Environmental Scoping Report for the Consulting Services for the Design and Supervision of Urban Infrastructure Lot 2 (Karibib and Rundu Towns) Under the Development Workshop Namibia Programme

Prepared for: Development Workshop Namibia

2 June 2025

Client Reference No. KfW:42937 / BMZ:2019 67462

SMEC INTERNAL REF. N0124

an SNJ company

The Development Workshop Namibia (DWN) has initiated this bulk infrastructure project to support the development of Usab Extension 6 (DWN Project Area) and bulk infrastructure for Karibib and the Southern portions of the Ndama area in Rundu. The project aims to enhance essential infrastructure for roads, water, sewerage and electrical supply. SMEC is responsible for the detailed design, construction, and commissioning of various infrastructure components.

Enviro Management Consultants (EMC) have been appointed as a sub consultant to SMEC Namibia for the ESIA and EMP compliance. This report was prepared by EMC.

TABLE OF CONTENTS

Table of Figures and Maps:

Index of Tables

Disclaimer:

1. EXECUTIVE SUMMARY

This Environmental Scoping Report presents the outcomes of a Basic Environmental Assessment undertaken for the proposed bulk infrastructure development in Karibib, located within the Erongo Region of Namibia. The initiative, led by Development Workshop Namibia (DWN) and financed by KfW, aims to enhance essential urban infrastructure in the low-income settlement of Usab Extension 6. The project components include the construction of a 3.1 km internal sewer and water distribution network, upgrading of a 0.5 km trunk sewer, installation of a 1.2 km gravity sewer main, rehabilitation of existing oxidation ponds, and expansion of bulk electricity services through the installation of a 1.5 km 11 kV power line and associated substations.

The environmental assessment was conducted in compliance with the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations of 2012. Furthermore, given the involvement of an international development finance institution, the project aligns with applicable international environmental and social safeguard standards, including the IFC Performance Standards and the KfW Sustainability Guidelines.

A comprehensive environmental and social baseline was established, covering climatic conditions, topography, geology, soils, biodiversity, surface hydrology, demographic trends, and socio-economic characteristics. Public consultation was conducted in accordance with Section 21 of the EIA Regulations. This process involved the placement of newspaper notices, organization of a public meeting, and an open comment period to receive feedback from Interested and Affected Parties (IAPs). Key concerns raised by stakeholders included potential dust and noise emissions near residential areas, the risk of damage to private property, and questions related to compensation for disturbances.

Additionally, there was a strong emphasis on the inclusion of local labor during construction to enhance local economic participation. The community broadly supported the proposed infrastructure upgrades, particularly improvements in water supply and sanitation services.

An important concern raised during the consultation process was the need for localized blasting due to hard rock encountered during trenching. Community members requested early notification of blasting activities, proper signage, and the strategic siting of blast zones to avoid sensitive locations such as schools and residential dwellings.

The environmental assessment identified a range of potential impacts, including soil erosion, air and water pollution, noise, occupational health and safety risks, and waste generation. These impacts are

considered to be site-specific and of limited duration, and can be effectively mitigated through the implementation of the Environmental and Social Management Plan (ESMP). Conversely, the project is expected to generate numerous long-term benefits, including improved public health, enhanced access to essential services, increased property values, and contributions toward inclusive urban development.

An evaluation of project alternatives, including the "no-go" option, reaffirmed the proposed development as the most socially and environmentally sustainable course of action. The ESMP outlines specific mitigation and monitoring measures to address residual impacts and ensure regulatory compliance.

In summary, the proposed bulk infrastructure project is deemed both environmentally acceptable and socially beneficial. Provided that the recommended mitigation measures are fully implemented, no significant adverse impacts are anticipated. It is therefore recommended that the Ministry of Environment, Forestry and Tourism (MEFT) issue an Environmental Clearance Certificate to enable project implementation.

2. INTRODUCTION AND PROJECT BACKGROUND

The proposed bulk infrastructure development project in Karibib, Erongo Region, forms part of a broader urban upgrading initiative implemented under the Development Workshop Namibia (DWN) programme, with funding from KfW. The project entails the construction and rehabilitation of essential urban services including sewer and water reticulation, trunk sewer upgrades, oxidation pond rehabilitation, and electrical network expansion to service low-income residential extensions, primarily Usab Extension 6.

Figure 1: Locality of Karibib

This Environmental Impact Assessment (EIA) has been initiated in compliance with the Environmental Management Act (EMA), No. 7 of 2007 and its 2012 Regulations (GN No. 30), which mandate the assessment of listed activities likely to have a significant impact on the environment. The project triggers several listed activities under the EMA, including the development of wastewater treatment facilities and bulk infrastructure.

In addition to national legislative requirements, this assessment also adheres to international environmental and social standards, particularly those outlined by the International Finance Corporation (IFC) Performance Standards (2012), as the project is supported through concessional funding from the German development bank (KfW). These standards emphasize the importance of environmental and social sustainability, stakeholder engagement, impact mitigation, and transparent management processes.

The main objectives of this EIA are:

- To identify and evaluate potential environmental and social impacts associated with the proposed infrastructure works;
- To outline feasible mitigation measures that will minimize adverse impacts and enhance positive outcomes;
- To provide an Environmental and Social Management Plan (ESMP) to guide implementation and monitoring;
- To facilitate stakeholder engagement and public participation as required under the EMA.

This report provides a comprehensive review of the project design, biophysical and socio-economic environment, potential impacts, and management recommendations. It supports the issuance of an Environmental Clearance Certificate (ECC) by the Ministry of Environment, Forestry and Tourism (MEFT), ensuring that infrastructure development in Karibib proceeds in an environmentally responsible and socially inclusive manner.

The town of Karibib, located in the Erongo Region of Namibia, has experienced steady population growth and increasing demand for basic urban services, particularly in newly developed low-income residential areas such as Usab Extensions 6 and 7. In response, the Development Workshop Namibia (DWN), with financial support from KfW under Programme Reference No. BMZ: 2019 67462, initiated the design and implementation of critical bulk infrastructure upgrades. The project, executed under Lot 2 of the urban infrastructure development programme, aims to improve access to sanitation, water and electricity services while enhancing the overall resilience and capacity of municipal infrastructure.

Figure 2: Some of the existing sewage infrastructure to be upgraded and rehabilitated.

