration as a catalyst for economic diversification, investment attraction and long-term resource planning.

1.7.2 Project (Go) Alternative

The Project (Go) alternative involves implementing the proposed exploration programme across EPL 10848, EPL 10849 and EPL 10850 using the phased, low-impact exploration activities described in Section 1.3.

1.7.2.1 Economic and Strategic Advantages

- Supports Namibia's long-term mineral-resource development and exploration pipeline.
- Generates local economic activity through procurement of fuel, transport, accommodation and technical services.
- Contributes to geological mapping and data generation within underexplored portions of the Damara Belt.
- Creates short-term employment opportunities during field-based exploration phases.

1.7.2.2 Environmental Justification

- Exploration activities are temporary, localised and largely reversible.
- No explosives or large-scale earthmoving are anticipated.
- Drill sites, access tracks and other disturbed areas will be rehabilitated in accordance with the Environmental Management Plan (EMP).
- Environmental risks are predictable and can be effectively managed through standard mitigation measures and monitoring.

Given the balance between socio-economic benefits and the low, manageable environmental footprint, the Project (Go) alternative is considered the preferred option, subject to full compliance with the EMP and regulatory requirements.

1.7.3 Siting and Micro-Siting Considerations

Although the boundaries of EPL 10848, EPL 10849 and EPL 10850 are fixed, flexibility exists in the internal placement of exploration activities. Micro-siting will be applied to the positioning of drill sites, temporary camps, access routes and sampling transects to avoid or minimise impacts on sensitive features identified during reconnaissance. These may include:

- boreholes and waterpoints;
- homesteads and farm infrastructure;
-

- drainage lines and riparian zones;
- heritage or archaeological features, should any be identified;
- steep or erosion-prone terrain

This internal optimisation ensures responsible spatial planning within the legally defined licence areas.

1.7.4 Operational Alternatives

A range of operational alternatives was considered to further reduce environmental impacts and improve resource efficiency. These are summarised in Table 1-3.

Table 1-3: Summary of Operational Alternatives Considered

Aspect	Alternatives Considered	Preferred Option and Justification
Access and transport	Road, rail, maritime	Road transport via existing national and farm roads; rail and maritime transport are not feasible for exploration activities.
Water supply	Borehole abstraction; water carting	Preference for water carting during early phases to limit pressure on local groundwater resources.
Sanitation	Mobile chemical toilets; septic systems	Mobile chemical toilets; lowest impact and fully reversible.
Energy supply	Solar; diesel; grid connection	Solar-assisted systems preferred; diesel used only where necessary (e.g. drilling). Grid connection not available.
Waste management	On-site disposal; off-site disposal; waste minimisation	Off-site disposal at approved facilities, supported by waste minimisation and recycling where feasible.
Camp setup	Farmstead accommodation; mobile exploration camp	Use of existing accommodation or demountable mobile camps with landowner consent; both options are temporary and low-impact.

1.7.5 Conclusion on Alternatives

The assessment of alternatives indicates that:

- the No-Go alternative preserves existing environmental conditions but does not contribute to national mineral-development objectives;
- the Project (Go) alternative delivers measurable socio-economic benefits while maintaining a low and manageable environmental footprint; and
- operational and micro-siting alternatives provide effective mechanisms to minimise disturbance and optimise resource use.

On this basis, the Project (Go) alternative is recommended as the most viable and sustainable option for EPL 10848, EPL 10849 and EPL 10850, subject to implementation of the EMP and ongoing regulatory oversight.

2 CHAPTER TWO: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1 INTRODUCTION

This Environmental Impact Assessment (EIA) Report for the proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850, located within the Okahandja and Omaruru Districts of Namibia, has been prepared in accordance with the country's environmental, mining and natural resource management legislation. The applicable legal and policy framework establishes the requirements that govern environmental protection, land-use management, pollution prevention, biodiversity conservation, occupational health and safety, and the responsible utilisation of natural resources during mineral exploration.

Namibia's environmental and sectoral legislation provides a structured framework to ensure that exploration activities are planned and implemented in a manner that:

- prevents pollution and ensures the responsible management of waste streams, including hydrocarbons, drilling residues, dust and noise;
- protects soil, vegetation, wildlife and water resources from unnecessary or avoidable disturbance;
- promotes sustainable land-use planning, particularly within agricultural landscapes and semi-arid rangeland environments;
- safeguards the occupational health and safety of exploration personnel, landowners and surrounding communities; and
- clarifies the roles, responsibilities and compliance obligations of the Proponent, competent authorities and other stakeholders.

This chapter presents an overview of the key national legislation, regulations, policies and relevant international commitments applicable to the proposed exploration programme. These legal and policy instruments inform the EIA process, guide the identification of potential impacts and mitigation measures, and provide the basis for the Environmental Management Plan (EMP). Compliance with this framework is required throughout the planning, implementation and closure phases of exploration activities on EPL 10848, EPL 10849 and EPL 10850.

2.2 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

A comprehensive legislative and policy framework that governs environmental protection, natural resource management and mineral exploration underpins Namibia's pursuit of sustainable development. This section identifies the key legal and policy instruments applicable to the proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850, and explains their relevance to the project. The instruments summarized below provide the legal basis for the Environmental Impact Assessment (EIA), inform the development and implementation of the Environmental Management Plan (EMP), and define the compliance obligations of the Proponent throughout the exploration lifecycle

Table 2-1 - Legal Compliance

Aspect	Legislation / Policy	Key Provisions	Relevance to the Exploration Project
Constitutional obligations	Constitution of the Republic of Namibia (1990)	Article 95(l): Protection of ecosystems and biodiversity; Article 16: Protection of lawful property and economic activity	Exploration must avoid undue environmental harm while constituting lawful economic activity subject to ECC and EMP controls.
National development planning	Vision 2030; NDP5; NDP6; Harambee Prosperity Plan II	Promote economic growth, mineral development, rural employment and sustainability	Exploration supports economic diversification, investment attraction and growth in the minerals sector.
Heritage protection	National Heritage Act, 2004 (Act No. 27 of 2004)	Protection of heritage resources; chance-find procedures	No known registered heritage sites occur within the licence areas; chance finds must be reported and managed in accordance with the Act.

Aspect	Legislation / Policy	Key Provisions	Relevance to the Exploration Project
	National Monuments Act, 1969 (Act No. 28 of 1969)	Protection of archaeological objects and fossils	Any archaeological discoveries require immediate cessation of work and notification to the National Heritage Council.
Environmental management	Environmental Management Act, 2007 (Act No. 7 of 2007)	Listed activities require EIA and ECC; pollution prevention; stakeholder engagement	Provides the legal basis for this EIA and EMP; compliance with ECC conditions is mandatory.
	EIA Regulations (GN No. 30 of 2012)	Prescribes EIA process, public consultation and reporting	Governs public participation, BID distribution, stakeholder registration and report preparation.
Pollution and waste	Draft Pollution Control and Waste Management Bill	Waste handling, hazardous materials and pollution control	Domestic, hydrocarbon and drilling-related waste must be managed in accordance with best practice and lawful disposal requirements.
Soil conservation	Soil Conservation Act, 1969 (Act No. 76 of 1969)	Prevention of soil erosion and degradation	Access routes, drill pads and camps must minimise soil disturbance and be rehabilitated post-use.
Biodiversity	National Biodiversity Strategy and Action Plan (NBSAP II)	Biodiversity conservation and sustainable use	Semi-arid savanna ecosystems require avoidance of sensitive flora and fauna and minimisation of vegetation clearance.

Aspect	Legislation / Policy	Key Provisions	Relevance to the Exploration Project
Hazardous substances	Hazardous Substances Ordinance, 1974 (Ordinance No. 14 of 1974)	Control of hazardous material storage and handling	Diesel, oils and drilling additives must be stored in bunded containers with spill response measures in place.
Air quality	Atmospheric Pollution Prevention Ordinance, 1976 (Ordinance No. 11 of 1976)	Control of dust and emissions	Dust suppression and equipment maintenance required to minimise air emissions.
Forestry and vegetation	Forest Act, 2001 (Act No. 12 of 2001)	Protection of listed tree species; permits for vegetation clearance	Protected tree species may occur; removal only permitted where unavoidable and authorised by the competent authority.
Water resources	Water Act, 1956 (Act No. 54 of 1956)	Prevention of water pollution	No contamination of surface or groundwater permitted; sanitation waste must be managed by licensed providers.
	Water Resources Management Act, 2013 (Act No. 11 of 2013)	Permits for abstraction and borehole drilling	Sustainable water sourcing required; permits needed for abstraction or new boreholes.
Occupational health and safety	Labour Act, 2007 (Act No. 11 of 2007)	Workplace safety, PPE, training and incident reporting	All contractors must comply with OHS requirements and safety standards.
Public health	Public and Environmental Health Act, 2015 (Act No. 1 of 2015)	Control of nuisances, sanitation and waste	Exploration must not create dust, noise or sanitation impacts affecting land users or workers.

Aspect	Legislation / Policy	Key Provisions	Relevance to the Exploration Project
Mining legislation	Minerals (Prospecting and Mining) Act, 1992 (Act No. 33 of 1992)	Governs EPL conditions, reporting and environmental duties	Exploration must comply with the conditions of EPL 10848, EPL 10849 and EPL 10850 and reporting to the Ministry of Mines and Energy.
Land-use planning	Township and Regional Planning Act, 1996 (Act No. 5 of 1996)	Land-use compatibility	Exploration on farmland requires landowner consent and must avoid interference with farming operations.
Fuel storage	Petroleum Products and Energy Act, 1990	Regulation of fuel storage and safety	On-site fuel storage must comply with safety, bunding and permitting requirements.
Climate policy	National Climate Change Policy (2011)	Low-emission and climate-resilient development	Preference for solar-assisted power systems and reduced generator use.

All legislation identified in Sections 2.1 and 2.2 is binding on the Proponent and applies throughout the duration of exploration activities on EPL 10848, EPL 10849 and EPL 10850. Compliance will be achieved through implementation of the Environmental Management Plan (EMP), adherence to licence conditions issued by the Ministry of Mines and Energy, and alignment with applicable sectoral regulatory requirements.

Where specialist compliance is required—such as heritage protection, water abstraction, vegetation clearance, hazardous material handling or fuel storage—the Proponent will engage suitably qualified professionals or licensed service providers. Environmental compliance auditing will form part of routine environmental monitoring conducted by the appointed Environmental Assessment Practitioner (EAP) or Environmental Control Officer (ECO), with findings reported to the competent authorities as required. All relevant permits and approvals must be obtained prior to the commencement of site-based exploration activities. These include, but are not limited to:

- *Environmental Clearance Certificate (ECC)* - Issued under the Environmental Management Act, 2007 by the Ministry of Environment, Forestry and Tourism (MEFT).
- *Permit for the Removal of Protected Tree Species* - Required under the Forest Act, 2001 where removal of protected vegetation is unavoidable.
- *Water Abstraction and Borehole Registration Permits* - Required under the Water Resources Management Act, 2013 for groundwater abstraction or drilling of water-supply boreholes.
- *Fuel Storage Permit (if applicable)* - Required where on-site fuel storage exceeds regulated thresholds.
- *Hazardous Waste Handling and Disposal Permits* - Required for off-site transport and disposal of hazardous waste.
- *Land Access and Surface Use Agreements* - Written consent from affected landowners is required prior to accessing farm properties.

Note: A mineral prospecting licence is not required, as the Proponent already holds valid Exclusive Prospecting Licences (EPL 10848, EPL 10849 and EPL 10850) issued under the Minerals (Prospecting and Mining) Act, 1992.

3 CHAPTER THREE: RECEIVING ENVIRONMENT

3.1 SOCIO-ECONOMIC ENVIRONMENT

The proposed exploration activities are located across EPL 10848, EPL 10849 and EPL 10850, which together form a clustered exploration project area spanning parts of the Karibib and Omaruru Districts in the Erongo Region, as well as the Okahandja District in the Otjozondjupa Region, central Namibia. Collectively, the licence areas are situated within a predominantly rural to peri-urban landscape characterised by commercial livestock farming, quarrying and mining-related land uses, transport infrastructure, and dispersed farmsteads, with functional linkages to nearby towns and regional service centres.

The three EPLs fall within the broader Karibib–Omaruru–Okahandja corridor, an area shaped by long-standing interactions between agriculture, mining, and transport activities. While settlement density within the licence boundaries is low, the surrounding environment includes established towns, farming communities, and transport routes that support regional economic activity and provide services, labour, and logistics relevant to exploration operations.

For national spatial context, Figure 3-1 presents a regional map of Namibia showing the location of the Erongo and Otjozondjupa Regions, and the approximate position of the project area within central Namibia. This figure situates the project in relation to major economic centres, national road networks, and administrative boundaries, providing a broader perspective for understanding regional connectivity and socio-economic linkages.

Figure 3-1: Regional Map of Namibia

Understanding the socio-economic characteristics of the receiving environment is essential for assessing how exploration-related activities—such as access, temporary employment, service demand, and land-use interactions—may influence surrounding farming operations, nearby towns, and local service centres across the three EPLs.

3.1.1 Regional Context

The project area is located across two economically significant regions, namely the Erongo Region and the Otjozondjupa Region, both of which play important roles in Namibia's national economy.

The Erongo Region is one of the country's most economically active regions, with an estimated population of approximately 210,000–230,000 people according to the 2023 Namibia Population and Housing Census (NSA, 2023). The regional economy is strongly driven by mining, logistics, manufacturing, fisheries, tourism, and commercial agriculture. Towns such as Karibib, Usakos, Arandis, Swakopmund and Walvis Bay form an integrated economic system supported by national roads, rail infrastructure, and port facilities. Mining and mining-related services generate sustained demand for labour, accommodation, fuel, transport, catering, and technical services—sectors that are also relevant to exploration-phase activities.

The Otjozondjupa Region, within which part of the project area (EPL 10850) is located, is similarly important at a national scale. The region serves as a key agricultural and transport hub, linking central Namibia to the northern regions and the capital, Windhoek. Okahandja, in particular, functions as a major service and labour centre, supporting commercial farming, mining logistics, and regional trade. According to NSA (2023), Otjozondjupa has a large economically active population, with livelihoods centred on formal employment, agriculture, transport services, and small- to medium-scale enterprises.

Across both regions, several shared socio-economic characteristics are relevant to the proposed exploration activities:

- *Livelihoods and income* **-** Household income is primarily derived from wages and salaries, commercial agriculture, mining-related employment, transport services, retail trade, and small businesses. The presence of established mining corridors increases the availability of skilled and semi-skilled labour and associated support services.
- *Demographic profile* - Both regions have a relatively young and mobile working-age population, with regular movement between towns and rural farm areas. This labour mobility supports short-term and contract-based employment typical of exploration projects.

- *Services and infrastructure* - The Erongo–Otjozondjupa interface is well served by national and district road networks (including the B2 and B1 corridors), rail infrastructure, electricity transmission lines along major routes, health facilities, schools, vocational training centres, and retail services. However, rural farm areas remain largely dependent on borehole-based water supply, gravel access roads, and off-grid energy systems.

Given this regional context, exploration activities across EPL 10848, EPL 10849 and EPL 10850 must be planned and implemented in a manner that avoids disruption to farming operations, protects groundwater resources, maintains access along shared transport routes, and remains compatible with existing economic activities within both regions.

3.1.2 Local Context – Karibib, Omaruru and Okahandja Districts and Surrounding Farms

At the local scale, the areas covered by EPL 10848, EPL 10849 and EPL 10850 are situated within a landscape dominated by commercial livestock farming, with additional land uses that include quarrying and dimension-stone activities, small-scale and historical mining, and transport-linked enterprises associated with the central Namibian interior. The project area is characterised by extensive, low-density rural land use, with widely dispersed farmsteads and limited permanent settlement within the licence boundaries.

The towns of Karibib, Omaruru and Okahandja function as the principal local service centres for the surrounding farm areas and collectively support the exploration programme through the provision of services, labour and logistics. These towns provide:

- public services such as schools, clinics, municipal administration and emergency services;
- retail outlets, fuel stations, workshops and general suppliers;
- accommodation facilities including guesthouses, lodges and small hotels; and
- local labour pools comprising skilled, semi-skilled and general workers with experience in farming, mining and transport-related activities.
- Local socio-economic characteristics

The immediate socio-economic environment across the three EPLs can be characterised by the following key features:

- *Settlement pattern* - Residential density within the project area is low. Farmsteads are widely spaced, and most farm workers reside on-site, while others commute

periodically from Karibib, Omaruru or Okahandja. There are no formal towns or high-density settlements within the EPL boundaries.

- *Land use* - Land use is predominantly focused on cattle and small-stock farming across semi-arid rangelands, supported by borehole-based water infrastructure. In addition, there are pockets of quarrying, dimension-stone extraction, mining infrastructure and transport-related activities. Tourism occurs at a limited scale on some properties but is not the dominant land use compared to the coastal areas of the Erongo Region.
- *Water supply* - Water supply is almost entirely dependent on groundwater abstraction from boreholes, supplemented by storage tanks, reservoirs and earth dams for livestock watering. This reliance on groundwater makes the protection of boreholes and associated infrastructure a key socio-economic and environmental sensitivity across all three EPLs.
- *Access* - Access to farms and exploration sites is provided through a network of existing farm tracks and secondary gravel roads, which connect to national and district routes, including the B2 and B1 corridors. These access routes are shared with farming operations and livestock movement and therefore require careful management during exploration activities.

3.1.2.1 Key socio-economic sensitivities

From a socio-economic perspective, the primary sensitivities relevant to exploration activities across EPL 10848, EPL 10849 and EPL 10850 include:

- grazing land used for livestock production and rotational grazing systems;
- farm infrastructure such as fences, gates, boreholes, pipelines, troughs and reservoirs;
- traffic, noise and visual disturbance affecting farm owners, workers and occasional visitors; and
- short-term pressure on local accommodation and services in Karibib, Omaruru and Okahandja during peak exploration periods.

These sensitivities highlight the importance of careful coordination with landowners and lawful occupiers, controlled access arrangements, and adherence to the Environmental Management Plan (EMP) to ensure that exploration activities remain compatible with existing rural livelihoods and land uses.

3.1.3 Key Socio-economic Indicators – Erongo Region

The proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850 are situated within an area influenced by two administrative regions, namely the Erongo Region and the Otjozondjupa Region. As a result, the socio-economic receiving environment reflects characteristics of both regions, particularly along the Karibib–Omaruru–Okahandja corridor, which functions as an integrated economic and service zone.

To contextualize78 the socio-economic setting of the project area, Table 3-1 presents selected demographic and socio-economic indicators for Erongo and Otjozondjupa Regions, compared with national averages, based on the NSA 2023 Population and Housing Census.

Table 3-1: Key Socio-Economic Indicators for Erongo and Otjozondjupa

Indicator	**Namibia (2023)**	**Erongo Region (2023)**	**Otjozondjupa Region (2023)**
Estimated population	~3.02 million	~214,000	~195,000
Sex ratio (males per 100 females)	~96	~104	~98
Population aged 15–59 years	~57%	~62%	~59%
Population aged 60+ years	~7%	~8%	~7%
Literacy rate (15+ years)	~91%	~94%	~90%
Labour force participation (15+ years)	~58%	~67%	~61%
Employment rate (of labour force)	~78%	~84%	~80%
Unemployment rate (of labour force)	~22%	~16%	~20%
Main income source – wages & salaries	~57%	~63%	~55%
Main income source – farming	~14%	~9%	~18%
Households with access to safe water	~87%	~92%	~88%
Households with no toilet facility	~36%	~18%	~30%
Households using wood/charcoal for cooking	~46%	~21%	~38%

*National and regional values based on NSA 2023 Population and Housing Census.

To contextualise the socio-economic setting of the project area, Table 3-1 presents selected demographic and socio-economic indicators for Erongo and Otjozondjupa Regions, compared with national averages, based on the NSA 2023 Population and Housing Census.

3.1.3.1 Regional socio-economic profile

Both Erongo and Otjozondjupa are among Namibia's more economically active regions, although they exhibit different livelihood structures:

- Erongo Region is strongly urban- and industry-oriented, with economic activity driven by:
    - mining and quarrying,
    - logistics and transport,
    - manufacturing,
    - tourism and fisheries along the coast, and
    - service industries.
- Otjozondjupa Region, particularly its southern and western districts (including Okahandja and surrounding farming areas), combines:
    - commercial livestock farming,
    - transport-linked services,
    - mining and exploration activity, and
    - peri-urban settlement expansion along the B1 corridor.

This dual-regional context is directly relevant to the three EPLs, which are located on commercial farming units but rely on urban centres in both regions for labour, services, and logistics.

3.1.3.2 Demographic and labour characteristics

Census data indicates that both regions have a high proportion of working-age residents (15–59 years), with Erongo showing the highest labour-force participation nationally. This demographic profile is well aligned with the requirements of exploration projects, which typically generate:

- short-term employment,
- contract-based work, and
- demand for semi-skilled and general labour.