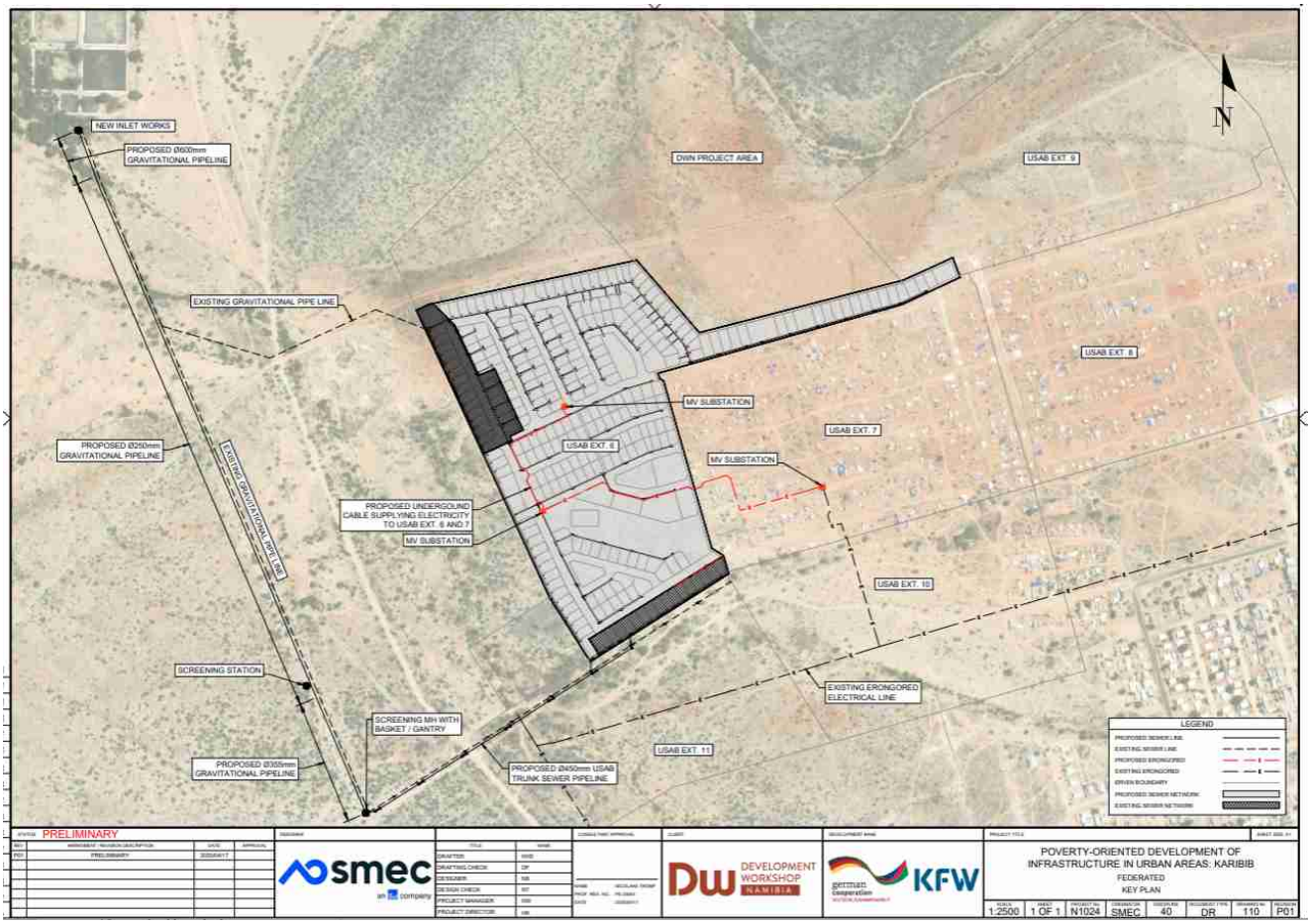


Figure 3: Components of the proposed development

Key components include the development of a 3.1 km sewer and water network for 253 plots in Usab Extension 6, the upgrading of a 0.5 km section of the existing trunk sewer from 160 mm to 450 mm in diameter, the installation of a 1.2 km gravity main to the oxidation ponds, rehabilitation of existing oxidation ponds, and the provision of a 1.5 km 11kV electrical line with two 630 kVA substations. These works are designed to accommodate projected population growth through to the year 2050 and align with national service delivery and environmental management objectives. The project is part of a broader effort to support sustainable urban development in Karibib by addressing infrastructure backlogs and improving living conditions for low-income communities.

2.1 Resources Required For The Project

The implementation of the proposed infrastructure will require a range of physical and human resources. The estimated inputs include:

Construction Materials:

- Gravel, sand, and aggregate for trenching, pipe bedding, road formation, and backfilling.
- Concrete, cement, and bricks for manholes and other permanent structures.
- PVC or HDPE pipes and fittings for sewer networks.

Water:

- For dust suppression, concrete mixing, and worker use, sourced from municipal supplies or authorized boreholes.
- Bulk water and reticulation system will also be used during the operation phase of the project.

Fuel and Lubricants:

- Diesel and petrol for use in excavators, trucks, compactors, and other construction vehicles.
- Oils and lubricants for machinery maintenance.

Electricity:

- Temporary electricity for tools and site services, and permanent bulk infrastructure for residential access.

Labour and Equipment:

- Local employment for skilled and unskilled workers.
- Use of machinery such as trenchers, excavators, concrete mixers, and delivery trucks.

Consumables and Site Support:

- PPE (hard hats, boots, gloves, vests).
- Construction materials such as wire, nails, formwork, and sealants.

Financial Resources:

- Financial resources are required for the successful implementation of this project.

These inputs will be sourced responsibly, prioritizing local suppliers and compliance with Namibian environmental and labour regulations. The use of natural resources such as gravel and water will be monitored to minimize overuse or degradation of local ecosystems.

2.2 Need And Desirability Of The Project

The proposed infrastructure upgrades in Karibib respond directly to the urgent need for improved access to basic services—namely sanitation, water and electricity—for urban residents in the Usab Extension 6 area and the broader Karibib community. This project aligns with national development priorities, municipal planning frameworks, and international development goals, including those of the KfW Development Bank and IFC.

2.2.1 Alignment with Local and National Policy

- The project supports the Rundu Town Council's spatial development and infrastructure upgrade plans.

- It contributes to Namibia's National Development Plan (NDP5) by promoting inclusive urban development and strengthening municipal service delivery.
- It supports objectives of Vision 2030, focusing on improving access to land, housing, and services for all Namibians.
- The project aligns with the Sustainable Development Goals (SDGs), particularly:
    - Goal 6: Clean Water and Sanitation
    - Goal 11: Sustainable Cities and Communities
    - Goal 9: Industry, Innovation and Infrastructure

2.2.2 Need for the Project

- Inadequate Sanitation and Water Coverage: Currently, only 60 of the 306 residential plots in Usab Extension 6 are serviced with water and sewer infrastructure. The remaining 244 unserviced plots represent a significant public health and environmental risk, particularly in an urban context where reliance on unimproved sanitation systems may lead to groundwater contamination and disease outbreaks.
- Limited Access to Electricity: A lack of formal electricity connections in newly developed areas constrains household safety, educational outcomes, and economic activity. Formal bulk electricity provision will eliminate reliance on unsafe, informal power sources.
- Urban Growth Pressure: Karibib is experiencing gradual urban expansion. Providing bulk infrastructure is essential to meet current and future housing demand while avoiding informal and unplanned settlement patterns.
- Plot Affordability and Inclusive Development: The project reduces the cost of serviced plots from N$50,000 to N$30,000, making them accessible to lower-income households. This supports pro-poor urban development in line with Namibia's Vision 2030 and the Harambee Prosperity Plan.

2.2.3 Desirability of the Project

- Alignment with Local and National Planning Objectives: The project supports the Karibib Town Council's spatial development strategy and complements national housing and infrastructure development goals.
- Health and Safety Improvements: The installation of waterborne sewer systems and proper energy infrastructure will greatly improve public health, reduce environmental contamination, and lower the risk of fires or accidents caused by informal wiring or sewage exposure. The project also contributes to supplying potable water to the residents of Karibib.
- Social and Economic Development: The project generates temporary local employment, supports small businesses through construction contracts, and enhances long-term land value. These benefits align with IFC Performance Standards promoting inclusive and sustainable

development. Improved electricity network shall contribute positively to the small business sector allowing residents to utilize available electricity for new business ventures.

- Sustainability and Donor Compliance: The project is supported by KfW, which emphasizes climate-resilient, socially responsible infrastructure development. Implementation includes robust mitigation and monitoring measures aligned with Namibian law and international safeguards.

2..2.4 Environmental Considerations

While there are unavoidable environmental and social impacts associated with greenfield development (e.g., vegetation clearing, dust generation, potential displacement), these impacts are localised and manageable through proper mitigation strategies outlined in this ESIA.

3. ASSUMPTIONS AND LIMITATIONS

It is assumed that the information provided by Consulting Team and the information in the Inception Report and other relevant documentation used for the compilation of this Environmental Report is accurate and relevant to this date. It is also assumed that the secondary data collected for the bio-physical and socio-economic environments are true and correct. These include data sources associated with printed books, data available on the internet and other studies as indicated in this report. The Contract determined the available time and funds available to complete this project. Communication between the various team members was assured trough regular meetings.

4. DETAILS OF THE APPLICANT AND CONSULTANT

4.1 Details of the Applicant

Applicant	Development Workshop Namibia
Contact Person	Me. Salmi Neshila
Contact Details Telephone Email:	+264 61 240140 +264 85 6417900 s.neshila@dw-namibia.org

4.2 Details of the Environmental Consultant

The environmental project team from EMCN is led by Rian du Toit. He is an Environmental Assessment Practitioner with more than twenty years' working experience in the field of Environmental Management.

Name	**Role in the Project**	**Qualifications and Experience**
Rian du Toit	Environmental Assessment Practitioner	M.A. Environment and Society (University of Pretoria) with more than 22 years' experience in the field of environmental management, mostly related to roads, services, transmission lines and mining right applications.

5. LEGAL FRAMEWORK AND GUIDELINES

This section deals with the regulatory requirements that are applicable to this project.

5.1 The Namibian Legislative Framework

During the preparation of the Scoping Report, the following legislation and policies were considered:

- Environmental Management Act 7 of 2007 ;
- Environmental Regulations of 2012;
- Water Resources Management Act (No. 11 of 2013)
- Local Authorities Act (No. 23 of 1992)
- Public Health Act (No. 36 of 1919)

It is envisioned that there need to be one reports submitted to Ministry of Environment, Forestry and Tourism (MEFT) for issuing Environmental Clearance Certificates. This report include expected impacts during the design phase and construction phase of the project. The findings applicable to the design phase and construction phase will be discussed with the project engineers, with the aim to address them as the designs progress. The structured outline for the Environmental Scoping report is prescribed by the Environmental Management Act and associated Regulations (Regulation 15.2) which states:

An assessment report must contain all information that is necessary for the Environmental Commissioner to consider and to make a decision on the application, and must include -

(a) the curriculum vitae of the EAP who compiled the report;

(b) a detailed description of the proposed listed activity;

(c) a description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity;

d) a description of the need and desirability of the proposed listed activity and identified potential alternatives to the proposed listed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity;

(e) an indication of the methodology used in determining the significance of potential effects;

(f) a description and comparative assessment of all alternatives identified during the assessment process;

(g) a description of all environmental issues that were identified during the assessment process, an assessment of the significance of each issue and an indication of the extent to which the issue could be addressed by the adoption of mitigation measures;

(h) an assessment of each identified potentially significant effect, including -

(ha) cumulative effects;

(hb) the nature of the effects;

(hc) the extent and duration of the effects;

(hd) the probability of the effects occurring;

(he) the degree to which the effects can be reversed;

(hf) the degree to which the effects may cause irreplaceable loss of resources; and

(hg) the degree to which the effects can be mitigated;

(i) a description of any assumptions, uncertainties and gaps in knowledge;

(j) an opinion as to whether the proposed listed activity must or may not be authorised, and if the opinion is that it must be authorised, any conditions that must be made in respect of that authorisation; and

(k) a non-technical summary of the information.

In terms of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN No. 29 of 2012), the following listed activities are triggered by the proposed infrastructure development project in Karibib. An Environmental Clearance Certificate (ECC) is required for these activities prior to the commencement of construction.

Relevant Listed Activities

Activity No.	**Description**	**Relevance to Project**
8.1	The construction of pipelines, canals, and channels for bulk water supply	Includes water delivery pipelines within and across peri-urban areas.
9.1	Construction of wastewater treatment plants and associated infrastructure	Rehabilitation of oxidation ponds and bulk sewer infrastructure upgrades
9.2	Modification or changes to existing wastewater disposal infrastructure	Internal sewer reticulation and bulk sewer upgrades constitute modifications to existing systems
10.1	Construction of lines for bulk transmission of electricity	Installation of bulk electricity infrastructure to supply serviced areas
10.2	Construction of facilities for transmission and supply of electricity	Includes transformer housing or other supply infrastructure components

Based on the triggered activities, the project will require a Basic Environmental Assessment process, supported by appropriate public consultation, a scoping report, and a draft Environmental Management Plan (EMP). These are to be submitted to the competent authority for review and approval prior to the issuance of the ECC.

Environmental Impact Assessments are guided and reviewed by the Directorate of Environmental Affairs (DEA) in the Ministry of Environment, Forestry and Tourism. Guidelines for various projects have been compiled to help improve EIA practice in Namibia. There are several sector laws in Namibia that have relevance to Scoping and EIAs. The following table provides a summary of the relevant sector legislation.