Literacy levels in Erongo are notably high, reflecting better access to education and vocational training, while Otjozondjupa displays literacy rates close to the national average, with a stronger link between livelihoods and agricultural production.

3.1.3.3 Income sources and livelihoods

The dominant source of household income in both regions remains wages and salaries, although farming contributes a higher share of household income in Otjozondjupa than in Erongo. This distinction is important for the project context, as:

- Exploration activities on EPL 10848, EPL 10849 and EPL 10850 occur within farming landscapes, where:
    - livestock production,
    - grazing access, and
    - borehole water supply

    are central to livelihoods.

Consequently, even small-scale disturbances to land or water infrastructure may have disproportionate socio-economic implications if not carefully managed.

3.1.3.4 Access to services and household conditions

Access to safe water and sanitation is generally better in Erongo Region, reflecting higher levels of urbanisation and infrastructure development. In contrast, Otjozondjupa retains:

- a higher proportion of households without formal sanitation, and
- greater reliance on wood or charcoal for cooking in rural areas.

These indicators highlight the importance of:

- protecting groundwater resources,
- preventing pollution or contamination, and
- managing waste and sanitation carefully during exploration activities.

3.1.3.5 Implications for Exploration Activities on EPL 10848, EPL 10849 and EPL 10850

Based on the socio-economic indicators outlined above, the following considerations are central to the responsible implementation of the proposed exploration programme:

- Local employment and procurement should prioritise residents from Karibib, Omaruru and Okahandja, as well as surrounding farm communities;
- Farm-based livelihoods, particularly livestock production, must not be compromised through disturbance to grazing land, boreholes, fences, or access routes;
- Dust, noise and traffic impacts must be managed carefully, given the reliance of rural households on a quiet and functional working landscape;

- Communication and coordination with landowners and lawful occupiers are essential to avoid disruption to farming operations and household routines.

Overall, while Erongo and Otjozondjupa Regions exhibit relatively strong socio-economic performance at a regional scale, the local receiving environment of the three EPLs remains sensitive due to its dependence on land, water, and agricultural infrastructure. With appropriate mitigation measures embedded in the Environmental Management Plan (EMP), exploration-related socio-economic impacts are expected to remain localised, temporary and manageable, while generating modest but positive benefits for the surrounding communities.

3.1.4 Socio-Economic Relevance to the Project (EPL 10848, EPL 10849 and EPL 10850)

The proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850 are expected to generate a range of localised socio-economic effects within the surrounding commercial farming areas and nearby service centres, including Karibib, Omaruru and Okahandja. These effects are typical of early-phase mineral exploration projects, which are characterised by a limited spatial footprint, short- to medium-term duration, and a high degree of reversibility when appropriate mitigation measures are applied.

Given that all three EPLs are located on commercial farming units, the socio-economic relevance of the project is closely linked to interactions with existing land uses, access infrastructure, water resources, and rural livelihoods rather than to population displacement or large-scale settlement impacts.

3.1.4.1 Potential Positive Contributions

The principal anticipated positive socio-economic contributions associated with the exploration programme across the three EPLs include the following:

- Short-term direct employment opportunities, particularly for:
    - general labourers,
    - drivers and machine operators,
    - security personnel, and
    - camp support staff (e.g. cooks, cleaners and general assistants).
- Procurement of goods and services from nearby towns and service centres, including:
    - fuel and lubricants,
    - accommodation and catering,
    - vehicle maintenance, repairs and mechanical services,

    - hardware, consumables and general supplies.
- Supplementary income opportunities for affected farms, particularly where:
    - temporary access routes traverse private land,
    - short-term exploration camps, drill sites or equipment laydown areas are hosted, and
    - land-use or access compensation agreements are negotiated between the Proponent and landowners.

While these contributions are modest in scale and temporary in nature, they are locally significant, especially within a farming-based rural economy that is periodically affected by drought conditions, variable livestock productivity, and fluctuating agricultural income.

3.1.4.2 Key Socio-Economic Sensitivities

Because EPL 10848, EPL 10849 and EPL 10850 are all situated within commercial livestock farming areas, the most important socio-economic sensitivities are directly linked to land, water resources and farm infrastructure, including:

- Protection of boreholes and groundwater infrastructure, which are essential for:
    - livestock production,
    - domestic use by farm households and workers.
- Minimisation of disturbance to grazing camps and rotational grazing systems, which are critical for sustainable rangeland management in semi-arid environments.
- Preservation of farm infrastructure, particularly:
    - fences and gates,
    - water pipelines,
    - troughs, tanks and reservoirs,
    - internal access roads and tracks.
- Avoidance of unnecessary interference with farm security arrangements, including controlled access points and movement restrictions.
- Management of dust, noise and traffic impacts, which may affect:
    - livestock behaviour and health,
    - farm worker living conditions,
    - nearby peri-urban areas, particularly in proximity to Karibib, Omaruru and Okahandja.

Although nature-based tourism and recreational land uses are not dominant within the immediate EPL areas, any visitor-related activities on adjacent farms may also be sensitive to changes in access, visual intrusion, dust and noise.

3.1.4.3 Overall Socio-Economic Sensitivity Rating

The overall socio-economic sensitivity of the areas covered by EPL 10848, EPL 10849 and EPL 10850 is assessed as low to moderate, based on the following considerations:

- Settlement density within the project areas is low, with no towns or high-density residential areas located within the EPL boundaries;
- Exploration activities are temporary, localised and reversible, and do not involve permanent land-use change;
- The majority of potential socio-economic impacts can be effectively mitigated through:
    - formal access and surface-use agreements with landowners,
    - clear communication channels and grievance mechanisms,
    - strict compliance with the Environmental Management Plan (EMP), and
    - enforcement of dust, noise and traffic management measures.

When properly managed, the proposed exploration programme is therefore expected to pose manageable socio-economic risks, while delivering localised short-term economic benefits, without resulting in:

- long-term displacement of existing land uses, or
- permanent disruption to farming livelihoods and rural socio-economic systems.

3.2 CLIMATE

3.2.1 Overview of Climatic Setting

The proposed exploration areas covered by EPL 10848, EPL 10849 and EPL 10850 are located within Namibia's central-western semi-arid climatic zone, spanning parts of the Erongo Region and the adjacent Otjozondjupa Region. The climatic regime across all three licence areas is broadly similar and is characterised by:

- Low and highly variable annual rainfall,
- High summer temperatures and intense solar radiation,
- Cool to cold winter nights,
- Very high evaporation rates, and
- Persistently low relative humidity.

These conditions are typical of the transition zone between the Central Plateau, the Khomas Hochland and the Namib Escarpment, where water scarcity and climatic variability strongly influence land use, farming practices and operational planning.

Climatic conditions therefore represent a key environmental factor in the planning and execution of exploration activities across all three EPLs, particularly in relation to:

- Water availability and storage,
- Worker heat exposure and occupational health,
- Dust generation and access-road conditions,
- Fire risk management, and
- Seasonal accessibility of farm tracks and drainage crossings.

3.2.2 Rainfall Patterns

Rainfall across EPL 10848, EPL 10849 and EPL 10850 is low, erratic and strongly seasonal, with precipitation occurring predominantly during the summer rainfall period between December and March. Based on national climatic datasets, the licence areas receive an average annual rainfall of approximately 150–250 mm per year (Figure 3-2).

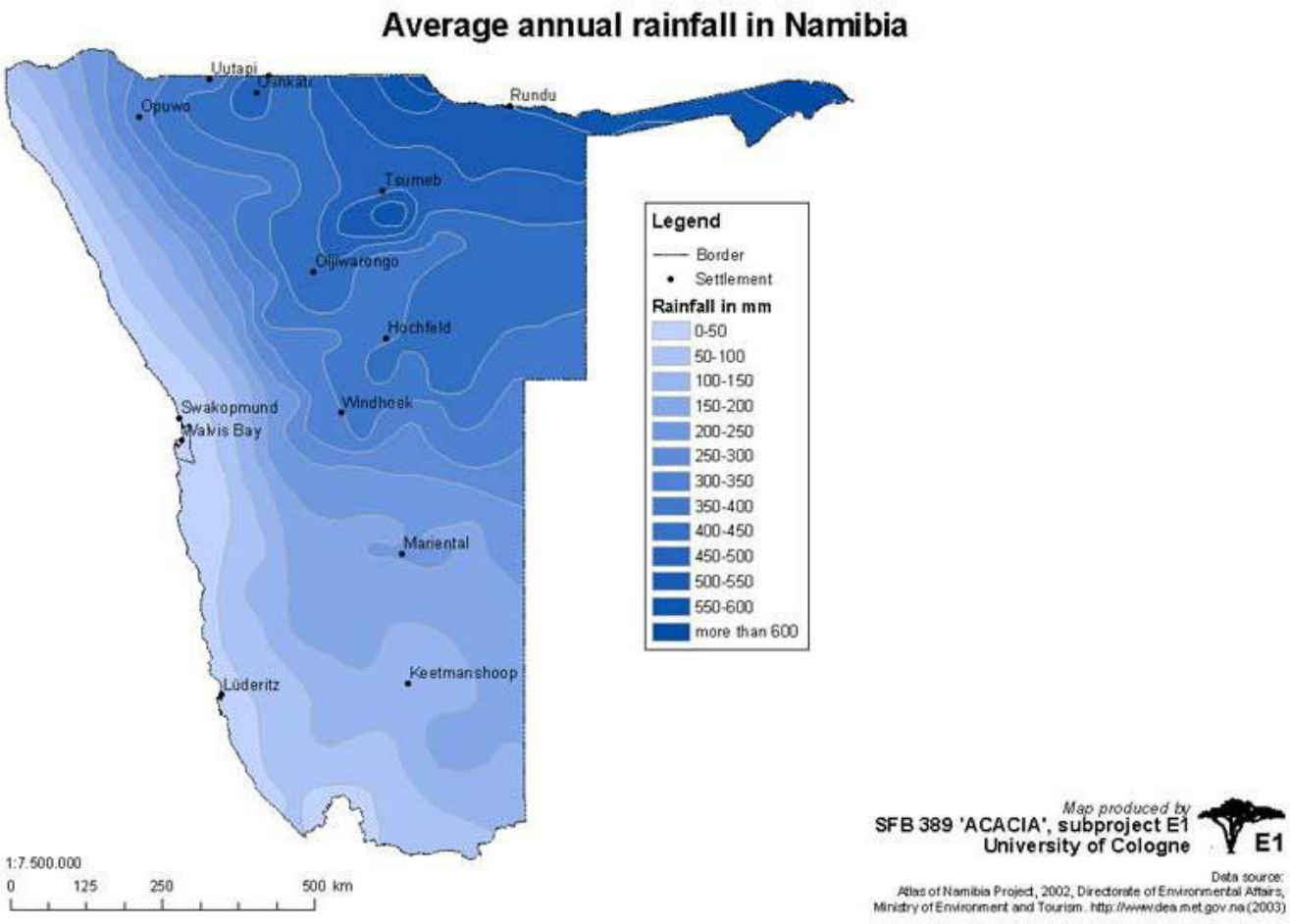

Figure 3-2: Average Annual Rainfall in Namibia

Rainfall typically occurs as short-duration, high-intensity convective thunderstorms that are spatially localised and followed by prolonged dry periods. The project area lies within a transitional rainfall gradient, with slightly higher rainfall toward the eastern portions of the licence areas and decreasing rainfall toward the west.

The high spatial and temporal variability of rainfall is illustrated in Figure 3-3, which shows year-to-year rainfall fluctuations exceeding 40–60% across central Namibia.

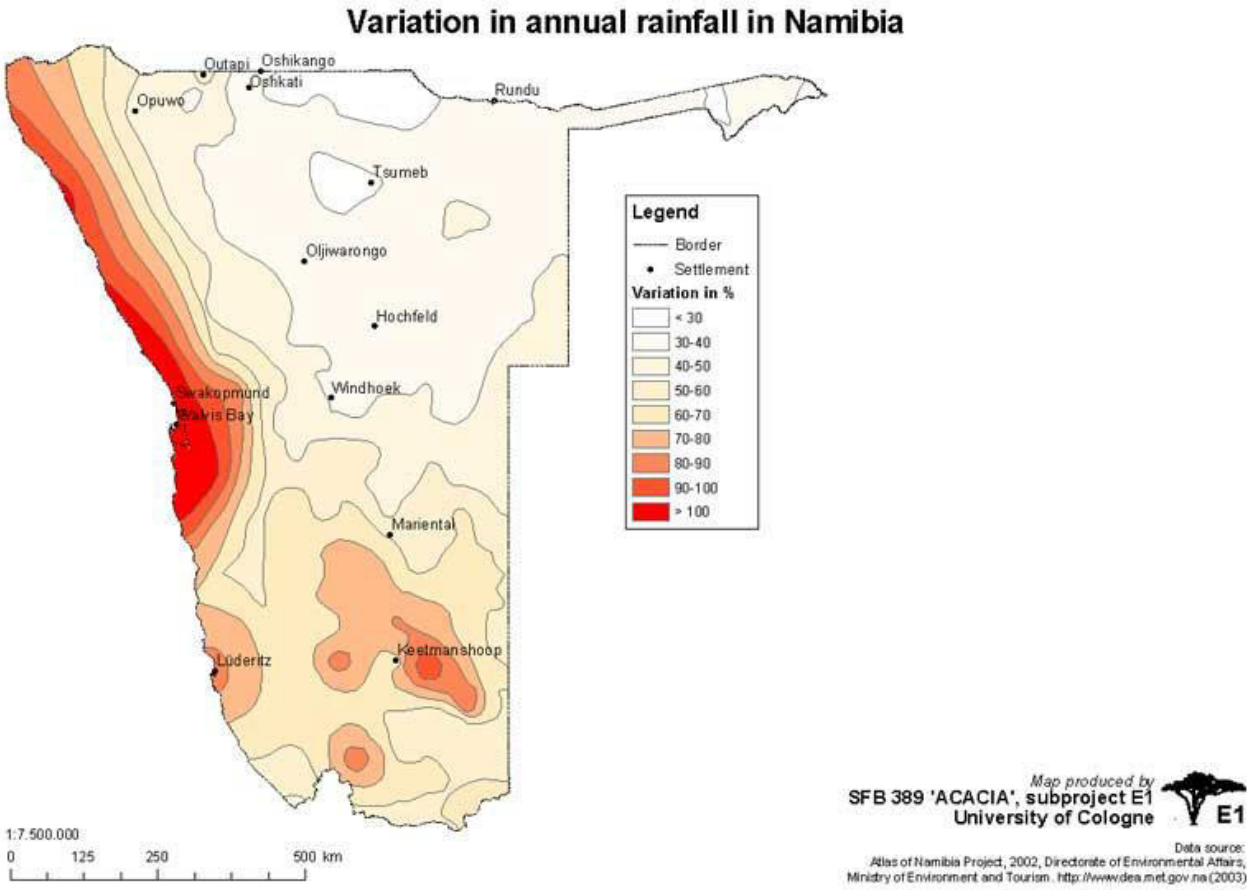

Figure 3-3: Variation in Annual Rainfall in Namibia

This variability has direct implications for exploration activities, including:

- Uncertainty in water availability for drilling and dust suppression,
- The need for conservative water budgeting,
- Temporary access constraints following heavy rainfall, and
- Localised flash flooding within ephemeral drainage lines.

3.2.3 Climate Variability and Extremes

Namibia is among the most climatically variable countries in sub-Saharan Africa. The central-western regions encompassing the three EPLs experience:

- Recurring drought cycles at intervals of approximately 3–5 years,

- Occasional extreme rainfall events causing short-term flooding,
- Extended multi-year dry periods, and
- Pronounced inter-annual variability in vegetation cover and soil moisture.

These climatic extremes require exploration programmes to be designed with operational flexibility, including adaptable drilling schedules, contingency planning for water supply, and seasonal timing of heavy vehicle movements

3.2.4 Temperature Regimes

Average annual temperatures across EPL 10848, EPL 10849 and EPL 10850 range between 20–22°C, consistent with central-western Namibia (Figure 3-4).

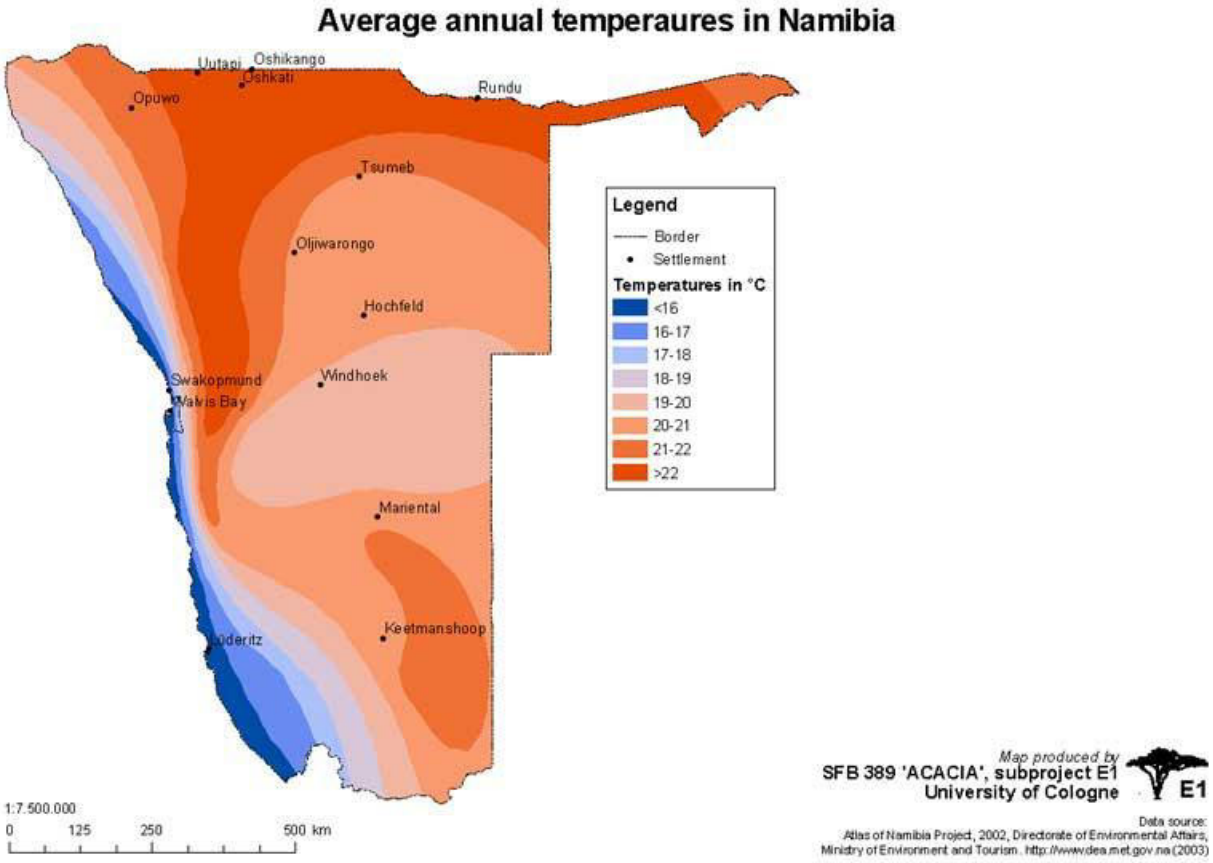

Figure 3-4: Average Annual Temperatures in Namibia

Seasonal patterns are typical of semi-arid Namibia:

a. Summer (October–March)

- Daytime maximum temperatures typically range between 32–36°C, with occasional extremes above 38°C.
- Elevated heat stress risks for field personnel.
- Increased water demand for dust suppression and cooling

b. Winter (June–August)

- Daytime temperatures range between 18–25°C.
- Night-time temperatures frequently drop to 2–6°C, with occasional near-freezing conditions.
- Cold, dry nights may increase worker fatigue and require appropriate PPE.

Temperature extremes influence drilling efficiency, dust generation, fuel storage safety and worker health, necessitating strict adherence to occupational health and safety protocols.

3.2.5 Evaporation and Water Balance

Evaporation rates across the project area are among the highest in Namibia, averaging approximately 3,000–3,400 mm per year (Figure 3-5).

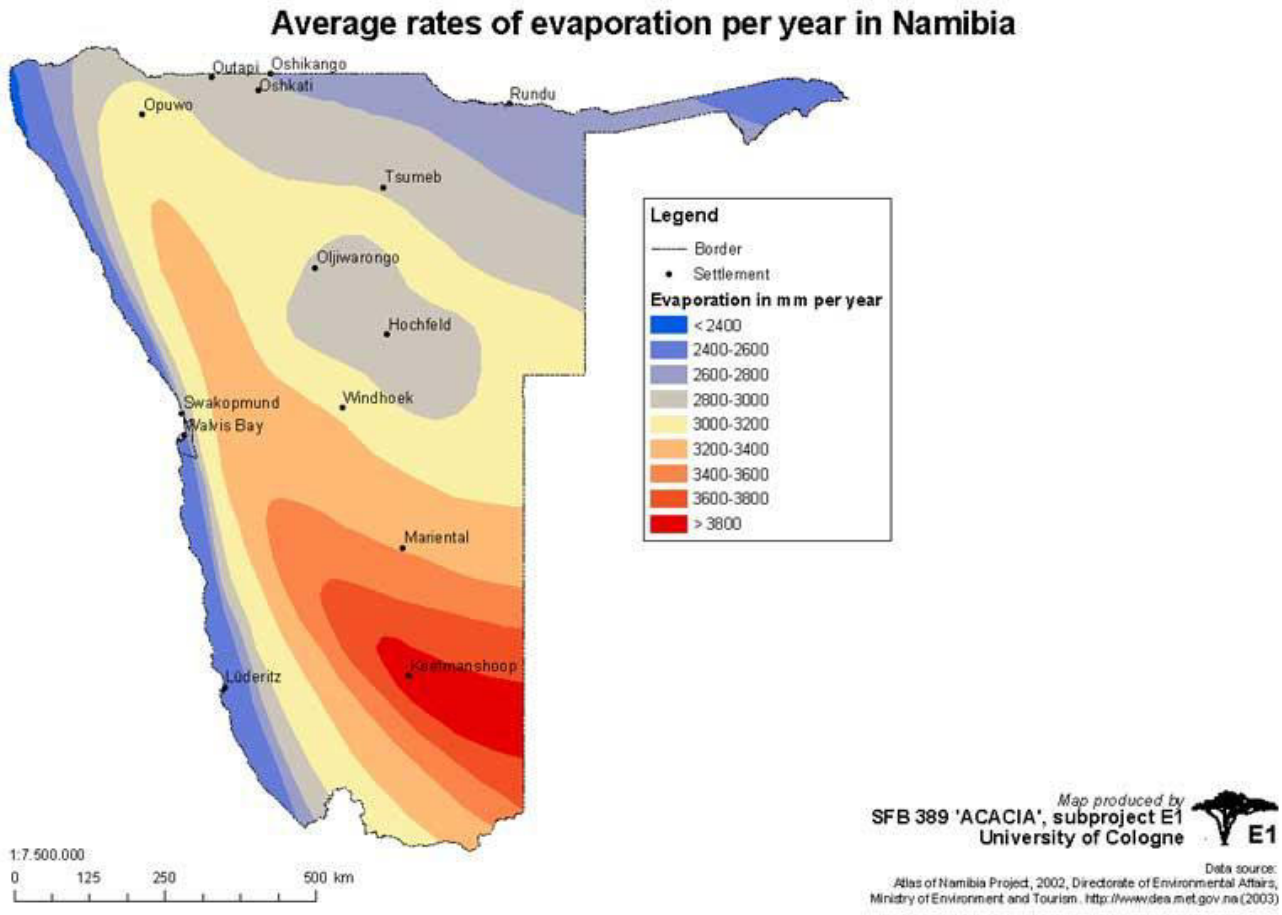

Figure 3-5: Average Evaporation Rates in Namibia

Because evaporation greatly exceeds rainfall, the water balance across all three EPLs is strongly negative. The national water deficit map (Figure 3-6) places the project area within a 2,000–2,500 mm annual water-deficit zone.

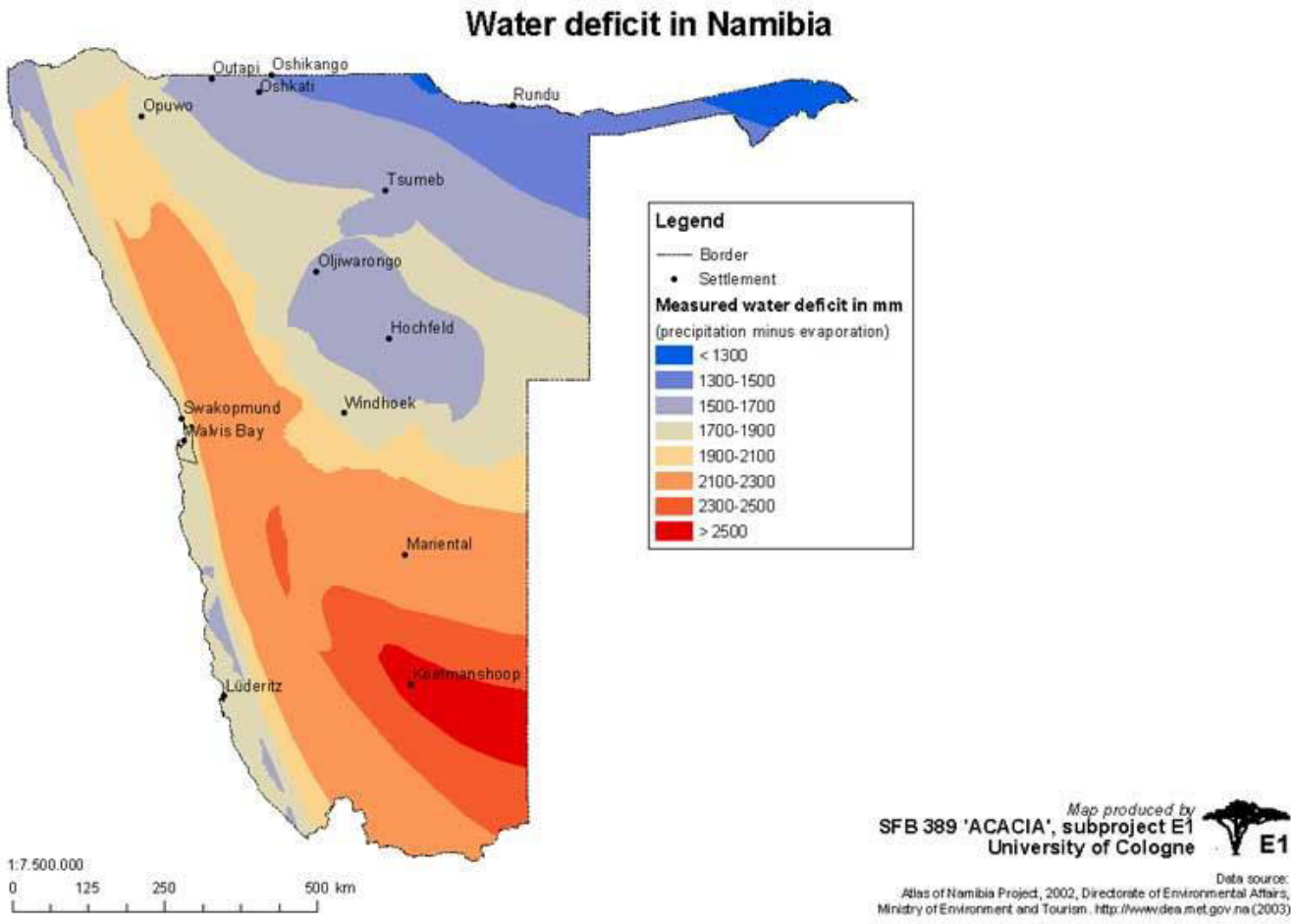

Figure 3-6: Water Deficit Map for Namibia

This reinforces the need for:

- Careful water permitting and abstraction planning under the Water Resources Management Act (2013),
- Minimisation of evaporation losses from tanks and drill sumps,
- Efficient water storage using lined tanks or portable bowser systems.

3.2.6 Humidity and Atmospheric Moisture

Relative humidity across the EPL areas is generally low throughout the year and reaches its lowest levels during the dry winter months (July–September), typically 10–20% (Figure 3-7).

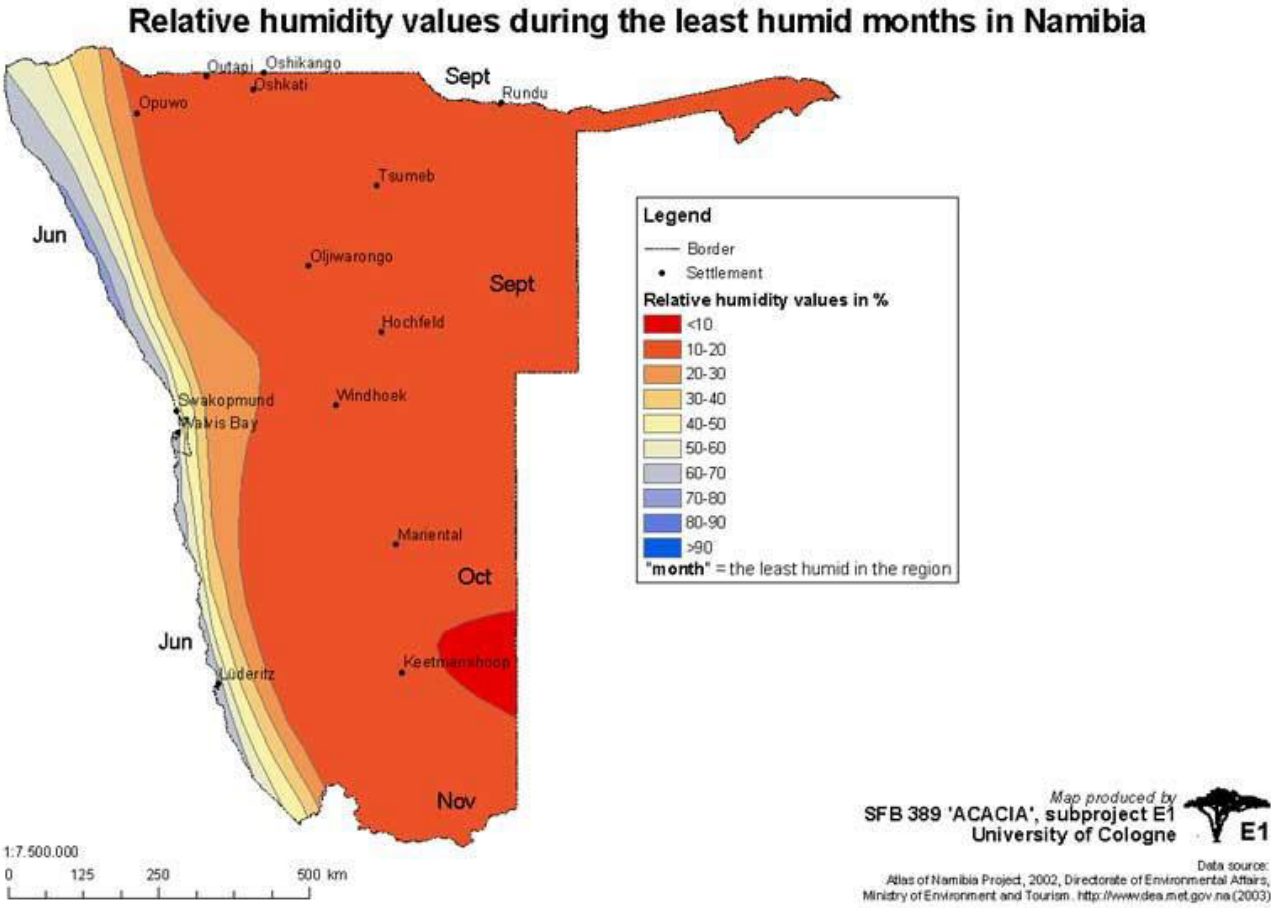

Figure 3-7: Relative Humidity Map for Namibia

Low humidity contributes to:

- Increased dust generation from vehicle movement and drilling,
- Elevated dehydration risk for field staff,
- Increased fire danger when combined with wind and dry vegetation, and
- Rapid drying of soils and drill cuttings.

These factors require robust dust management protocols and worker hydration plans.

3.2.7 Wind Patterns

Prevailing winds in the Karibib–Omaruru–Erindi area typically originate from the east to southeast, particularly during winter and spring. Seasonal wind characteristics include:

- Strong late-winter and early-spring gusts (August–October),
- Occasional berg-wind conditions bringing hot, dry air, and
- Enhanced dust entrainment during high-wind periods.

Wind direction and intensity are important considerations for the placement of drilling rigs, fuel storage areas, camps and dust-control measures

3.2.8 Solar Radiation

The project area receives very high solar radiation, averaging 5.8–6.2 kWh/m²/day (Figure 3-8).

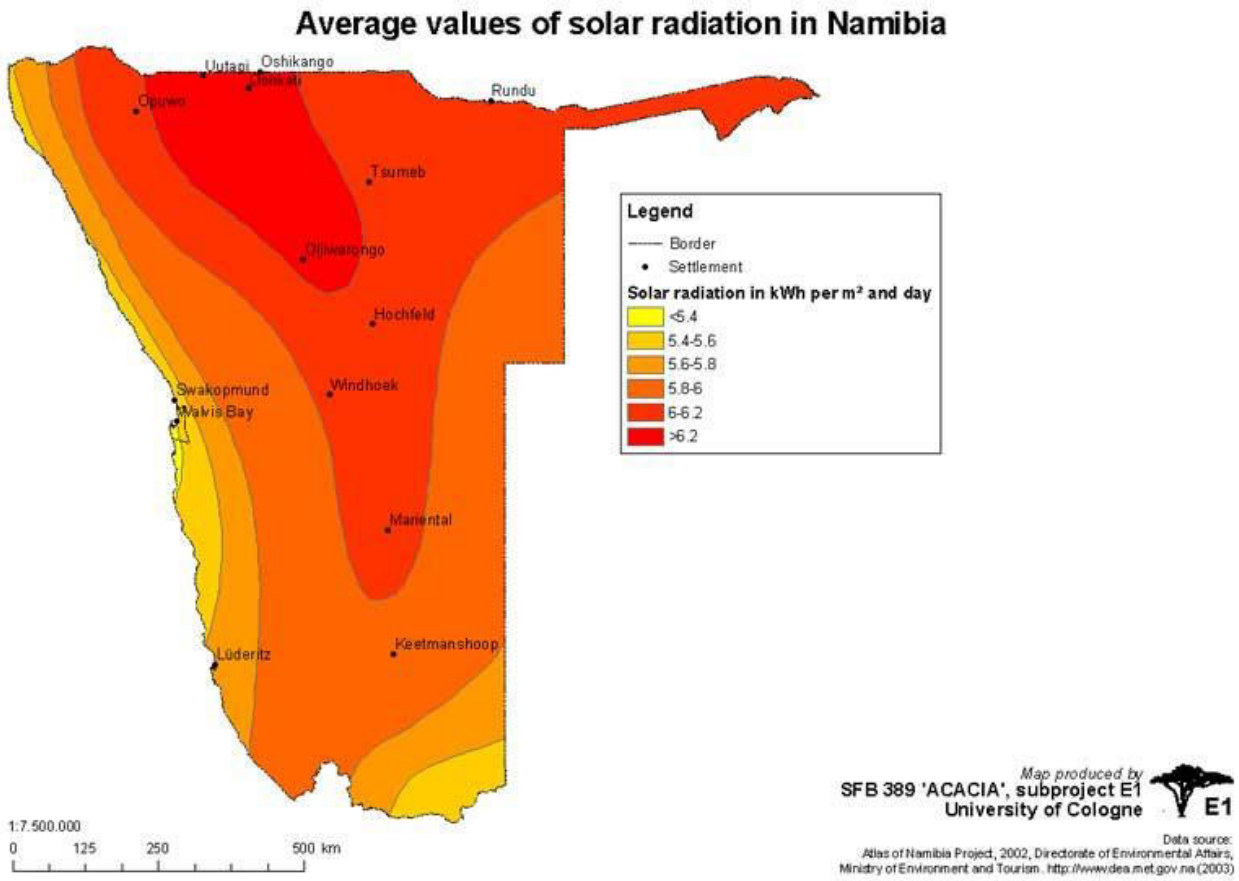

Figure 3-8: Solar Radiation Map

This presents opportunities for:

- Solar-powered field equipment and camp infrastructure,
- Reduced reliance on diesel generators, and
- Alignment with Namibia's National Climate Change Policy and low-carbon best practice.

3.2.9 Implications of Climate for Exploration Activities

The climatic characteristics of EPL 10848, EPL 10849 and EPL 10850 directly influence exploration planning and execution. The most suitable period for fieldwork is generally May to September, when temperatures are cooler, rainfall is minimal and access conditions are more reliable.

3.2.9.1 Operational Considerations

Key operational considerations include:

- Strict water-use planning due to scarcity and high evaporation,
- Enhanced dust suppression and traffic management,
- Heat-stress management protocols for summer operations,
- Flood-risk awareness near ephemeral drainage lines,
- Secure anchoring of temporary structures during windy periods.

3.2.9.2 Overall Assessment

With appropriate seasonal timing, water management, dust control and adherence to the Environmental Management Plan (EMP), the climatic conditions across all three EPLs present manageable environmental and operational risks during exploration. Climate-related constraints are well understood and can be effectively mitigated through standard best-practice measures.

3.3 TOPOGRAPHY, RELIEF AND LANDSCAPES

The project areas covered by EPL 10848, EPL 10849 and EPL 10850 are situated within Namibia's central-western interior, spanning portions of the Karibib District in the Erongo Region and extending toward the southern margins of the Otjozondjupa Region. Collectively, the licence areas fall within the transitional zone between the interior plateau, the Damara Orogen, and the western escarpment systems that descend toward the Namib coastal plains.

3.3.1 Regional Topographic Setting

At a regional scale, the exploration licences are located within a moderate- to high-elevation belt, with altitudes generally ranging between 1,100 m and 1,600 m above sea level. This zone forms part of the interior plateau that rises eastward from the coastal lowlands near Swakopmund and Walvis Bay toward Karibib, Okahandja and Otjiwarongo.

The Elevations and Relief Map of Namibia (Figure 3-9) indicates that all three EPLs are positioned within this interior plateau region, characterised by:

- gently undulating plains,
- isolated hills and ridges,
- shallow valleys and ephemeral drainage features, and
- scattered rocky outcrops associated with the Damara Belt lithologies.

The western escarpment zone, visible on Figure 3-9, contributes to locally increased relief in parts of EPL 10849 and EPL 10850, particularly where terrain transitions toward the Erindi

and Omburo areas. These elevation changes influence surface runoff behaviour, soil development, vegetation structure, and access conditions.

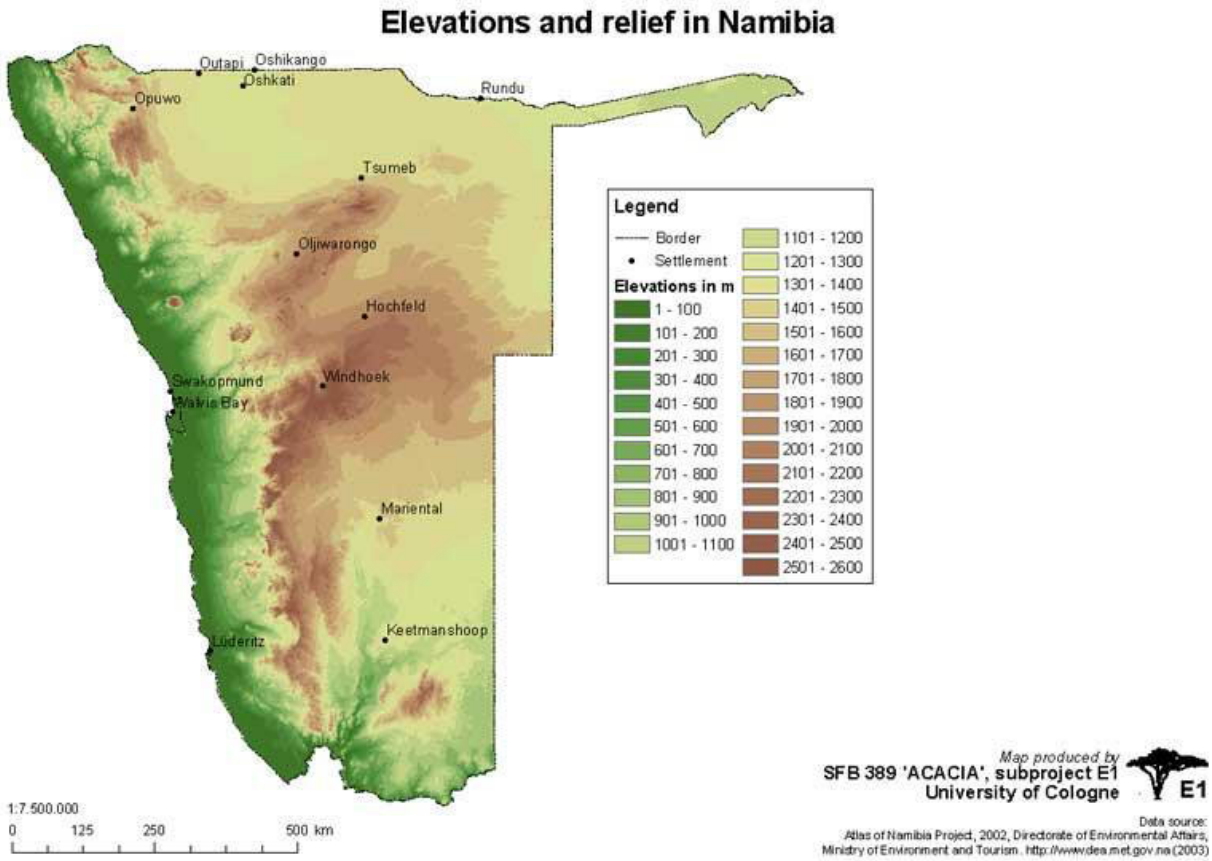

Figure 3-9: Elevations and Relief in Namibia

3.3.2 Local Relief and Landform Characteristics

At the local scale, the landscapes within EPL 10848, EPL 10849 and EPL 10850 are dominated by:

- broad, gently rolling plains used primarily for commercial livestock farming,
- low rocky ridges and inselberg-like features,
- shallow depressions and pans that may temporarily collect runoff after heavy rainfall, and
- ephemeral drainage lines that feed into larger systems such as the Swakop River catchment.