Statute	Provisions	Project Implications
Constitution of the Republic of Namibia 1 of 1990, as amended in 2014	Article 95 (1) of the Constitution of Namibia states that "The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the" maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilisation of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future.	This Article gives status to the following cited legislation:
Forest Act 12 of 2001	Provision for the protection of natural vegetation. No regulations promulgated yet. Section 22(1): It is unlawful for any person to "*cut, destroy or remove:* • any living tree, bush or shrub growing within 100 meters from a river, stream or watercourse on land that is not part of a surveyed erf or a local authority area without a license. • Vegetation which is on a sand dune or drifting sand or on a gully unless the cutting, destruction or removal is done for the purpose of stabilizing the sand or gully.	• Permits should be obtained from Department of Forestry for the removal of protected trees.
National Heritage Act 27 of 2004	Heritage resources to be conserved in development.	All archaeological sites to be identified and protected.
Nature Conservation Ordinance 4 of 1975	Requires a permit for picking (the definition of "picking" includes damage or destroy) protected plants without a permit.	In case there is an intention to remove protected species, then permits will be required.
Preservation of Trees and Forests under the Forest Act, 2001.	Protection to tree species.	The Contractor will require a permit to remove any protected trees.
Soil Conservation Act 76 of 1969	Prevention and combating of soil erosion; conservation, improvement and manner of use of soil and vegetation, and protection of water sources. The Minister may direct owners or land occupiers in respect of *inter alia* water courses. No Regulations exist to this effect.	Removals of vegetation cover to be avoided and minimized at all costs. Soil pollution to be avoided.

Water Resources Management Act 11 of 2013	Section 44 states that no person may abstract or use water, except in accordance with a license issued under this Act. Abstraction of water including open waters, aquifer, brackish or marine water. Section 566 states that any drilling to be conducted or enlargement of an existing borehole can only be conducted under a permit issued under the Act. Section 66 states that a person may not discharge any effluent directly or indirectly to any water resource on or under the ground or construct any effluent treatment facility or disposal site unless in compliance with a permit issued under Section 70 of the Act. Where "effluent" means any liquid discharge as a result of domestic, commercial, industrial or agricultural activities.	Obligation not to pollute surface water bodies. The following permits are required in terms of the Water Act: • water abstraction license that will form part of the contract obligations.
Public Health Act 36 of 2015	Provides for the prevention of pollution of public water supplies.	A general obligation for the Contractor not to pollute the water bodies in the area.

As mentioned, the proposed project triggers numerous listed activities under the Environmental Regulations and therefore require some form of environmental assessment. The following figure explains the process to be followed and serves as the guideline appropriate to this document:

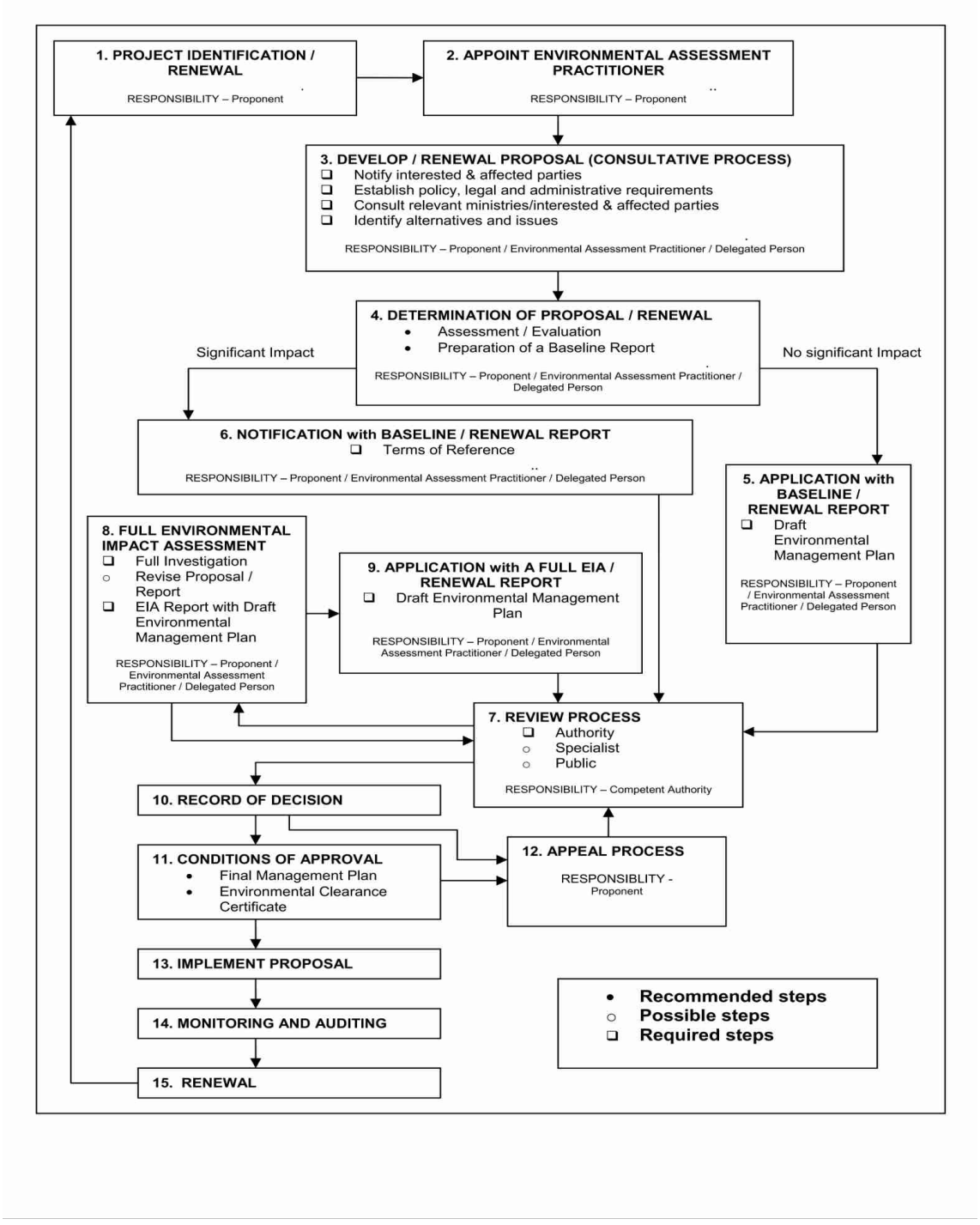


Figure 4: Environmental Assessment Process explained

This project is funded by an IFC and therefore some additional guidelines are appropriate as discussed below:

5.2 International Guidelines

- IFC Performance Standards (2012)
- KfW Sustainability Guidelines

IFC's Sustainability Framework articulates the Corporation's strategic commitment to sustainable development and is an integral part of IFC's approach to risk management. The Sustainability Framework comprises IFC's Policy and Performance Standards on Environmental and Social Sustainability, and IFC's Access to Information Policy. The Policy on Environmental and Social Sustainability describes IFC's commitments, roles, and responsibilities related to environmental and social sustainability. IFC's Access to Information Policy reflects IFC's commitment to transparency and good governance on its operations and outlines the Corporation's institutional disclosure obligations regarding its investment and advisory services.

The Performance Standards are directed towards clients, providing guidance on how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities. In the case of its direct investments (including project and corporate finance provided through financial intermediaries), IFC requires its clients to apply the Performance Standards to manage environmental and social risks and impacts so that development opportunities are enhanced.