The terrain is generally accessible to light exploration vehicles, although rocky substrates, shallow soils, and occasional slope breaks require careful route planning, particularly for drill rigs, fuel transport vehicles and water bowsers. Areas of increased relief or broken terrain may occur locally within each EPL, but no extreme or mountainous topography is present.

The Altitudinal Profiles of Namibia (Figure 3-10) illustrate the east–west elevation gradient across central Namibia, highlighting the gradual rise from the coastal plain to the interior plateau. The profiles confirm that the EPLs are located on the upper plateau zone, where slopes are generally moderate but locally variable due to geological controls.

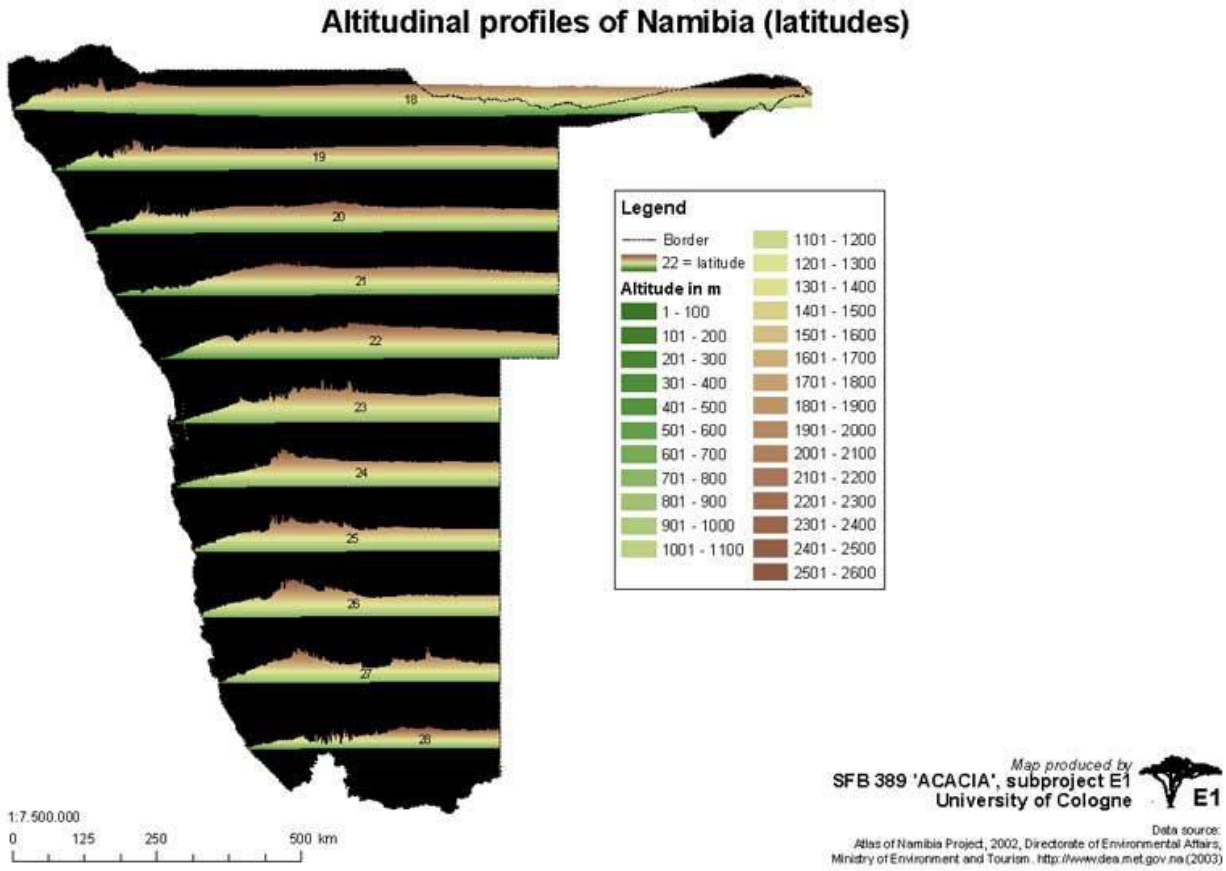

Figure 3-10: Altitudinal Profiles of Namibia

3.3.3 Drainage and Erosion Sensitivity

Drainage within the licence areas is dominated by ephemeral systems, which remain dry for most of the year but may convey runoff during intense summer rainfall events. These drainage features:

- are typically shallow and poorly incised,
- may support slightly denser vegetation,
- can become erosion-sensitive if disturbed, and
- require avoidance or careful crossing during access creation.

Because soils are generally shallow, stony and weakly developed, surface disturbance associated with drilling, temporary access tracks or camp establishment has the potential to increase localised erosion if not properly managed. However, given the low relief and limited

rainfall intensity for most of the year, erosion risks are considered manageable with standard mitigation measures, including proper site selection, runoff control and rehabilitation.

3.3.4 Landscape Character and Visual Context

The landscape character across the three EPLs is typical of Namibia's central-western farming and mining regions and is defined by:

- open savanna plains,
- low visual contrast,
- limited permanent infrastructure outside farmsteads and access roads, and
- a strong sense of remoteness away from towns.

Visual sensitivity is generally low to moderate, particularly given the existing presence of farming infrastructure, quarries, transmission lines and regional transport routes in the broader landscape. Exploration activities are temporary and small in scale, and any visual disturbance associated with drill rigs, vehicles or camps will be short-lived and reversible.

3.3.5 Implications for Exploration Activities

From a topographic and landscape perspective, the terrain across EPL 10848, EPL 10849 and EPL 10850 is considered generally suitable for low-impact mineral exploration, subject to careful planning and EMP implementation. Key operational considerations include:

- selecting drill sites on stable, gently sloping ground,
- avoiding ephemeral drainage lines and rocky ridges where practicable,
- aligning access routes with existing farm tracks to minimise disturbance,
- implementing erosion-control measures at disturbed sites, and
- rehabilitating all temporary tracks, drill pads and laydown areas following use.

Overall, the topography and relief of the project area do not present major physical constraints to exploration, but they do require site-specific planning and landowner coordination to ensure safe access, minimal erosion risk, and effective rehabilitation.

3.4 SOILS

Soils across EPL 10848, EPL 10849 and EPL 10850 are typical of Namibia's central-western interior, reflecting semi-arid climatic conditions, shallow weathering profiles, and the strong influence of underlying Damara Belt geology. The soil cover within the licence areas is generally thin, weakly developed and spatially variable, closely linked to local relief, bedrock exposure and drainage patterns.

According to the Dominant Soils Map of Namibia (Figure 3-11), the project areas are characterised by a mosaic of the following soil groups:

- Rock outcrops and lithic soils, particularly on ridges, hills and structurally controlled highs, where bedrock is exposed or soils are extremely shallow;
- Eutric Regosols, representing weakly developed, erosion-prone soils common on slopes and disturbed terrain;
- Haplic Calcisols, frequently associated with calcrete horizons in valley bottoms and gently sloping plains;
- Chromic and Cambic Arenosols, occurring in deeper sandy patches on flatter terrain and interdune-like plains.

These soil types typically have:

- low organic content,
- limited water-holding capacity,
- high infiltration rates when undisturbed, and
- a tendency to compact or erode once vegetation cover is removed.

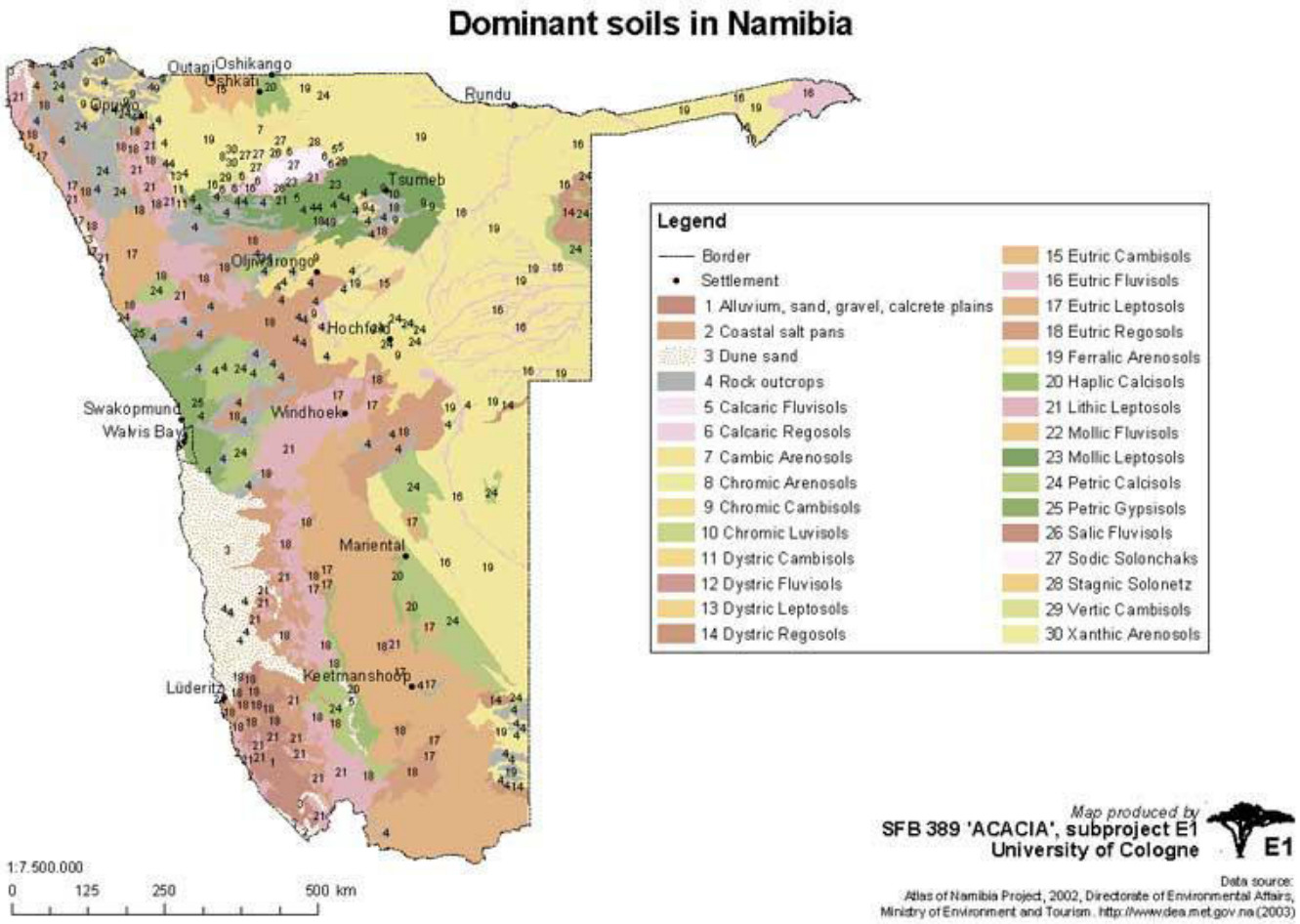

Figure 3-11: Dominant Soils in Namibia

3.4.1 Soil Sensitivity and Land-Use Implications

The soils within all three EPLs are considered to have low agricultural potential, supporting extensive rather than intensive land use, primarily commercial livestock grazing. However, despite their low productivity, these soils are environmentally sensitive to physical disturbance, particularly from:

- vehicle traffic,
- drilling pad construction,
- temporary access tracks, and
- repeated turning or parking of heavy equipment.

Where sandy or calcareous substrates dominate, erosion risk increases significantly once surface crusts or vegetation cover are disturbed. This is especially relevant in areas where ephemeral drainage lines or shallow slopes are present.

3.4.2 Implications for Exploration Activities

Soil characteristics across EPL 10848, EPL 10849 and EPL 10850 have direct implications for exploration planning and environmental management, including:

- limiting the spatial extent of ground disturbance,
- using existing farm tracks wherever possible,
- avoiding repeated vehicle movement over the same disturbed areas,
- implementing erosion-control measures around drill pads and access routes, and
- ensuring full rehabilitation of disturbed surfaces following exploration activities.

Strict adherence to the Environmental Management Plan (EMP) will be required to prevent unnecessary soil degradation and to ensure that post-exploration land capability is restored to pre-disturbance conditions.

3.5 GEOLOGY

The geological framework underlying EPL 10848, EPL 10849 and EPL 10850 forms part of the Southern Central Zone of the Damara Orogenic Belt, one of Namibia's most geologically diverse and mineral-prospective regions. This belt has undergone multiple phases of deformation, metamorphism and intrusion, resulting in complex lithological and structural assemblages that are highly relevant for mineral exploration.

3.5.1 Regional Geological Setting

The licence areas are underlain predominantly by:

- Mica schists and quartzites, forming the dominant bedrock across large portions of the EPLs;

- Granitic and granitoid intrusions, associated with regional tectonism and thermal events;
- Calcrete deposits, particularly within valley bottoms, drainage lines and low-relief areas; and
- Fractured crystalline rock aquifers, which influence both groundwater movement and drilling-water availability.

The Groundwater Basins and Rock Types Map of Namibia (Figure 3-12) confirms that the project area lies within a geologically complex terrain characterised by schistose and granitic formations typical of the Karibib–Usakos–Omaruru structural corridor.

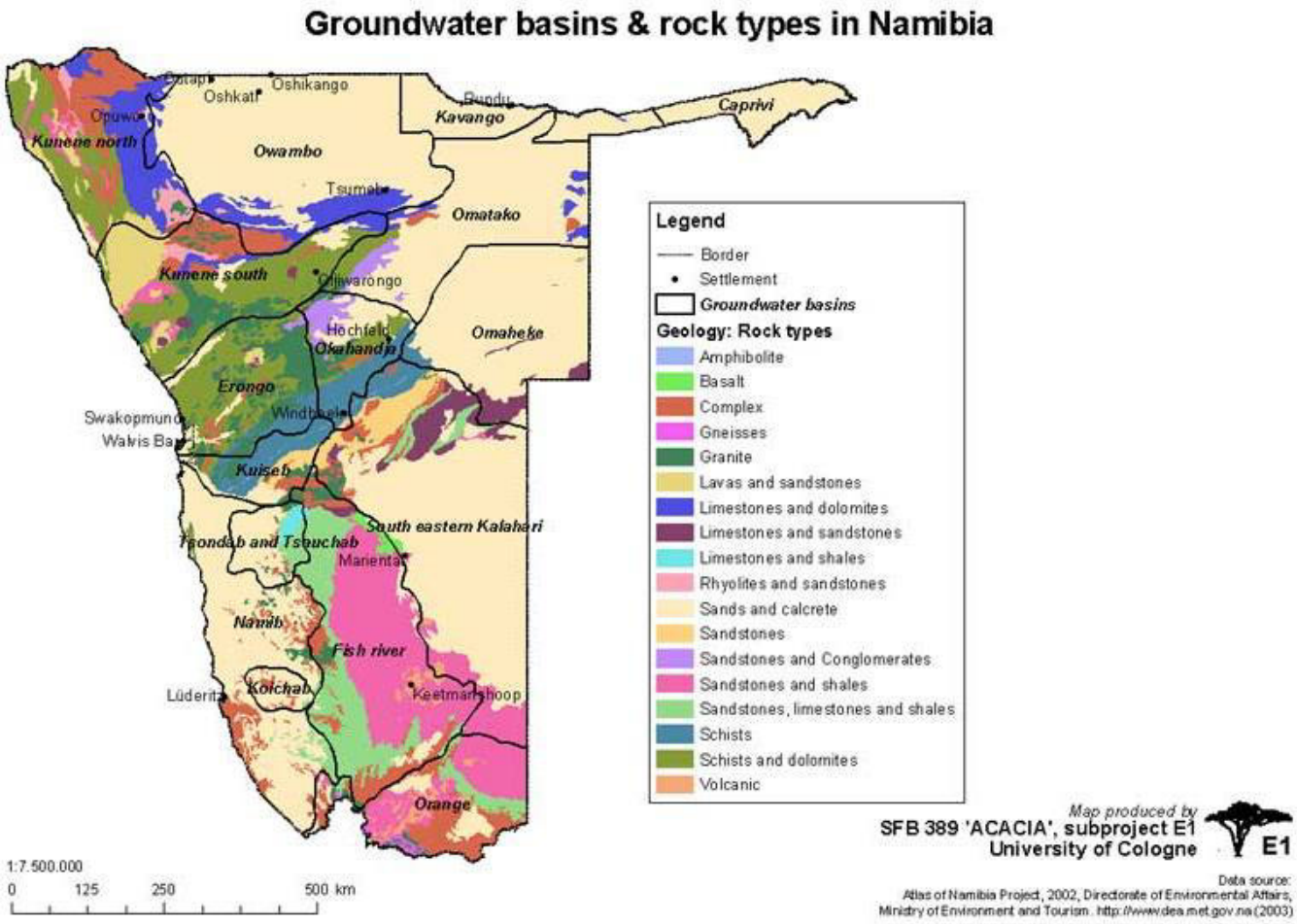

Figure 3-12: Groundwater Basins and Rock Types in Namibia

3.5.2 Structural Controls and Mineral Potential

The Damara Belt is internationally recognised for hosting a wide range of mineralisation styles. Within the context of EPL 10848, EPL 10849 and EPL 10850, the geological setting is favourable for:

- structurally controlled mineralisation associated with shear zones and faults;
- contact-metamorphic mineralisation linked to intrusive bodies;

- pegmatite-related rare-metal occurrences; and
- calcrete-hosted secondary uranium or base-metal anomalies in near-surface environments.

Structural features such as foliation, folding, faulting and fracture networks play a key role in controlling both mineralisation pathways and groundwater flow.

3.5.3 Implications for Exploration Planning

The geological characteristics of the licence areas directly inform exploration strategy and method selection, including:

- the siting of drill holes based on structural trends and fracture density;
- the design and interpretation of geophysical surveys;
- geochemical sampling approaches tailored to lithology and soil cover; and
- the identification of favourable zones for follow-up exploration.

From an environmental perspective, the predominance of hard, crystalline bedrock and shallow soils means that exploration impacts are likely to be localised and reversible, provided that drilling, access creation and rehabilitation are carried out in accordance with the EMP.

3.6 HYDROLOGY

The proposed exploration licence areas EPL 10848, EPL 10849 and EPL 10850 are located within Namibia’s central-western semi-arid hydrological zone, where surface water systems are dominated by ephemeral rivers and drainage networks. These systems form part of the broader Swakop and Kuiseb river catchments, with drainage generally directed westwards toward the Atlantic coastal basin.

Although surface flows are infrequent and short-lived, ephemeral river systems in this region play an important role in:

- episodic surface runoff during high-intensity rainfall events,
- sediment transport and landscape shaping,
- indirect recharge of fractured-rock groundwater systems, and
- supporting linear ecological corridors during wet periods.

3.6.1 Surface Water Characteristics

The Hydrography Map of Namibia (Figure 3-13) confirms that the hydrological environment across all three EPLs is characterised by:

- Absence of perennial rivers within or immediately adjacent to the licence areas;
- Numerous ephemeral drainage lines and shallow channels, which may convey runoff during intense rainfall events;
- Moderate drainage density, reflecting a combination of shallow soils, exposed bedrock and variable relief typical of the Karibib–Omaruru structural corridor; and
- Isolated pans and low-lying depressions, which may temporarily hold surface water following heavy storms.

These ephemeral drainage features are present across EPL 10848, EPL 10849 and EPL 10850, although their spatial density and orientation vary slightly depending on local topography and lithology. During most of the year, these channels remain dry but can experience rapid, short-duration flow during convective summer rainfall events, creating a risk of localised flash flooding.