IFC uses the Sustainability Framework along with other strategies, policies, and initiatives to direct the business activities of the Corporation to achieve its overall development objectives. The Performance Standards may also be applied by other financial institutions.

Together, the ten Performance Standards establish standards that the client is to meet throughout the life of an investment by IFC:

- Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
- Performance Standard 2: Labor and Working Conditions
- Performance Standard 3: Resource Efficiency and Pollution Prevention
- Performance Standard 4: Community Health, Safety, and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- Performance Standard 7: Indigenous Peoples
- Performance Standard 8: Cultural Heritage
- Performance Standard 9: Financial Intermediaries
- Performance Standard 10: Stakeholder Engagement and Information Disclosure

Performance Standard 1 establishes the importance of:

(i) integrated assessment to identify the environmental and social impacts, risks, and opportunities of projects;
(ii) effective community engagement through disclosure of project-related information and consultation with local communities on matters that directly affect them; and
(iii) the client's management of environmental and social performance throughout the life of the project.

Performance Standards 2 through 10 establish objectives and requirements to avoid, minimize, and where residual impacts remain, to compensate/offset for risks and impacts to workers, Affected Communities, and the environment.

While all relevant environmental and social risks and potential impacts should be considered as part of the assessment, Performance Standards 2 through 10 describe potential environmental and social risks and impacts that require particular attention. Where environmental or social risks and impacts are identified, the client is required to manage them through its Environmental and Social Management System (ESMS) consistent with Performance Standard 1.

Performance Standard 1 applies to all projects that have environmental and social risks and impacts. Depending on project circumstances, other Performance Standards may apply as well. The Performance Standards should be read together and cross-referenced as needed.

The requirements section of each Performance Standard applies to all activities financed under the project, unless otherwise noted in the specific limitations described in each paragraph. Clients are encouraged to apply the ESMS developed under Performance Standard 1 to all their project activities, regardless of financing source. Several cross-cutting topics such as climate change, gender, human rights, and water, are addressed across multiple Performance Standards.

In addition to meeting the requirements under the Performance Standards, clients must comply with applicable national law, including those laws implementing host country obligations under international law (as stated in Section 5.1).

The **World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines)** are technical reference documents with general and industry-specific examples of good international industry practice. IFC uses the EHS Guidelines as a technical source of information during project appraisal. The EHS Guidelines contain the performance levels and measures that are normally acceptable to IFC, and that are generally considered to be achievable in new facilities at reasonable costs by existing technology.

For IFC-financed projects, application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets with an appropriate timetable for achieving them. The environmental assessment process may recommend alternative (higher or lower) levels or measures, which, if acceptable to IFC, become project- or site-specific requirements. The General EHS Guideline contains information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors. It should be used together with the relevant industry sector guideline(s).

When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternative performance level is protective of human health and the environment.

A set of ten Guidance Notes, corresponding to each Performance Standard, and an additional Interpretation Note on Financial Intermediaries offer guidance on the requirements contained in the Performance Standards, including reference materials, and on good sustainability practices to help clients improve project performance.

6. METHODOLOGY FOR THE INVESTIGATION

The following methodology was followed for the environmental investigation process as to compile the environmental assessment report:

Data Collection and Verification

- ***Site visit and stakeholder consultation.*** A site visit was conducted at the site to determine the bio-physical conditions of the project area. During the site visit focused attention was given to any environmental aspect that might be significantly affected by the construction and operational phases of the proposed project.
    - During the stakeholder consultation questions were posed to the meeting surrounding any environmental aspect they consider to be sensitive with regards to the project. These comments (if any) are then taken into consideration during the impact identification and evaluation process.
- ***Literature review.*** Existing literature are used for obtaining information on the bio-physical and socio-economic environments of this project.
- ***Obtaining information from team members*****.** Various inputs were received from team members involved in the project. This includes the technical, design and management team members. Liaising with these teams enhances the understanding of the project and therefore focuses the environmental assessment to make it site and project specific.

7. BIO-PHYSICAL AND SOCIAL BACKGROUND

7.1 Climate and Air Quality

Karibib, located in Namibia's Erongo Region, lies within a transitional zone between the arid Namib Desert and the semi-arid Central Plateau, resulting in a predominantly arid to semi-arid climate. The area receives low and highly variable annual rainfall, averaging between 150 mm and 300 mm, typically occurring during the summer months from December to March, often in the form of short, intense convective thunderstorms (Mendelsohn et al., 2002). The mean annual temperature in Karibib ranges between 19°C and 21°C, with summer maxima exceeding 35°C and winter minima occasionally falling below 5°C (Namibia Meteorological Service, 2020). The region experiences high evaporation rates, often exceeding 2,500 mm/year, which greatly surpasses precipitation and contributes to its aridity (Christelis & Struckmeier, 2001). These climatic characteristics create challenging conditions for both vegetation and human land-use. The imbalance between precipitation and evaporation contributes to water scarcity, necessitating climate-sensitive planning for any developmental interventions in the region.

Air quality in Karibib is generally considered good, with average PM2.5 levels around 6 µg/m³ and PM10 levels near 21 µg/m³, both of which fall well below the World Health Organization's recommended exposure limits (AQI.in, 2024). This indicates low health risks from air pollution in the region, largely attributable to its low population density and absence of major industrial emissions.

Wind conditions vary significantly throughout the year. The windiest period occurs from mid-May to mid-November, peaking in July with mean hourly wind speeds of approximately 10.4 mph (16.7 km/h). In contrast, the calmest conditions prevail between mid-November and mid-May, with the lowest average speeds recorded in March at around 7.1 mph (11.4 km/h).

Seasonal wind direction also fluctuates, with prevailing easterly winds from March to September, and southerly winds from September to March (WeatherSpark, 2024). These factors influence both microclimatic conditions and regional dust transport, and should be considered in environmental impact assessments for infrastructure development.. The imbalance between precipitation and evaporation contributes to water scarcity, necessitating climate-sensitive planning for any developmental interventions in the region.

7.2 Topography

Karibib lies within the Central Plateau, a significant physiographic unit that features elevated terrain and complex topography. The town itself is located at an average elevation of approximately 1,180 meters above sea level, with surrounding altitudes ranging between 1,147 and 1,246 meters (Topographic-Map.com, 2024). This elevation contributes to the semi-arid climatic conditions and plays a crucial role in influencing surface drainage and microclimatic variability.

Figure 5: General topography of the project area in Karibib.

The regional landscape is predominantly composed of gently undulating plains interspersed with inselbergs, rocky outcrops, and isolated low hills that reflect the area's ancient geological evolution. These features create diverse topographic niches that affect soil development, vegetation patterns, and wildlife habitat. The terrain is intersected by ephemeral river systems such as the Khan and Swakop Rivers, which have carved shallow valleys and contribute to seasonal hydrological dynamics (Wikipedia, 2024).