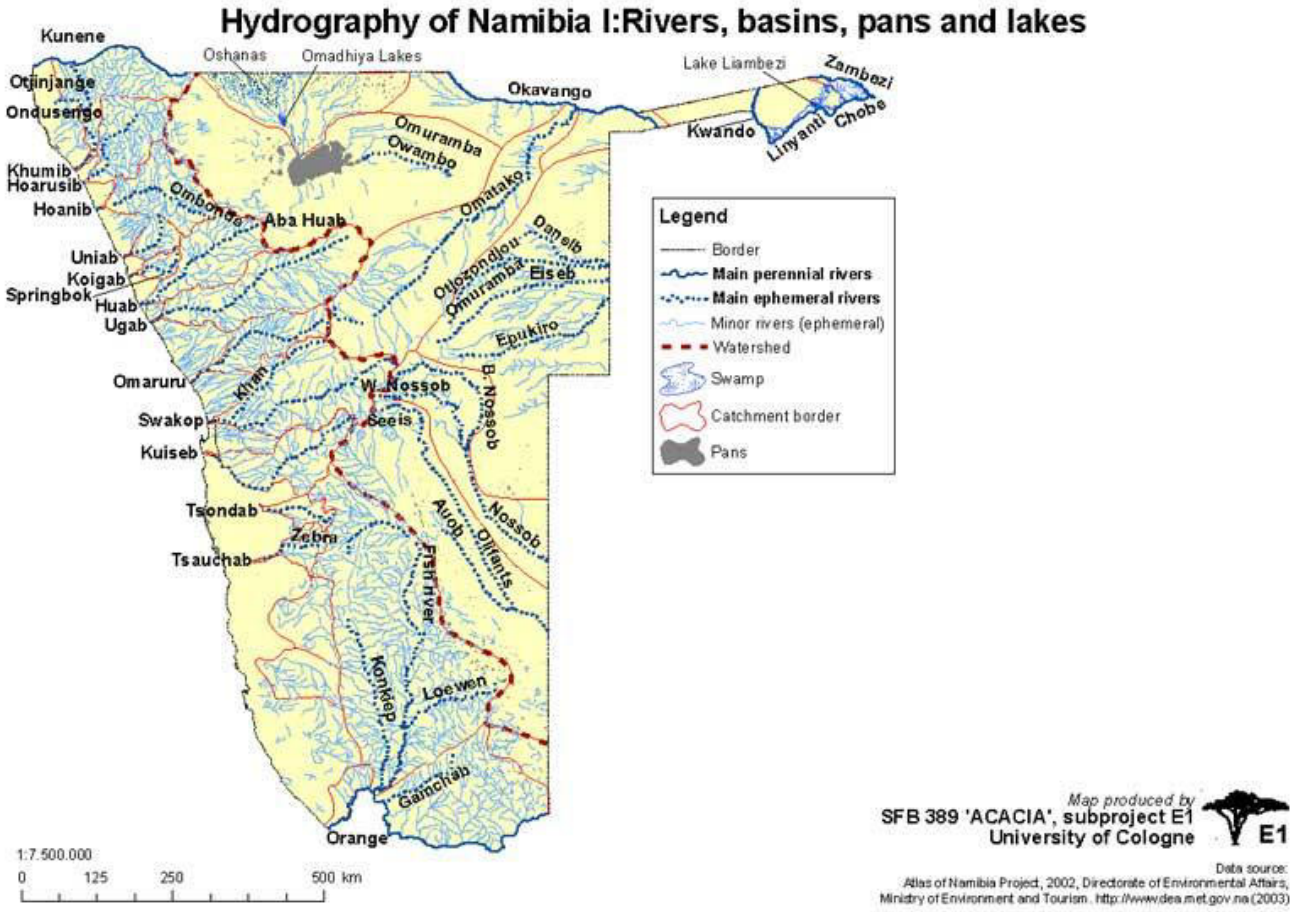

Figure 3-13: Hydrography of Namibia – Rivers, Basins, Pans and Lakes

3.6.2 Water Availability and Use Implications

Surface water availability across the three EPLs is extremely limited and unreliable, and is therefore not suitable for supporting exploration activities. As a result:

- All water required for exploration activities (e.g. drilling, dust suppression and camp use) must be sourced from:
    - existing farm boreholes (subject to landowner agreements and sustainable abstraction limits), or
    - licensed water-carting operations where appropriate;
- No abstraction from ephemeral riverbeds, drainage lines or pans will be permitted; and
- Water use must comply fully with the Water Resources Management Act (11 of 2013) and conditions set out in the Environmental Management Plan (EMP).

This approach is consistent across EPL 10848, EPL 10849 and EPL 10850, given their shared hydrological constraints and reliance on groundwater resources.

3.6.3 Surface Water Sensitivities and Drainage Protection

Despite the absence of perennial surface water, ephemeral drainage lines across the licence areas represent important environmental sensitivities, particularly due to their role in groundwater recharge and sediment transport. Potential risks associated with exploration activities include:

- accidental contamination from fuel or lubricants,
- mobilisation of fine sediments from disturbed soils,
- obstruction of natural drainage pathways, and
- erosion along access tracks crossing shallow channels.

To mitigate these risks, the EMP requires that:

- drill pads, camps and laydown areas are located outside drainage lines and flood-prone zones;
- vehicle crossings of ephemeral channels are minimised and carefully selected;
- no waste, drilling fluids or hydrocarbons are discharged into surface drainage features; and
- disturbed areas near drainage lines are rehabilitated promptly following completion of activities.

3.6.4 Linkages with Groundwater Systems

Hydrology in the project area is closely linked to fractured-rock groundwater systems underlying the three EPLs. Although surface flows are infrequent, infiltration along

drainage lines contributes to episodic recharge of these aquifers. As a result, contamination risks are elevated if exploration activities are poorly managed.

Across EPL 10848, EPL 10849 and EPL 10850, particular attention must be given to:

- proper containment and disposal of drilling fluids and cuttings;
- secure, bunded storage of fuels and hazardous materials;
- rapid clean-up of any spills; and
- hydrogeologically informed siting of exploration boreholes and sumps.

Strict implementation of these measures is essential to protect groundwater resources relied upon by surrounding farming operations and rural households.

3.6.5 Overall Hydrological Sensitivity

The overall hydrological sensitivity of EPL 10848, EPL 10849 and EPL 10850 is assessed as moderate, primarily due to:

- the absence of permanent surface water,
- the reliance of livelihoods on groundwater resources, and
- the potential for episodic but intense runoff events.

With appropriate planning, avoidance of drainage features, and full compliance with the EMP and applicable water legislation, hydrological impacts associated with the proposed exploration activities are expected to be low, localised and fully manageable.

3.7 FLORA, VEGETATION STRUCTURE AND BIODIVERSITY

The proposed exploration licence areas EPL 10848, EPL 10849 and EPL 10850, located within the central Erongo Region and extending into the Erongo–Otjozondjupa transition zone, fall predominantly within Namibia's Tree-and-Shrub Savanna Biome. This biome represents one of the country's most extensive semi-arid ecosystems and is ecologically and economically important due to its role in supporting commercial livestock farming, biodiversity persistence and ecosystem services.

Vegetation patterns across all three EPLs are shaped by a combination of semi-arid climatic conditions, highly variable rainfall, shallow and stony soils, and Damara Belt geology, resulting in a heterogeneous mosaic of shrubland, scattered savanna woodland, and grass–shrub communities (Atlas of Namibia Project, 2002; Mendelsohn et al., 2003). These vegetation systems provide essential grazing resources for cattle and small stock, which dominate land use across the licence areas.

3.7.1 Vegetation Structure

Vegetation structure across EPL 10848, EPL 10849 and EPL 10850 is dominated by Sparse Shrubland and Grass–Shrub Mosaic, with localised transitions into Dense Shrubland and Shrubland–Woodland Mosaic on slightly elevated or less disturbed sites. Drainage lines, pans and minor valleys support more structurally complex vegetation, often with increased tree density and grass cover.

As illustrated in Figure 3.14 (Vegetation Structure in Namibia), the licence areas fall within the central savanna belt characterised by:

- shrub-dominated rangelands,
- scattered drought-tolerant trees,
- seasonally variable grass layers, and
- increased woody density in areas affected by bush encroachment.

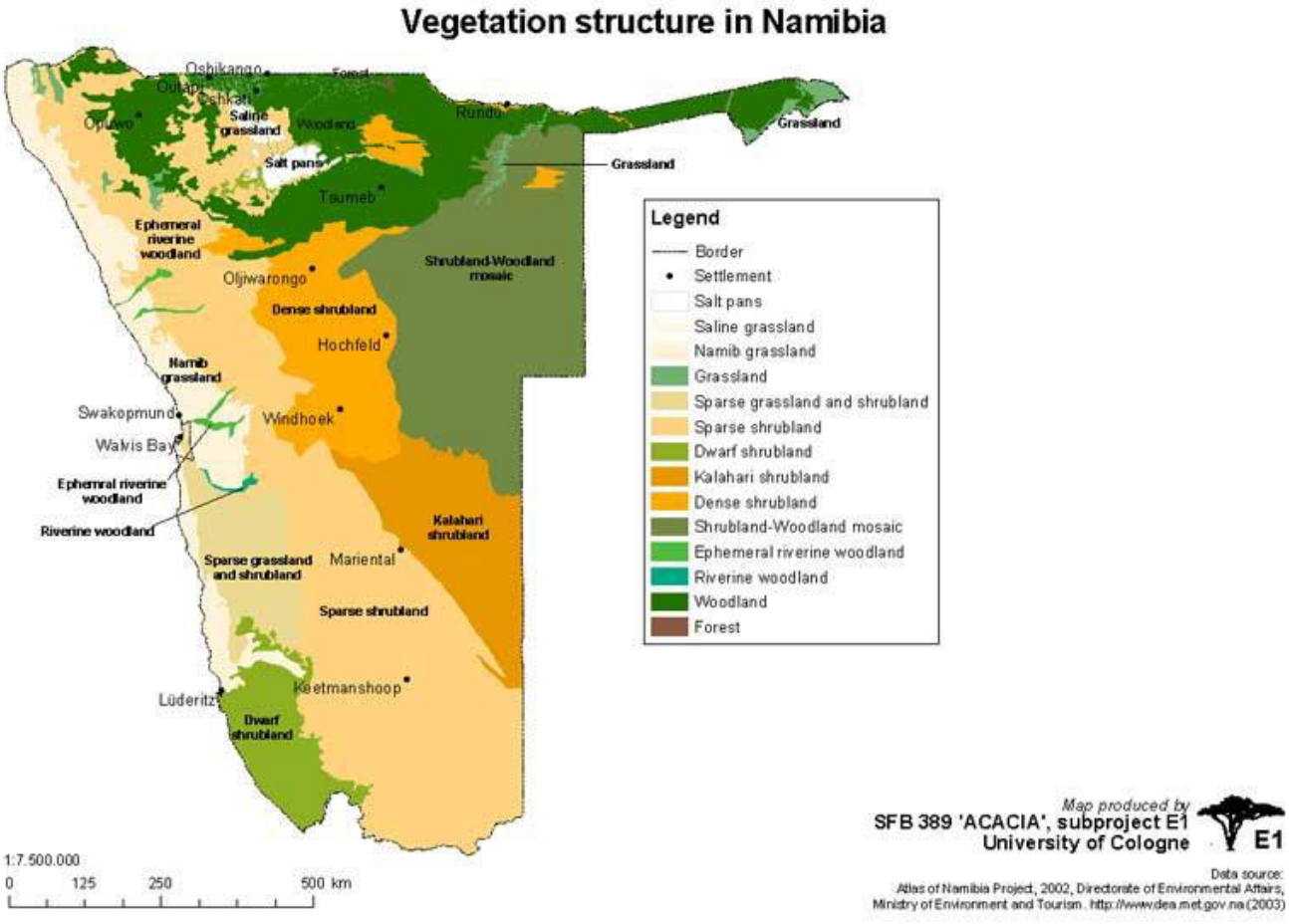

Figure 3-14: Vegetation Structure in Namibia

Dominant structural elements include Vachellia and Senegalia shrub species, interspersed with hardy perennial grasses adapted to low rainfall, high evaporation and shallow soils.

This structural composition is typical of the Erongo–Karibib–Omaruru landscape and is consistent across all three EPLs.

3.7.2 Floral Diversity

The wider Erongo–Otjozondjupa transition zone, within which EPL 10848–10850 are situated, supports moderate plant species richness, typically in the range of 150–300 species per grid unit. Species richness generally increases toward the north and east where rainfall is higher, and decreases toward the drier escarpment-linked plains to the southwest. As shown in Figure 3.15 (Plant Diversity in Namibia), the licence areas lie within a medium-diversity band, reflecting savanna vegetation growing on shallow, nutrient-moderate soils. While not a national biodiversity hotspot, the area supports a diverse assemblage of woody shrubs, perennial grasses and locally important plant species that contribute significantly to rangeland productivity and ecological resilience.

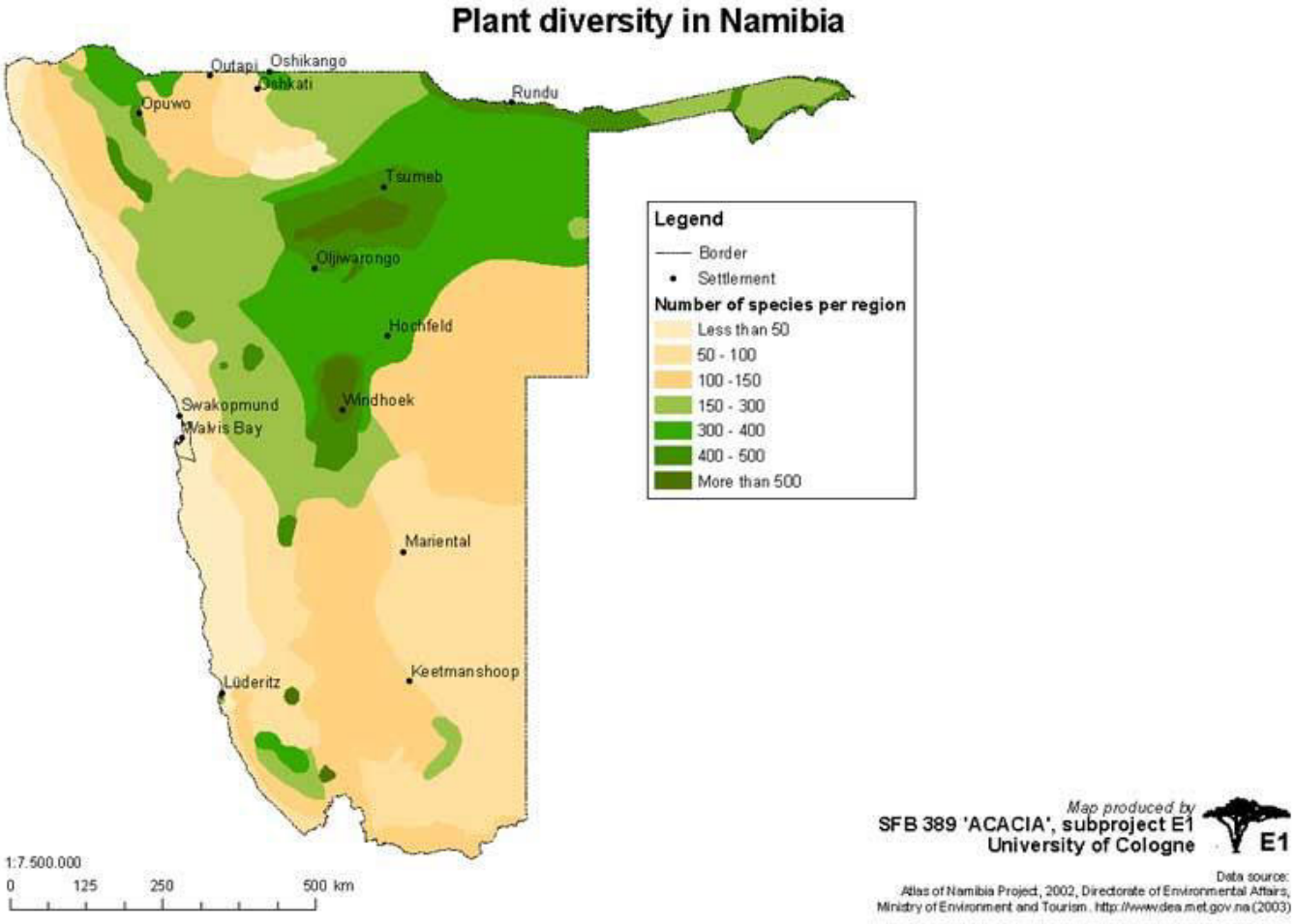

Figure 3-15: Plant Diversity in Namibia

3.7.3 Important Plant Species

Several plant species of ecological, grazing, cultural and economic importance are known or likely to occur across EPL 10848, EPL 10849 and EPL 10850. The interaction between rainfall patterns, soil depth and Damara geology gives rise to a characteristic central-Namibian savanna flora, comprising both widespread and locally sensitive species. Their broader national distribution patterns are illustrated in Figure 3.16 (Important Plant Species in Namibia).

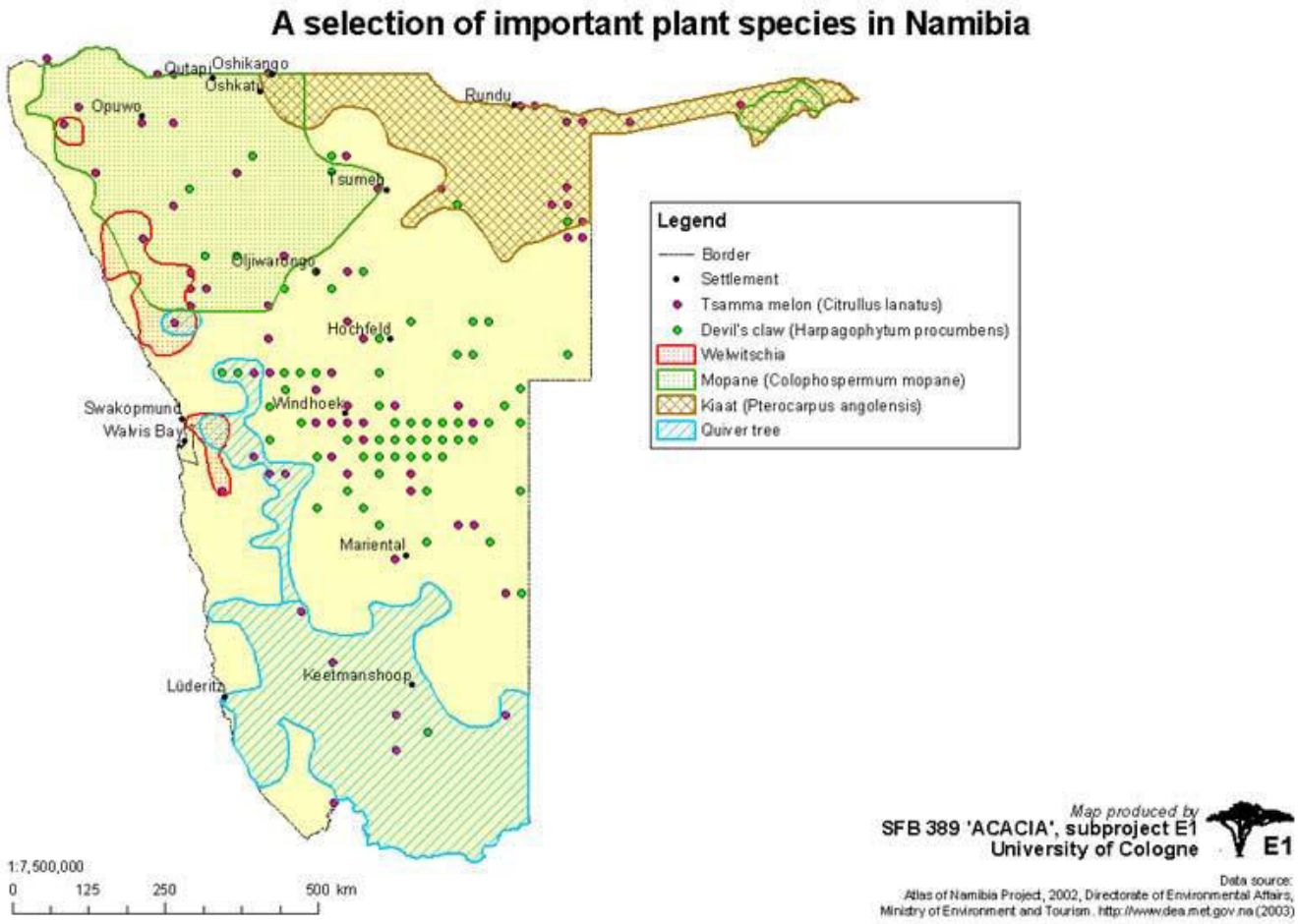

Figure 3-16: Important Plant Species in Namibia

3.7.3.1 Dominant and Co-Dominant Woody Species

The following species define the structural character of vegetation across the licence areas and strongly influence habitat condition, bush density and ecological sensitivity:

- *Vachellia mellifera* (Black Thorn) – dominant across much of the area and a key driver of bush encroachment
- *Senegalia erubescens* (Blue Thorn) – common on shallow, rocky and disturbed soils
- *Vachellia reficiens* (Red Thorn) – widespread in degraded or overgrazed rangelands
- *Terminalia prunioides* (Purple-pod Terminalia) – locally abundant in central Namibia

- *Combretum apiculatum* (Red Bushwillow) – associated with drainage lines and deeper sandy pockets
- *Boscia albitrunca* (Shepherd's Tree) – a keystone drought-resistant species providing shade and browse
- *Grewia flava / G. flavescens* (Raisin Bushes) – important browse shrubs for livestock and wildlife

These species form the baseline vegetation against which micro-siting of drill pads, access routes and temporary infrastructure must be planned.

3.7.3.2 Less Dominant but Ecologically Significant Species

The following species occur at lower densities but hold notable ecological, cultural or economic value:

- Devil's Claw (*Harpagophytum procumbens* and *H. zeyheri*) – a regulated medicinal plant of international trade importance
- Commiphora species (e.g. *C. africana, C. glaucescens*) – common in Damara terrain and important for browse and habitat complexity
- *Sterculia africana* (African Star-chestnut) – associated with rocky hills and inselbergs
- *Aloe hereroensis* – drought-adapted succulent of rocky slopes

3.7.3.3 High-Value and Protected Species (Patchy / Low Density)

Although generally sparse within the licence areas, the following species remain relevant for permitting and ecological safeguarding:

- Kiaat (*Pterocarpus angolensis*) – protected hardwood requiring Forestry Act authorisation
- Quiver Tree (*Aloe dichotoma*) – more common westwards, but isolated individuals may occur
- Mopane (*Colophospermum mopane*) – dominant further north, but scattered stands possible
- *Welwitschia mirabilis* – unlikely but regionally present; screening required during traverses

3.7.3.4 Interpretation for EPL 10848, EPL 10849 and EPL 10850

Across all three EPLs:

- Vegetation will be dominated by Vachellia, Senegalia, Boscia, Terminalia, Grewia and mixed savanna grasses.

- Locally important species include Commiphora spp., Sterculia africana and aloes.
- Species of conservation concern (notably Devil's Claw and Kiaat) require:
    - pre-clearing botanical surveys,
    - micro-siting of drill pads and access routes,
    - avoidance buffers, and
    - compliance with the Forest Act (2001) and ABS regulations.

3.7.3.5 Ecological Planning Implications

The presence of diverse savanna flora and protected species necessitates a cautious and environmentally responsible exploration approach. Key ecological-planning considerations include:

- Micro-siting of drilling pads to avoid protected or slow-growing species.
- Avoidance of drainage-line woodland, which supports higher species diversity and is more sensitive to disturbance.
- Minimal clearing of vegetation, especially in dense thornbush or rocky woodland transitions.
- Rehabilitation of disturbed areas using brush-pack and soil replacement techniques.
- Monitoring for Devil's Claw harvesting zones, with zero disturbance allowed.
- Baseline flora mapping prior to any intrusive activity.

3.7.3.6 Overall Conclusion

The plant community within the EPLs reflects a typical central Namibian semi-arid savanna with dominant thornbush species, scattered woodland trees, protected hardwoods and valuable medicinal plants. This composition underscores the need for site-sensitive planning, responsible vegetation management and strict adherence to ecological mitigation measures to ensure that exploration impacts remain localised, low-intensity and fully reversible.

3.7.4 Grass Cover and Ground Layer

Grass cover across EPL 10848–10850 is generally low to moderate (11–25%), typical of central-western semi-arid rangelands. Grass biomass is highly seasonal and responds strongly to inter-annual rainfall variability. Common species include Stipagrostis uniplumis, Anthephora pubescens and Eragrostis spp.

As shown in Figure 3.17 (Grass Cover in Namibia), grass cover declines westwards toward the Namib fringe, influencing grazing capacity, erosion risk and fire behaviour. These

patterns are directly relevant to exploration planning, particularly with respect to vehicle movement, soil compaction and rehabilitation success.

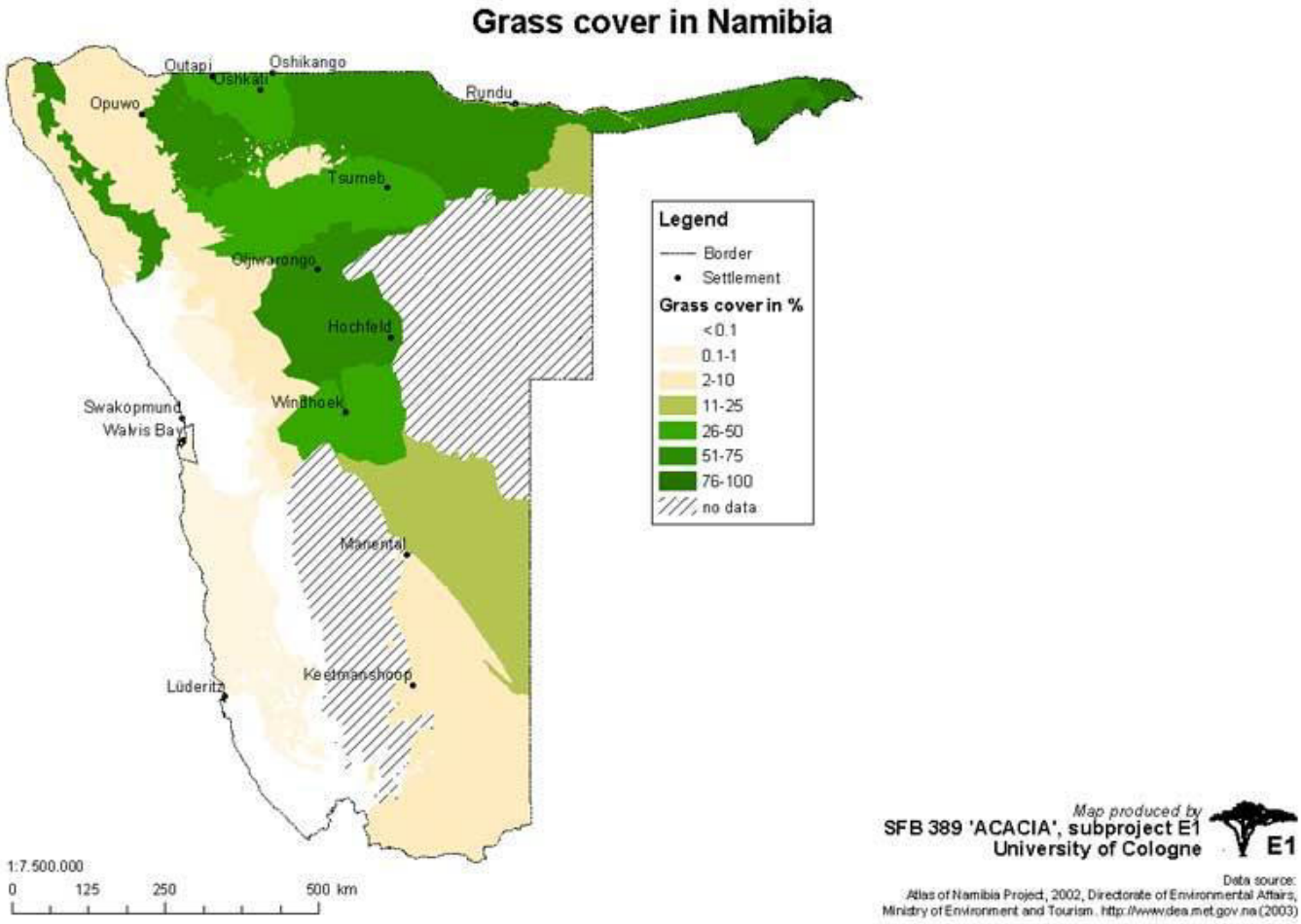

Figure 3-17: Grass Cover in Namibia

3.7.5 Biome Context and Conservation Importance

All three licence areas fall entirely within the Tree-and-Shrub Savanna Biome (Figure 3.18), Namibia's largest biome and one of significant conservation and production value. This biome:

- supports drought-adapted and near-endemic species,
- facilitates wildlife movement between the Erongo, Karibib and Omaruru landscapes, and
- is increasingly affected by bush encroachment, particularly by *Vachellia mellifera*, *V. reficiens* and *Senegalia erubescens* (de Klerk, 2004).

Bush encroachment is a major ecological and economic concern in both Erongo and Otjozondjupa Regions, reducing grazing capacity and rangeland productivity — a key issue for landowners across the EPLs.

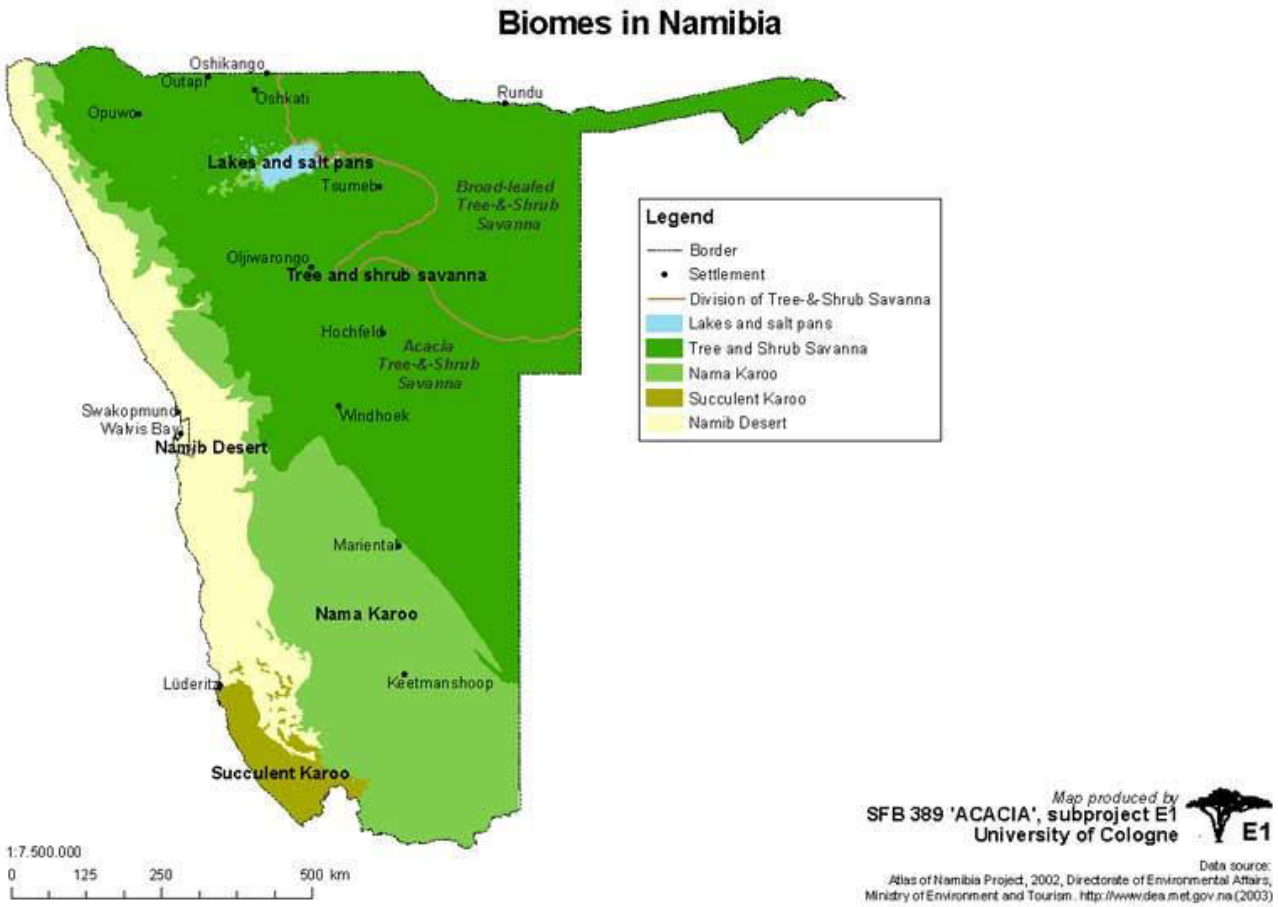

Figure 3-18: Biomes of Namibia

Given its position within this conservation-important biome, the project must ensure that vegetation clearing is kept to the minimum area required, avoiding disturbance to key woodland and savanna structures that support wildlife movement and ecological functioning. In addition, all exploration activities should be planned to prevent exacerbating bush-encroachment pressures, thereby helping safeguard rangeland productivity for surrounding farming operations.

3.7.6 Relevance to the EIA

Although exploration activities are temporary, localised and reversible, vegetation may be affected through:

- drill-pad clearing,
- temporary access tracks,
- equipment staging areas,
- vehicle movement, and
- dust deposition.

Given the ecological value of the Tree-and-Shrub Savanna and the economic importance of rangeland vegetation, site-sensitive planning, micro-siting and strict adherence to the EMP are essential to ensure that impacts remain low-intensity and do not result in long-term ecological degradation across EPL 10848, EPL 10849 and EPL 10850.

3.8 FAUNA

The licence areas comprising EPL 10848, EPL 10849 and EPL 10850 are located within Namibia's central Tree-and-Shrub Savanna and Central Highlands ecological systems, spanning parts of the Erongo–Otjozondjupa transitional zone. National biodiversity gradients indicate that faunal species richness in Namibia generally increases from the arid southwest toward the more mesic northeastern regions. The Karibib–Omaruru–Otjiwarongo corridor, within which the three EPLs are situated, therefore represents a moderate-diversity transitional band, rather than a national biodiversity hotspot (Mendelsohn et al., 2002; Atlas of Namibia Project, 2002).

Although the project area does not overlap protected areas or formally designated biodiversity priority zones, it supports a representative assemblage of mammals, birds, reptiles, amphibians and invertebrates typical of central Namibian savannas. Faunal presence is influenced by semi-arid climatic conditions, low and variable rainfall, shallow soils, ephemeral drainage systems, and the dominance of commercial livestock farming. Wildlife movements between the Erongo Mountains, Omaruru River system, Waterberg Plateau and surrounding farmlands further contribute to species occurrence across the wider landscape.

3.8.1 Mammals

Based on national species-richness mapping (Figure 3-19), the central highlands and savanna belt encompassing EPL 10848, EPL 10849 and EPL 10850 supports approximately 61–90 mammal species. Mammal communities are characteristic of commercial farmland landscapes and include:

- *Medium and large herbivores* - kudu (*Tragelaphus strepsiceros*), oryx (*Oryx gazella*), springbok (*Antidorcas marsupialis*), warthog (*Phacochoerus africanus*), red hartebeest (*Alcelaphus buselaphus*), and locally giraffe (*Giraffa camelopardalis*), where fencing allows movement.
- *Carnivores* - black-backed jackal (*Canis mesomelas*), caracal (*Caracal caracal*), brown hyena (*Parahyaena brunnea*), leopard (*Panthera pardus*, transient), and small carnivores such as mongooses and genets.

- *Small mammals* - rodents, insectivores and several bat species associated with rocky outcrops, drainage lines and farm infrastructure.

No mammal species with highly restricted national distributions are expected. Sensitivity is primarily associated with movement corridors across farmland, particularly where internal farm roads, fences and waterpoints influence wildlife behaviour.

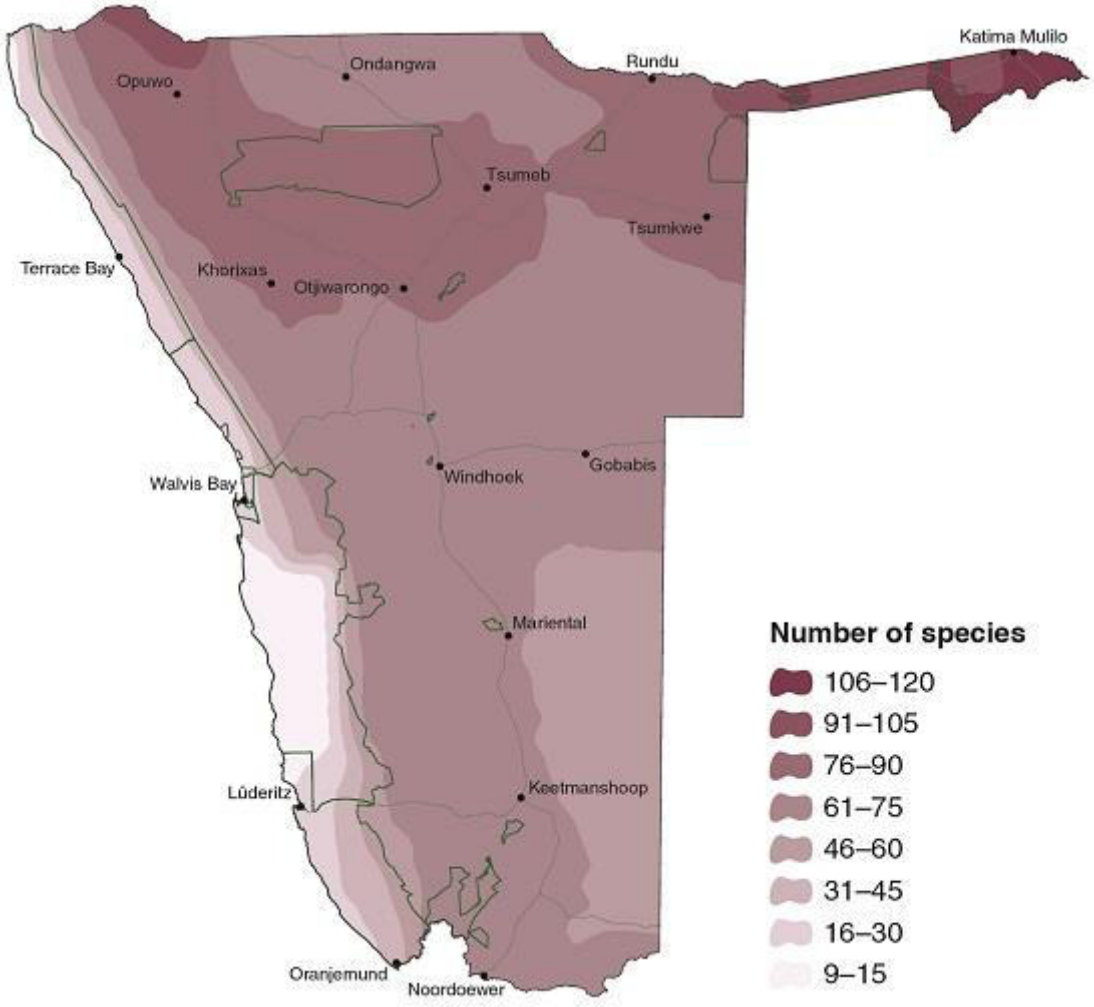

Figure 3-19: Mammal species richness map

3.8.2 Birds

Bird diversity in central Namibia is comparatively high due to habitat heterogeneity, including shrubland, scattered woodland, grassland patches, rocky hills and ephemeral drainage lines. The EPL areas fall within a zone supporting approximately 141–170 bird species nationally (Figure 3-20).

Species likely to occur across EPL 10848–10850 include:

- *Raptors* - Lappet-faced Vulture (*Torgos tracheliotos*), Bateleur (*Terathopius ecaudatus*), Martial Eagle (*Polemaetus bellicosus*), Pale Chanting Goshawk (*Melierax canorus*).

- *Savanna and woodland birds* - hornbills, rollers, starlings, francolins, shrikes and cuckoos.
- *Seasonal and nomadic species* - larks, pipits and seed-eaters responding to episodic rainfall events.

While none of the EPLs overlap designated Important Bird Areas (IBAs), wide-ranging raptors and scavengers regularly traverse farmland landscapes. Exploration activities therefore require attention to waste management, avoidance of unnecessary tall structures, and dust control.