Topographical characteristics significantly influence land use in and around Karibib. The flatter plains are generally more favorable for settlement expansion, transport infrastructure, and limited agricultural activities. In contrast, the more rugged terrain, while less suitable for cultivation, offers opportunities for mining and eco-tourism. Karibib is surrounded by several notable mountain ranges and upland features, primarily associated with the Damara Orogenic Belt and Central Namibian Plateau. The key ranges and geological formations near Karibib include:

- Erongo Mountains northwest of Karibib;
- Khan Highlands southwest of Karibib and near the Khan River and;
- Otjipatera Mountains northeast of Karibib, extending towards Wilhelmstal and Omatako.

7.3 Geology and Soils

Karibib, situated within Namibia's Erongo Region, is geologically characterized by its position in the southern Central Zone of the Pan-African Damara Belt—a Neoproterozoic orogenic system formed approximately 665 million years ago. The region's bedrock predominantly comprises metamorphosed sedimentary sequences of the Swakop Group, including extensive dolomitic marbles of the Karibib Formation, which have undergone significant deformation and metamorphism during the Damara orogeny.

These marbles are notable for their economic value, being quarried as dimension stone and also hosting mineralization such as gold and rare-element pegmatites (Osino Resources, 2019).

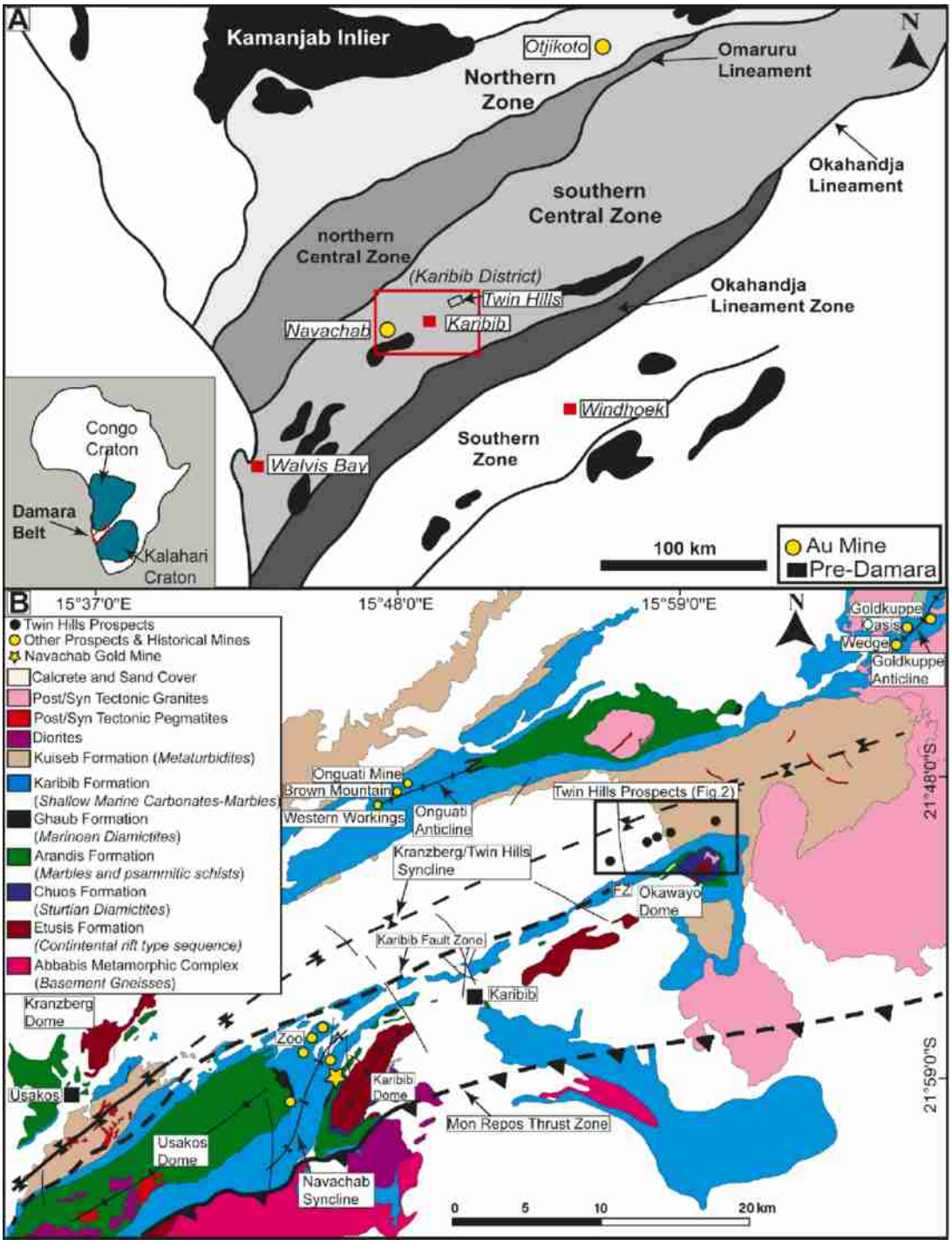


Figure 6: Simplified map of tectonostratigraphic zones of the Damara Orogen in Central Namibia, showing the location of the study area and the Karibib district in the southern Central Zone (after Miller, 2008)

The area's structural geology is complex, featuring northeast-trending dome structures, synclines, and fault zones. These structural features have played a key role in influencing the emplacement and localization of mineral deposits. The Karibib Fault Zone, in particular, has been a major focus of gold exploration due to its association with sheeted quartz-pyrite vein systems within marble host rocks (Osino Resources, 2019).

Soil development in the Karibib region is largely governed by the underlying lithology and the arid climatic conditions. The predominant soil types include Calcisols, which are characterized by subsurface calcium carbonate accumulations, and Leptosols, which are shallow soils often forming over hard rock.

Both soil types exhibit low organic content, limited moisture retention, and low inherent fertility. These properties present limitations for agricultural use and require careful land management strategies to prevent erosion and maintain surface stability (Atlas of Namibia, n.d.).

7.4 Vegetation

The vegetation in the Karibib area mainly consists of Central-western Karstveld and Thornbush Shrubland, which are part of the broader Acacia Tree-and-Shrub Savanna biome (Giess, 1998). Common plant species include drought-resistant trees like *Acacia erioloba* and *Acacia mellifera*, along with hardy grasses such as *Stipagrostis uniplumis*. These species are well adapted to survive in arid conditions through physiological traits like reduced leaf surface area, waxy cuticles, and dormancy during extreme drought.

Figure 7: Various Acacia trees present in the area.

The vegetation is generally sparse due to the dry soils, high evaporation rates, and limited seasonal rainfall, and many plants have evolved either deep taproots that can access groundwater reserves or shallow, spreading root systems that rapidly absorb surface moisture from brief rains. In addition to natural constraints, human activities—especially unsustainable grazing by livestock—have exacerbated vegetation stress. Over time, this has led to bush encroachment in some areas, where invasive woody plants spread aggressively, reducing biodiversity and grassland productivity. This transformation of the landscape affects the ecological balance, alters habitat suitability for native fauna, and complicates rangeland management.