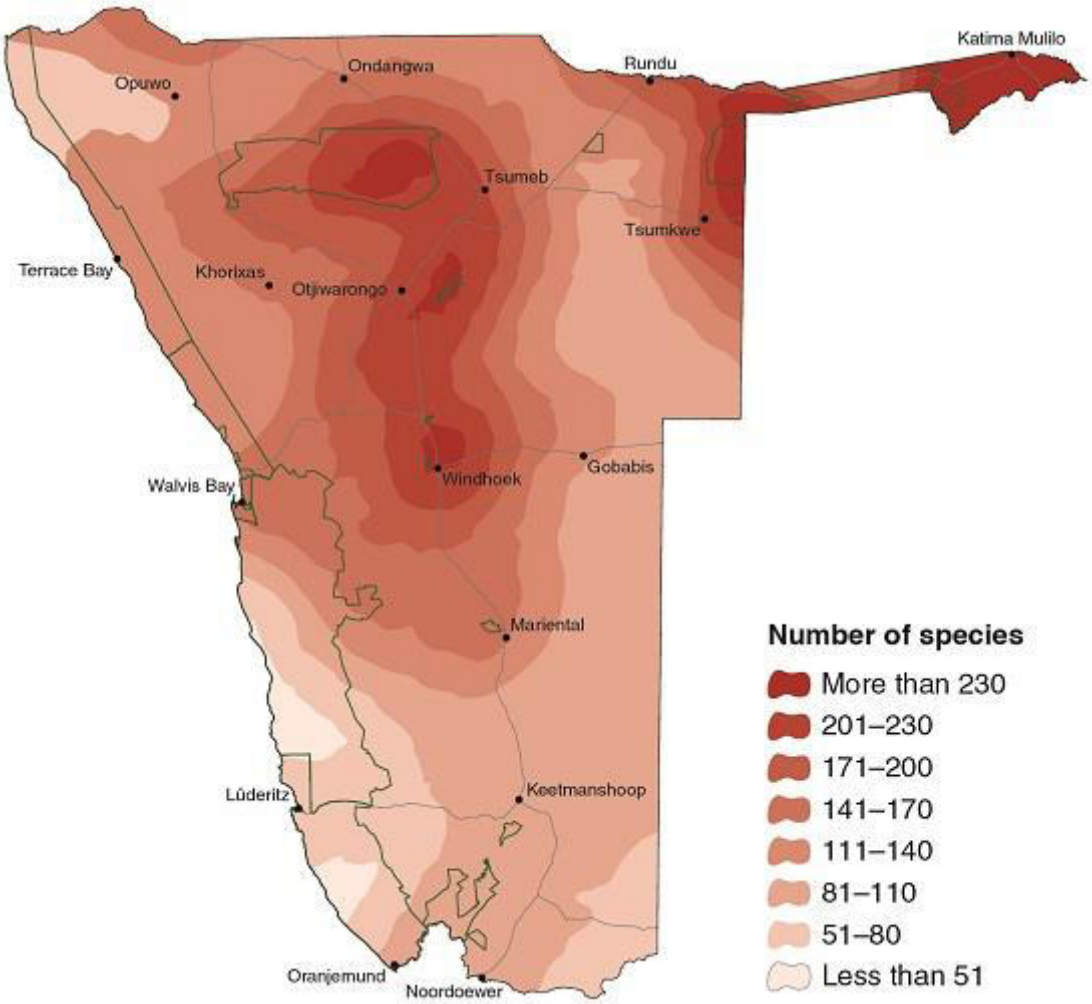

Figure 3-20: Bird species richness map

3.8.3 Reptiles

Reptile diversity across the central highlands and savanna transition zone is moderate to high, with 41–70 reptile species expected (Figure 3-21). Habitat diversity provided by rocky slopes, inselbergs, calcrete plains and shrubland enhances reptile occurrence across all three EPLs.

Likely reptile groups include:

- *Lizards* **-** agamas, plated lizards, geckos and skinks.
- *Snakes* - puff adder (*Bitis arietans*), horned adder (*Bitis caudalis*), mole snake (*Pseudaspis cana*), and various non-venomous colubrids.
- *Chelonians* - leopard tortoise (*Stigmochelys pardalis*), which is protected but widespread.

No endemic or range-restricted reptile species are anticipated within the EPLs; however, reptiles are vulnerable to vehicle traffic and surface disturbance, particularly along farm tracks

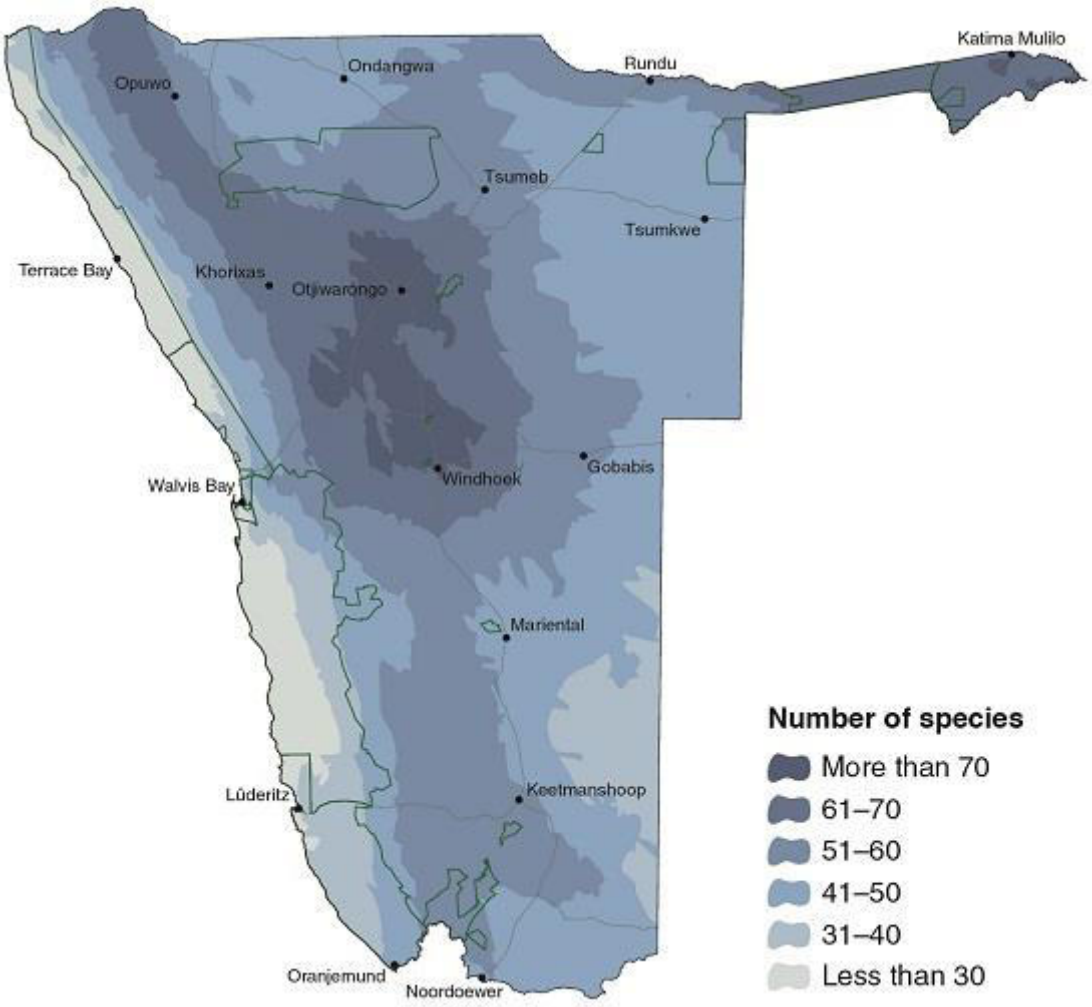

Figure 3-21: Reptile species richness map

3.8.4 Amphibians

Amphibian diversity closely reflects rainfall availability and the presence of temporary surface water. The EPL areas fall within a zone supporting approximately 9–15 amphibian species nationally (Figure 3-22). Species are largely restricted to short periods following heavy rainfall events.

Likely species include:

- Sand frogs (*Tomopterna* spp.),
- Rain frogs (*Breviceps adspersus*),
- Toads (*Sclerophrys* spp.).

The absence of perennial waterbodies within EPL 10848–10850 means amphibian populations are seasonal, low-density and spatially restricted, resulting in low overall sensitivity.

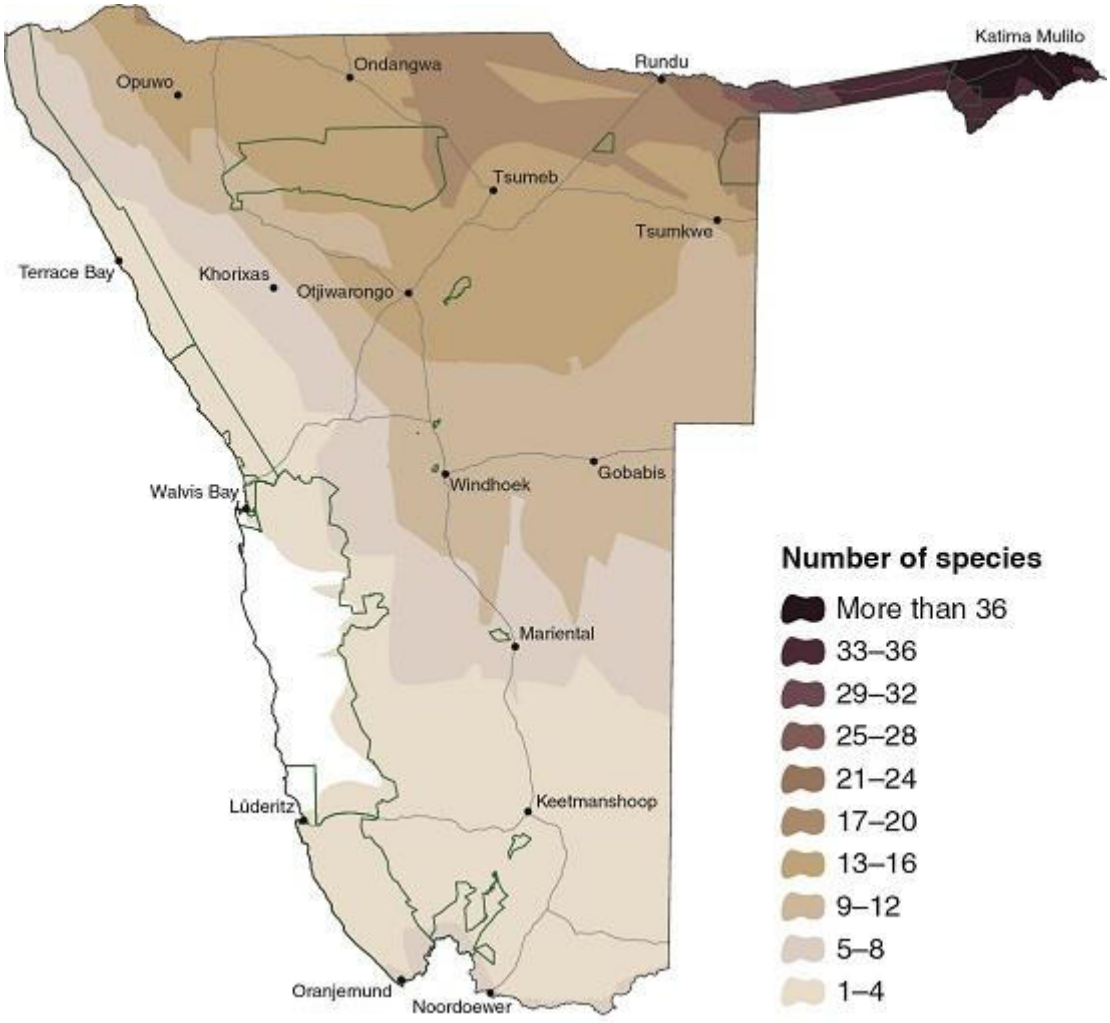

Figure 3-22: Amphibian species richness map

3.8.5 Freshwater Fish

National catchment-level data indicate that ephemeral river systems in central Namibia typically support 1–4 freshwater fish species, introduced only during episodic flood events (Figure 3-23). Given that no perennial rivers or standing waterbodies occur within EPL 10848, EPL 10849 or EPL 10850, no resident fish populations are expected within the licence areas.

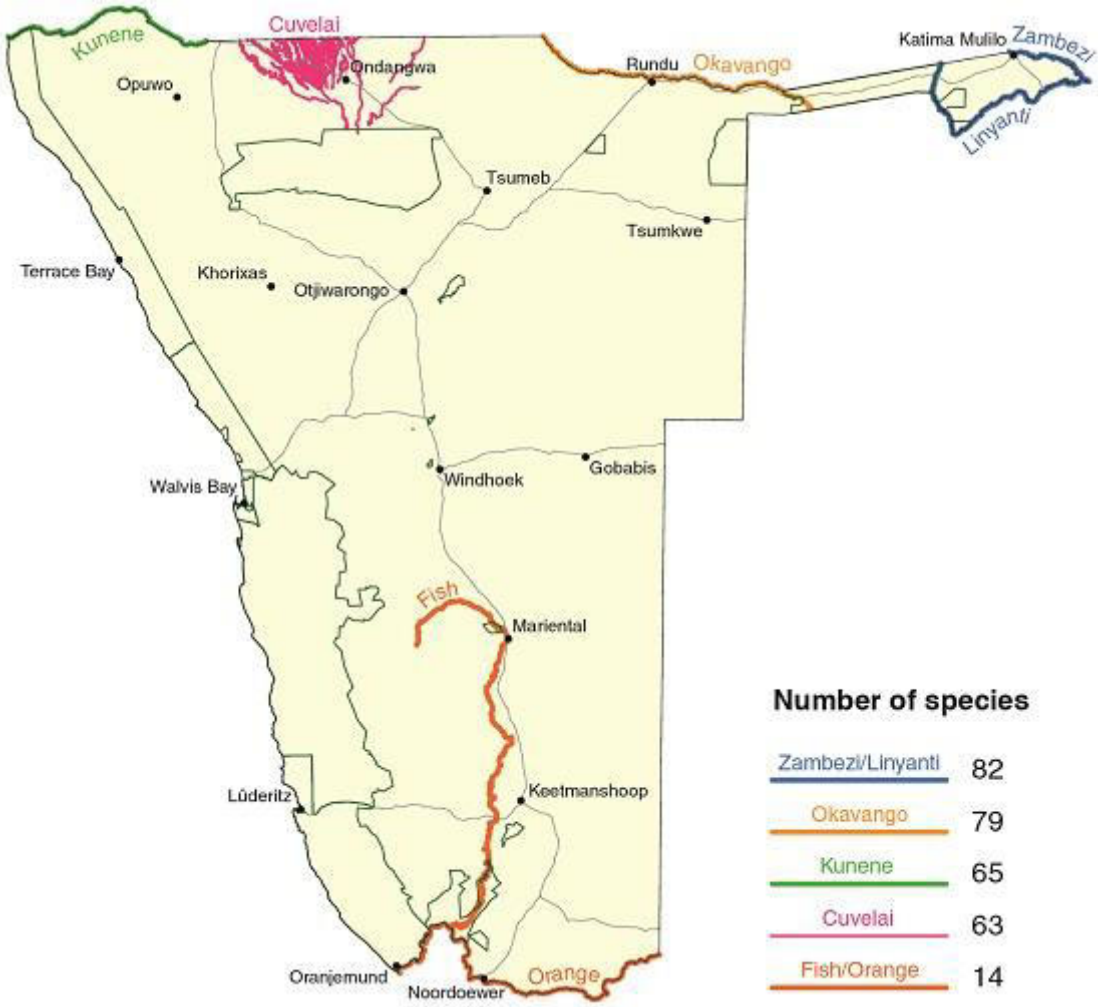

Figure 3-23: Fish species occurrence by catchment

3.8.6 Invertebrates

Invertebrates represent the most diverse faunal group across the EPLs, with moderate-to-high richness typical of central savanna landscapes (Figure 3-24). Key groups include:

- Tenebrionid (darkling) beetles,
- Ants and termites,
- Scorpions and solifuges,
- Pollinating insects.

These taxa play a critical role in soil turnover, nutrient cycling and ecosystem functioning. Although few species are of conservation concern, invertebrates are sensitive to surface disturbance, compaction and dust deposition.

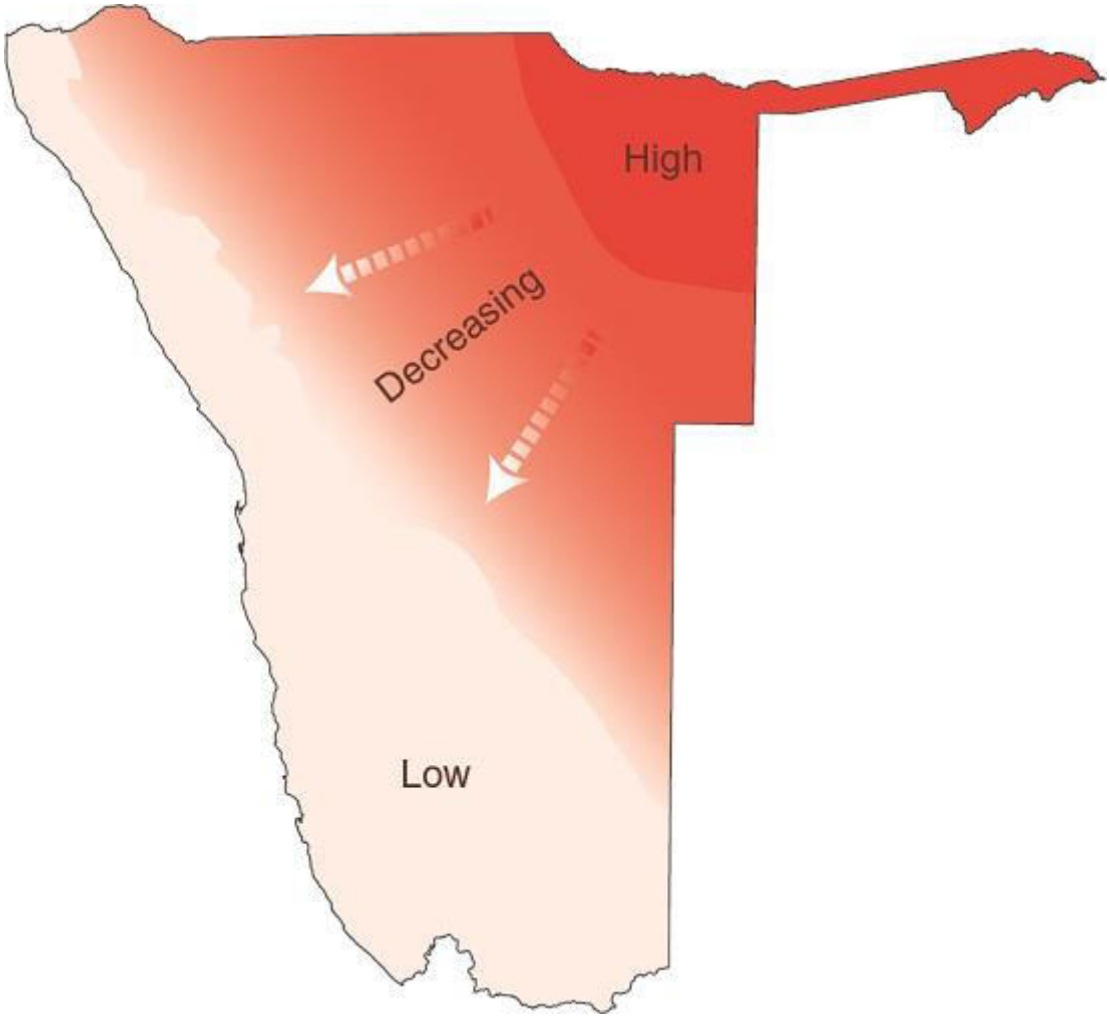

Figure 3-24: Invertebrate richness gradient map

3.8.7 Faunal Sensitivity Summary

Overall, faunal communities within EPL 10848, EPL 10849 and EPL 10850 are typical of central Namibian savannas, with moderate species richness and no known highly range-restricted species. Faunal sensitivity is primarily linked to:

- Habitat disturbance (vegetation clearing and soil disturbance),
- Noise and vibration from drilling activities,
- Vehicle movement on farm roads,
- Seasonal wildlife movement across commercial farmland.

From an ecological-planning perspective:

- Micro-siting of drill pads and access tracks is essential to avoid drainage lines, rocky outcrops and wildlife movement paths.
- Night-time driving should be minimised to reduce wildlife collisions.
- Vehicle speed controls are required due to shared livestock–wildlife road use.

- Dust suppression reduces indirect impacts on birds, small mammals and invertebrates.

With effective implementation of the Environmental Management Plan (EMP), all faunal impacts associated with exploration activities across the three EPLs are expected to remain low in significance, localised, temporary and fully reversible.

3.9 HERITAGE AND ARCHAEOLOGICAL RESOURCES

Separate specialist assessments of heritage and archaeological resources have been undertaken for EPL 10848, EPL 10849 and EPL 10850 in accordance with the National Heritage Act (No. 27 of 2004) and accepted best-practice heritage management standards. These assessments identify potential heritage features, evaluate their significance, and recommend appropriate management and mitigation measures relevant to early-stage mineral exploration activities.

The assessments confirm that the broader Karibib–Omaruru–central Erongo landscape contains archaeological and heritage features typical of central Namibia, including isolated stone artefacts, historical farmstead remains, and landscape features of cultural value. No formally declared National Heritage Sites or proclaimed archaeological monuments were identified within the current exploration footprints.

The full Heritage and Archaeological Resources Reports for the three EPLs are included in the Appendices of this EIA and must be read in conjunction with the Environmental Management Plan (EMP). Compliance with the heritage mitigation measures and the statutory chance-find procedure is mandatory throughout the exploration phase.