As such, vegetation dynamics are a crucial consideration in long-term environmental planning and infrastructure development for arid zones like Karibib, where resilience to climate variability and anthropogenic pressure must be maintained (De Klerk, 2004).

7.5 Fauna of the area

The areas around Karibib supports a diverse array of fauna that have adapted to the arid and semi-arid landscapes characterizing the area. Among the 87 recorded mammal species, large herbivores such as the oryx (Oryx gazella), springbok (Antidorcas marsupialis), and kudu (Tragelaphus strepsiceros) are particularly notable for their physiological and behavioral adaptations to water scarcity and high temperatures.

Carnivores, including the leopard (Panthera pardus) and the cheetah (Acinonyx jubatus), are present but more elusive, relying on wide ranges and sparse prey populations.

Reptilian fauna is well represented, with at least 75 species recorded, including iconic species such as the Namib rock agama (Agama planiceps) and the Namaqua chameleon (Chamaeleo namaquensis) (DFC, n.d.). Avian diversity is especially high, with more than 217 bird species documented in the greater Karibib area, including the ostrich (Struthio camelus) and several species of eagles and other raptors (eBird, n.d.). Bird species of concern include the Cape vulture (Gyps coprotheres), which is listed as Vulnerable and has been observed in various parts of Namibia . While these species may not be exclusive to the Karibib area, their presence in the broader region underscores the ecological significance of habitats in and around Karibib.

Amphibian diversity is relatively low due to the region's dryness, but species such as the marbled rubber frog (Phrynomantis annectens) have been observed (iNaturalist, n.d.). This faunal composition underscores the ecological importance of microhabitats, water availability, and land-use patterns in shaping biodiversity within this part of Namibia.

7.6 Surface Hydrology

Karibib, located in Namibia's Erongo Region, is characterized by an arid to semi-arid climate, resulting in surface hydrology that is largely defined by ephemeral river systems. The most prominent watercourse in the area is the Swakop River, which flows intermittently during the summer rainy season, typically from January to March. These short-lived but intense flows are essential for recharging shallow alluvial aquifers and temporarily sustaining both natural ecosystems and subsistence-level agricultural activities. However, the combination of low rainfall (averaging 150 mm to 300 mm annually) and exceptionally high evaporation rates (often exceeding 2,500 mm/year) results in minimal surface runoff, with riverbeds quickly drying after rainfall events (Christelis & Struckmeier, 2001; Namibia Meteorological Service, 2020).

To mitigate water scarcity, key hydraulic infrastructure such as the Swakoppoort Dam has been constructed on the Swakop River. With a storage capacity of approximately 63.5 million cubic meters, the dam provides potable and industrial water to Windhoek, Karibib, and the Navachab Gold Mine. Despite this infrastructure, the region remains highly vulnerable to hydrological variability and periodic droughts, which can significantly constrain water availability for human consumption and economic activities. This vulnerability underscores the importance of integrated water resource management, particularly in regions dependent on ephemeral rivers for their hydrological and socio-economic stability.

7.7 Cultural Heritage

Although no formal archaeological survey has been undertaken for the project area in Karibib, the region lies within a broader cultural landscape known to contain significant heritage resources from both pre-colonial and colonial periods (Kinahan, 2001). These may include stone tools, pottery shards, historical gravesites, and features associated with early mining and railway development. As such, the potential for accidental discovery of archaeological material during earthworks cannot be ruled out. In terms of the National Heritage Act (Act No. 27 of 2004), all heritage resources are protected under

Namibian law, and any discovery of such material must be reported immediately to the National Heritage Council of Namibia (NHC, 2024). To ensure compliance, a chance-find procedure should be implemented, and construction staff should be trained to identify and respond appropriately to potential heritage finds. This precautionary approach also aligns with IFC Performance Standard 8, which emphasizes the protection of cultural heritage during infrastructure development (IFC, 2012).

7.8 Population

Karibib, located in Namibia's Erongo Region, has experienced notable demographic growth and transformation in recent years. According to the 2023 Population and Housing Census, the Karibib Constituency recorded a population of 19,705, a significant increase from the 13,320 reported in 2011 (CityPopulation.de, 2024). The town of Karibib itself accounted for 8,434 residents in 2023, up from 5,132 in 2011 (Wikipedia, 2024).

Gender distribution within the constituency is relatively balanced, with males comprising approximately 52.7% and females 47.3% of the population. The median age of the population is youthful at 24.7 years, with men averaging 25.3 years and women 24.0 years (City-Facts, 2024). Karibib spans an area of roughly 14,536 km², resulting in a low population density of about 1.4 persons per square kilometer (NSA, 2024). This sparse distribution is consistent with broader trends in Namibia, where arid environmental conditions and vast land expanses influence settlement patterns.

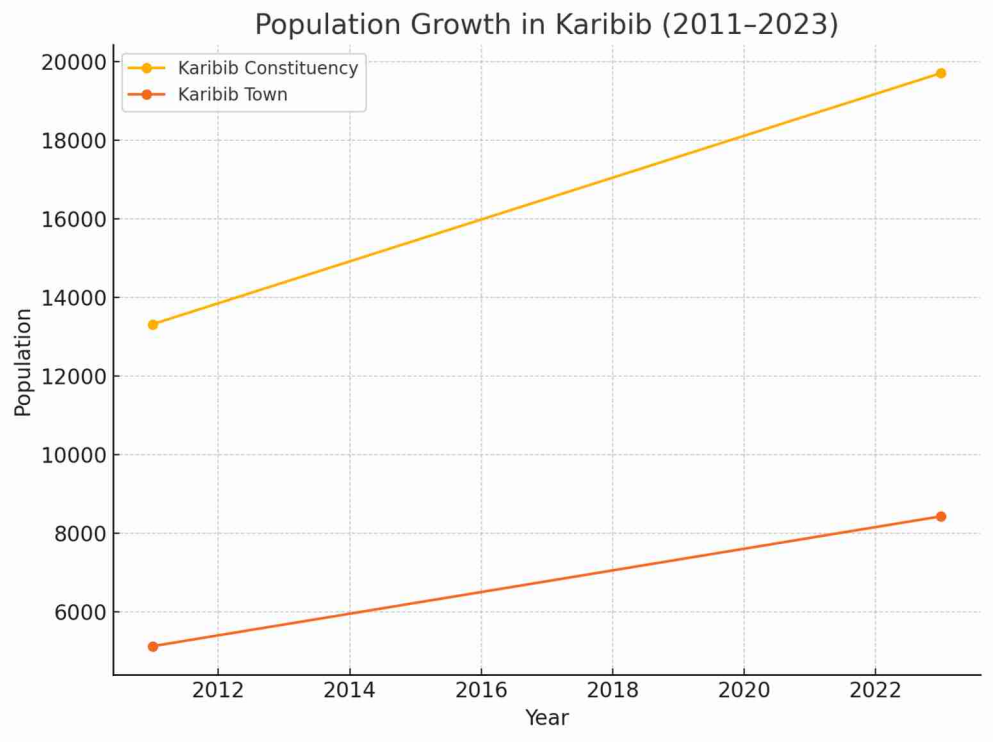


Figure 8: Population growth in both the Karibib Constituency and the town of Karibib between 2011 and 2023.