3.10 ENVIRONMENTAL SENSITIVITY ASSESSMENT

The environmental sensitivity assessment identifies areas within and surrounding EPL 10848, EPL 10849 and EPL 10850 that may require avoidance, restricted access, or enhanced mitigation during exploration. Sensitivities were evaluated using a combination of:

- Regional biodiversity datasets,
- Vegetation structure and biome mapping,
- Hydrological and soil layers,
- Topographic and geological information, and
- Known ecological and land-use patterns for the Erongo and adjacent Otjozondjupa regions.

This integrated approach allows for spatial planning that minimises disturbance while maintaining operational feasibility.

3.10.1.1 Sensitive Habitats

Sensitive habitats within the wider Karibib–Omaruru–central Erongo landscape, and relevant to all three EPLs, include:

- Ephemeral drainage lines and associated riparian vegetation,
- Rocky ridges, inselbergs and slope complexes, and
- Structurally intact woodland or dense shrubland patches.

Although no perennial rivers occur within EPL 10848, EPL 10849 or EPL 10850, several ephemeral drainage features traverse the licence areas and adjacent farms. These features are ecologically sensitive due to their importance for:

- Seasonal groundwater recharge,
- Concentrated vegetation growth, and
- Wildlife movement and foraging.

No new access tracks, drill pads or laydown areas should be placed within, or directly across, drainage channels.

Rocky outcrops and ridges are also considered sensitive because they:

- Support specialist flora and fauna,
- Provide drought refugia, and
- Contain shallow soils with high erosion risk.

Such features must be avoided during route selection and exploration planning across all three EPLs.

3.10.1.2 Protected Areas and Conservation Priorities

None of the licence areas (EPL 10848, EPL 10849 or EPL 10850) overlap with:

- Proclaimed national parks,
- Registered communal or freehold conservancies, or
- Statutory ecological buffer zones.

However, the broader Erongo–Karibib–Omaruru landscape forms part of a central savanna wildlife movement system, linking private farmland, the Erongo Mountains, and regional corridors toward Etosha National Park and the Waterberg Plateau.

While no formal conservation constraints apply, exploration activities should avoid unnecessary disturbance that could interfere with seasonal wildlife movements, particularly of large herbivores and wide-ranging carnivores.

No Key Biodiversity Areas (KBAs) or Important Bird Areas (IBAs) fall within any of the three EPLs. Overall conservation-priority overlap is therefore considered low.

3.10.1.3 Vulnerable Flora and Fauna

Protected or red-listed species may occur intermittently across the three licence areas, particularly:

- Raptors (e.g. Lappet-faced Vulture, Martial Eagle),
- Wide-ranging carnivores (e.g. leopard),
- Specialist plant species associated with rocky substrates (e.g. *Aloe* spp., *Commiphora* spp., Devil's Claw).

Due to the small spatial footprint, temporary nature, and low intensity of exploration activities, significant impacts on such species are unlikely.

Areas of dense woodland or structurally intact savanna are considered moderately sensitive, and vehicle movement must be restricted to existing farm tracks wherever possible.

Although no breeding colonies, dens or critical habitats have been documented within EPL 10848–10850, a chance-find protocol applies to any nests, burrows, dens or sensitive plant specimens encountered during operations.

3.10.1.4 Hydrological and Soil Sensitivities

Soils across the three EPLs range from shallow, stony substrates on elevated terrain to deeper sandy-loam soils in plains and valley systems. These conditions influence erosion risk, access planning and rehabilitation requirements.

Key sensitivities include:

- *Erosion susceptibility* - Sandy or disturbed soils are prone to wind and water erosion; off-track driving must be avoided.
- *Flood-prone depressions* - Ephemeral drainage zones may experience flash flooding and must not be used for drilling or access.
- *Groundwater protection* - All exploration drilling must comply with strict casing, sealing and spill-prevention standards to protect fractured-rock aquifers typical of the Erongo–Otjozondjupa highlands.

Overall hydrological and soil sensitivity across EPL 10848, EPL 10849 and EPL 10850 is assessed as low to moderate, with localised high-sensitivity features requiring avoidance.

3.10.1.5 Cumulative Environmental Constraints

When ecological, hydrological, heritage and land-use sensitivities are considered together, the following moderate to high sensitivity zones are identified across the three EPLs:

- Ephemeral drainage lines and riparian vegetation,
- Rocky outcrops, ridges and slope complexes,

- Dense woodland or areas of elevated biodiversity value,
- Areas near historic or active farmsteads (overlap with heritage sensitivity).

Areas of low sensitivity include:

- Open, homogenous savanna,
- Previously disturbed farming areas, and
- Existing access tracks and infrastructure corridors.

These low-sensitivity areas are generally suitable for low-impact exploration activities.

3.10.1.6 Implications for the Project

To ensure environmentally responsible exploration across EPL 10848, EPL 10849 and EPL 10850, the following spatial constraints must guide project implementation:

- Prioritise low-sensitivity open savanna for drill pads and temporary infrastructure.
- Avoid creation of new tracks in drainage lines, dense woodland or across rocky ridges.
- Use moderate-sensitivity areas only with strict mitigation, controlled access and post-exploration rehabilitation.
- Avoid high-sensitivity areas entirely, applying buffers where appropriate.
- Implement and maintain chance-find procedures for both ecological and heritage resources.

With adherence to these constraints and full implementation of the EMP, exploration activities across all three EPLs are unlikely to result in significant, long-term or irreversible environmental impacts.

4 CHAPER FOUR: PUBLIC CONSULTATION

4.1 OVERVIEW

Public consultation is a statutory requirement under the Environmental Management Act (EMA) No. 7 of 2007 and the Environmental Impact Assessment Regulations (GN 30 of 2012). Regulation 21 of the EIA Regulations sets out specific requirements to ensure that Interested and Affected Parties (I&APs) are provided with a fair and reasonable opportunity to receive information, register their interests, raise concerns, and contribute to the Environmental Assessment process.

For the proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850, the public consultation process was undertaken in compliance with the following regulatory and procedural frameworks:

- The Environmental Management Act (EMA), No. 7 of 2007;
- The Environmental Impact Assessment Regulations (GN 30 of 2012);
- Regulation 7(1) relating to public notification requirements;
- The approved project Terms of Reference; and
- International good-practice principles for stakeholder engagement, including transparency, inclusivity, accessibility, and accountability.

The overarching objectives of the consultation process were to:

- Ensure transparency in the planning and assessment of the proposed exploration activities across all three EPLs;
- Provide clear, accurate, and accessible information to potentially affected stakeholders and institutions;
- Obtain local and contextual knowledge of the receiving environment, particularly from landowners and local authorities;
- Identify potential issues and concerns at an early stage of the assessment process; and
- Facilitate meaningful, inclusive, and accountable participation by Interested and Affected Parties.

To achieve these objectives, a range of communication and notification tools were employed, including newspaper advertisements, Background Information Documents (BIDs), site notices, formal correspondence with relevant authorities, and community-level announcements. All supporting evidence of the consultation process—including copies of

notices, correspondence, the BID, proof of publication, attendance registers, and photographic records—is provided in the Appendices to this EIA Report.

4.2 METHODS USED FOR PUBLIC CONSULTATION

A combination of statutory and supplementary engagement methods was used to notify and engage Interested and Affected Parties in relation to the proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850. These methods were selected to ensure broad coverage across the project area, which spans parts of the Erongo and Otjozondjupa Regions, and to provide multiple opportunities for stakeholders to access information and participate in the process.

4.2.1 Background Information Document (BID)

A Background Information Document (BID) was prepared and distributed as a key consultation tool. The BID provided a concise, non-technical overview of the proposed project and the Environmental Assessment process, including:

- A description of the proposed exploration activities;
- The location and extent of EPL 10848, EPL 10849 and EPL 10850;
- An outline of the EIA process and applicable legislative requirements;
- A summary of potential environmental and socio-economic considerations associated with early-stage exploration; and
- Contact details and procedures for stakeholders to register as Interested and Affected Parties.

The BID was distributed through multiple channels to maximise accessibility, including electronic circulation via email and WhatsApp, as well as the placement of printed copies at accessible community and administrative points within the project area. This approach ensured that stakeholders had adequate opportunity to familiarise themselves with the project and to engage with the Environmental Assessment process should they wish to do so.

4.2.2 Newspaper Notices

Two statutory notices were published in:

Table 4-1: Newspaper Notices

Method	Area of Distribution	Language	Dates Placed
The Confidante	Nationwide	English	16 to 27 November 2025
Windhoek Observer	Nationwide	English	16 to 27 November 2025

The notices announced:

- The commencement of the EIA
- The project location and description
- The public meeting details
- Invitation to register as I&APs

4.2.3 Site Notices

Public notices were displayed at strategic, high-visibility locations in Omaruru and Okahandja and surrounding areas relevant to the EPLs. The notices provided a summary of the proposed project, an overview of the Environmental Impact Assessment (EIA) process, and details of the public meeting.

Image 4-1: Site Notice at Omaruru Community Hall

Image 4-2: Site Notice at Omaruru

Image 4-3: Site Notices at various locations

Image 4-4: Site Notice - Okahandja

Image 4-5: Site Notice – Okahandja Municipality

4.3 KEY STAKEHOLDER PUBLIC MEETING

A public meeting was organised as required under the EMA to allow stakeholders to receive information and provide comments.

Meeting details:

- Venue: Omaruru Community Hall
- Location: Omaruru district, Erongo Region
- Date: 28 November 2025
- Time: 14h00

The agenda included:

- Overview of EPL 10848, EPL 10849 and EPL 10850
- Planned exploration activities
- Environmental and socio-economic considerations
- Applicable laws and rights of I&APs
- Open floor for questions and comments

4.3.1 Meeting Outcome

Despite comprehensive public notification through newspaper advertisements, site notices, Background Information Documents, and direct correspondence with relevant institutions, no community members attended the scheduled public meeting.

Image 4-6: Meeting Venue

In recognition of this outcome, additional efforts were made to engage stakeholders through informal discussions and individual engagements with landowners and community members who were willing to participate. These engagements allowed participants to:

- Seek clarification on the exploration process and duration;
- Raise concerns related to land access, environmental protection, and safety; and
- Provide local context relevant to farming activities and land use.

Records of participant details and their signatures are included in the attendance registers provided in the Appendices.

4.4 IDENTIFICATION OF INTERESTED AND AFFECTED PARTIES (I&APS)

The EIA team undertook a systematic process to identify and notify Interested and Affected Parties potentially affected by exploration activities on EPL 10848, EPL 10849 and EPL 10850. The following stakeholder groups were identified and invited to participate:

4.4.1.1 Institutional and Government Stakeholders

- Otjozondjupa Regional Council
- Erongo Regional Council
- Local Authorities, including Otjiwarongo, Okahandja and Omaruru Municipalities
- Relevant environmental and natural resource management offices

4.4.1.2 Traditional and Local Leadership

- Recognised traditional and local leadership structures within the broader project area

4.4.1.3 Local Communities and Land Users

- Residents of nearby settlements, including Kalkfeld and surrounding areas
- Commercial farmers and farm workers within and adjacent to the EPL boundaries
- Farm owners and managers along key access routes, including D2414, D2493, and internal farm roads

4.4.1.4 General Public

- Any members of the public with an interest in the proposed project

An open invitation to register as an Interested and Affected Party was provided through newspaper notices and site notices. Registration remained open for a minimum period of 14 days, in line with regulatory requirements. All registered stakeholders were captured in the project stakeholder database and included in subsequent consultation and information-sharing processes.

4.5 ISSUES RAISED DURING PUBLIC CONSULTATION

ssues and concerns raised during the public consultation process were obtained through a combination of individual engagements with stakeholders, written feedback received during the notification period, and informal discussions with landowners and service providers operating within and around the licence areas. Although attendance at the formal public meeting was limited, the issues identified are consistent with those typically raised in rural farming and peri-urban contexts across the Karibib–Omaruru–Okahandja corridor, which spans both the Erongo and Otjozondjupa Regions.

The issues raised reflect the nature of early-stage mineral exploration projects and are largely focused on local economic opportunities, environmental protection, health and safety, and communication practices. No objections were recorded that would preclude the continuation of the Environmental Assessment process.

Table 4-2: Summary of Issues Raised

Theme	Key Issues Raised
Economic	• Prioritisation of employment opportunities for local residents where feasible. • Expectation that the project should contribute positively to local economies through procurement of goods and services from nearby towns, including Karibib, Omaruru and Okahandja. • Interest in whether exploration activities could lead to longer-term socio-economic benefits should the project advance beyond the exploration phase.
Health & Safety	• Concerns regarding the proper handling and disposal of solid waste and wastewater at exploration camps and work sites. • Potential dust, noise and vehicle emissions generated by exploration traffic and drilling equipment. • Need for adequate occupational health and safety measures for workers operating on farms and shared access routes.
Ecological & Environmental	• Risk of hydrocarbon spills, oil leaks or chemical contamination affecting soils and groundwater resources. • Requirement for safe storage, handling and disposal of hazardous materials and wastes. • Protection of grazing land, air quality and water resources relied upon by livestock and surrounding farming operations.
Communication	• Need for clear, timely and ongoing communication between the proponent, landowners and affected stakeholders. • Requests for better understanding of the exploration process, anticipated duration and scale of activities across the three EPL areas.

All issues raised during the consultation process were systematically considered during the impact assessment and have informed the identification of avoidance, mitigation and management measures incorporated into the Environmental Management Plan (EMP).

4.6 CONCLUSION

The public consultation process undertaken for the proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850 was conducted in accordance with the requirements of the Environmental Management Act (EMA), No. 7 of 2007, and the Environmental Impact Assessment Regulations (GN 30 of 2012). Stakeholders in both the Erongo and Otjozondjupa Regions were notified through multiple communication channels, including newspaper advertisements, site notices, Background Information Documents (BIDs), official correspondence, and direct engagement efforts.

Although no community members attended the formal public meeting, reasonable, accessible and genuine opportunities for participation were provided, and additional efforts were made to engage stakeholders willing to share their views through direct discussions and individual interactions. The concerns raised were typical of exploration-stage projects in rural farming environments and focused primarily on employment opportunities, environmental protection, health and safety, and communication.

Importantly, no objections were raised that would preclude the continuation of the Environmental Assessment process. All relevant concerns have been incorporated into the assessment of impacts and addressed through appropriate mitigation and management measures contained in the EMP. On this basis, the public consultation process is considered adequate, compliant and sufficient for the purposes of environmental decision-making.

5 CHAPTER FIVE: ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

5.1 OVERVIEW

The Proponent recognises the importance of implementing the proposed exploration activities on EPL 10848, EPL 10849 and EPL 10850 in a manner that is environmentally responsible, socially acceptable, and fully compliant with Namibia's legal and regulatory framework. In accordance with this commitment, a comprehensive Environmental Management Plan (EMP) has been developed to guide the planning, execution and monitoring of all exploration-related activities across the three licence areas.

The EMP is designed to identify potential environmental and socio-economic impacts associated with the exploration phase, assess the significance of these impacts, and define appropriate avoidance, mitigation and management measures. Particular attention is given to impacts related to:

- land disturbance and access-track creation;
- vegetation clearing and rehabilitation;
- dust, noise and emissions from vehicles and drilling equipment;
- water sourcing, use and protection;
- waste and hazardous-material management;
- occupational health and safety; and
- interactions with surrounding commercial farming operations, landowners and nearby service centres, including Karibib, Omaruru and Okahandja.

Given the temporary, small-scale and low-impact nature of early-stage mineral exploration, the EMP places strong emphasis on ensuring that all disturbances are localised, carefully controlled and fully reversible through the application of good environmental practice and timely rehabilitation. The EMP also seeks to enhance potential positive socio-economic outcomes, including local employment opportunities, procurement of goods and services from nearby towns, and transparent engagement with landowners and Interested and Affected Parties (I&APs).

The EMP will be implemented throughout the exploration phase across EPL 10848, EPL 10849 and EPL 10850, and will be subject to ongoing monitoring, review and refinement where necessary. Updates to the EMP may be required in response to changes in exploration methods, regulatory requirements, environmental conditions, or stakeholder feedback. Through this adaptive management approach, the EMP provides a practical and

effective framework for managing risks and ensuring that exploration activities are conducted in a responsible, compliant and sustainable manner.

5.2 ASSESSMENT OF IMPACTS

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

Table 5-1: Assessment Criteria

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

(***Adopted from ECC-Namibia, 2017)***

Table 5-2: Impact Significance

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

(Adopted from ECC-Namibia, 2017)

Table 5-3: Environmental Impacts and Aspects Assessment

ENVIRONMENTAL IMPACT	ELEMENT	IMPACT	PHASE	DURATION	MAGNITUDE	EXTENT	TYPE	PROBABILITY	SIGNIFICANCE
TOPOGRAPHY	Topography and Landscape	Localised alteration of micro-topography at drill pads and access tracks	Exploration	Short term	Low	Local	Direct	Probable	Low
	Topography and Landscape	Temporary visual impacts from drill rigs, vehicles and small spoil heaps (drill cuttings)	Exploration	Short term	Low	Local	Direct	Probable	Low
SOILS	Soil	Localised loss or disturbance of topsoil during drill pad preparation	Exploration	Short term	Low	Local	Direct	Highly probable	Moderate
	Soil	Soil contamination from improper waste handling or hydrocarbon spills	Exploration	Short term	Moderate	Local	Direct	Improbable	Low
LAND CAPABILITY & ECOLOGY	Socio-Economic Activities	Temporary restriction of land use at drill sites and access routes	Exploration	Short term	Low	Local	Direct	Probable	Low

ENVIRONMENTAL IMPACT	ELEMENT	IMPACT	PHASE	DURATION	MAGNITUDE	EXTENT	TYPE	PROBABILITY	SIGNIFICANCE
	Terrestrial ecology and biodiversity	Localised reduction in vegetation cover at drill pads and tracks	Exploration	Short term	Low	Local	Direct	Probable	Low
	Groundwater quality	Potential groundwater contamination from drilling fluids or fuel spills	Exploration	Short term	Moderate	Local	Direct	Improbable	Low
	Surface water quality	Increased sediment mobilisation during rainfall from disturbed soil surfaces	Exploration	Short term	Low	Local	Direct	Probable	Low
	Surface water quality	Localised stormwater runoff from cleared drill pads and tracks	Exploration	Short term	Low	Local	Direct	Improbable	Low
AIR QUALITY	Air Quality	Generation of dust from vehicle movement and drilling activities	Exploration	Short term	Low	Local	Direct	Probable	Moderate
NOISE	Noise Pollution	Noise from drilling rigs,	Exploration	Short term	Low	Local	Direct	Probable	Low

ENVIRONMENTAL IMPACT	ELEMENT	IMPACT	PHASE	DURATION	MAGNITUDE	EXTENT	TYPE	PROBABILITY	SIGNIFICANCE
		vehicles and generators affecting nearby farm activities							
LANDSCAPE / VISUAL	Topography and Landscape	Visual impacts due to temporary structures, vehicles and equipment	Exploration	Short term	Low	Local	Direct	Probable	Low
FLORA	Terrestrial ecology and biodiversity	Clearing or damage to vegetation at drill pads and access tracks	Exploration	Short term	Moderate	Local	Direct	Probable	Moderate
	Terrestrial ecology and biodiversity	Disturbance to protected or slow-growing plant species	Exploration	Short term	Moderate	Local	Direct	Improbable	Low
	Terrestrial ecology and biodiversity	Establishment of invasive or bush-encroaching species in disturbed areas	Exploration	Long term	Low	Local	Direct	Probable	Low
	Terrestrial ecology and biodiversity	Risk of uncontrolled or accidental fires during dry season	Exploration	Short term	High	Local	Direct	Improbable	Moderate

ENVIRONMENTAL IMPACT	ELEMENT	IMPACT	PHASE	DURATION	MAGNITUDE	EXTENT	TYPE	PROBABILITY	SIGNIFICANCE
FAUNA	Terrestrial ecology and biodiversity	Temporary disturbance to fauna from noise, vehicle movement and human presence	Exploration	Short term	Moderate	Local	Direct	Highly probable	Moderate
SOCIO-ECONOMIC	Socio-Economic Activities	Temporary employment opportunities for local residents	Exploration	Short term	Low	Local	Direct	Probable	Moderate Positive
	Socio-Economic Activities	Increased activity levels on farms raising security or access concerns	Exploration	Short term	Moderate	Local	Direct	Probable	Moderate
	Socio-Economic Activities	Local procurement of fuel, accommodation and services from surrounding centres	Exploration	Short term	Moderate	Local	Direct	Highly probable	Moderate Positive
	Contribution to Local Economy	Short-term contribution to the local economy through	Exploration	Short term	Moderate	Local	Direct	Probable	Moderate Positive

ENVIRONMENTAL IMPACT	ELEMENT	IMPACT	PHASE	DURATION	MAGNITUDE	EXTENT	TYPE	PROBABILITY	SIGNIFICANCE
		exploration spending							
HERITAGE	Archaeological / Cultural Heritage	Accidental disturbance of unknown heritage resources during drilling or access	Exploration	Short term	Moderate	Local	Direct	Improbable	Low