The local economy is primarily driven by mining, particularly through operations such as the Navachab Gold Mine, which contributes significantly to employment and has stimulated in-migration. Additional factors such as access to basic services, education, and transportation infrastructure have also played a

role in shaping the town's population dynamics. Karibib's demographic profile illustrates ongoing urbanization and economic transition, with implications for infrastructure planning, service provision, and environmental sustainability.

7.9 Economy and Livelihood

Karibib possesses a multifaceted economy predominantly anchored in mining, agriculture, and emerging sectors such as tourism and renewable energy. The town's economic backbone is the mining industry, with the Navachab Gold Mine, situated approximately 10 kilometers south of Karibib, serving as the primary employer and economic driver. Owned by QKR Namibia, the mine has been operational since 1989 and significantly contributes to local employment and municipal revenues (Wikipedia, 2024).

Even though statistics are not available for the town of Karibib it must be assumed that the unemployment rate shall be in line with the Erongo Region's statistical data which indicate an unemployment rate of 36.9% in 2023 (NSA 2023).

Additionally, Karibib is renowned for its high-quality marble deposits, which are quarried and processed for both domestic use and export. More recently, the Karibib Lithium Project, led by Lepidico, is expected to commence operations in 2025 and create approximately 115 direct jobs and over 800 indirect jobs, further enhancing the town's mining profile (DFC, n.d.).

Agriculture remains an important livelihood activity, particularly livestock farming, despite the constraints imposed by the region's arid climate. The area supports goat, sheep, and cattle farming, which are vital for local food security and income generation, especially in communal lands (ERC, 2024). In response to climatic challenges, innovative practices such as conservation agriculture and solar-powered irrigation systems are being promoted to improve productivity and sustainability (GIZ, 2022).

Tourism is also gaining traction, aided by Karibib's strategic location between Windhoek and Swakopmund. The town's proximity to historical sites, marble quarries, and natural landscapes makes it a potential hub for cultural and eco-tourism. Investments in tourism infrastructure and services are aimed at economic diversification and local employment creation (Wikipedia, 2024).

Overall, Karibib's economy is defined by a strong extractive sector complemented by agriculture and growing tourism potential. Ongoing investment, infrastructure development, and economic diversification will be key to sustaining livelihoods and fostering long-term socio-economic resilience.

Although Karibib has basic infrastructure such as roads, electricity, and water supply, sanitation infrastructure is outdated and inadequately maintained in many areas. Informal settlements and low-income neighborhoods often lack connection to the main sewage network, increasing the risk of groundwater and soil pollution. The rehabilitation of bulk sewer infrastructure and oxidation ponds will therefore contribute significantly to public health, environmental protection, and regulatory compliance.

8. PUBLIC PARTICIPATION PROCESS

The public participation process was undertaken in accordance with the principles and requirements of the Namibian Environmental Management Act, No 7 of 2007 and associated Regulations. The approach to the public participation process was open and participatory with the full involvement of Interested and Affected Parties (IAPs). This approach ensured that reasonable measures were taken to identify stakeholder issues and concerns.

The Methodology for the Public Participation was as follows: The proposed project was advertised twice in two different newspapers as to comply with the Environmental Management act No.7 of 2007 and the applicable Environmental Regulations.

The advertisements were placed as follows: The Market Watch sections of the Allgemeine Zeitung, Republikein and Daily Sun newspapers on the following dates:

1. 2nd April 2025 and
2. 9th April 2025.

Please refer to **Appendix C** for the proof of placements of the newspaper notices. There was only one email response received from the Activist from Karibib (since 1978), but the comments were more directed at DWN and not necessarily focused towards the project itself. The comments are included in Appendix B.

The following list are all the people that was engaged during the Public Participation Process either telephonically, personally or via e-mail:

Table 1: List of I&AP's contacted during the PPP

Hon. Neville Andre	Office of the Governor Erongo Region	Governor	+264 64 410 5700	annettekapapu90@outlook.com
Mr. M. Ntelamo	Erongo Regional Council	Chief Regional Officer	+264 64 410 5729	cro@erongorc.gov.na crosecretary@erongorc.gov.na
Hon. Melania Ndjago	Karibib Constituency	Councillor	+264 81 156 4009 +264 81 240 3917	mndjago1@gmail.com
Hon. Davey Van Wyk	Karibib Town Council	His Worship The Mayor		pa2ceo@karibibtown.org finance@karibibtown.org
Emely Tjombumbi	Karibib Town Council	Technical	064 550 016	techmanager@karibibtown.org
Mrs. Idah N. Mendai	MHSS - Erongo Region	Director	+264 81 1465479	Idah.Mendai@mhss.gov.na

Ms Emfriede Juliendina Stephanus	MoEA - Erongo	Regional Director	064 410 5000	
Ms. Auguste Shatika (Private Secretary)			064 410 5101	ashatika2@gmail.com
Mr Kennedy Chigumira (Kavango East) Johann Essmann Vernon du Preez	Roads Authority (RA)	Regional Representative	061 284 7000	pr@ra.org.na chigumirak@ra.org.na essmannj@ra.org.na duproezvm@ra.org.na
	Namibia Water Corporation (NAMWATER)		061 710 000	info@namwater.com.na
Tresia Amwaiwa Cillier Mostert	DWN Development Partners		061 240 300 061 307 297 061 307 297	info@udanam.com namibia@knightpiesold.com namibia@knightpiesold.com
Gwangwawa Batanayi James Sauramba	GFA Consulting Group			Batanayi.Gwangwawa@gfa-group.de james.sauramba@gmail.c om
Mrs. Idah N. Mendai	MHSS - Erongo Region	Director	+264 81 1465479	Idah.Mendai@mhss.gov.n a
Ms. Anna Jonas	MHSS - Kavango East Region	Director	+264 811278945	Anna.Jonas@mhss.gov.na
Ms Emfriede Juliendina Stephanus	MoEA - Erongo	Regional Director	064 410 5000	
Ms. Auguste Shatika (Private Secretary)			064 410 5101	ashatika2@gmail.com
Ms. Cristine Shilima	MoEA - Kavango East	Regional Director	066 2589111	
	Nampower		+264 (66) 255 028	webinfo@nampower.com.na
Ms Nadia Haihambo		Environmentalist		nadia.haihambo@nampower.com.na
Registered				
Stephanie Strauss	Rent-a-drum	Environmental Compliance Manager	081 307 6205	s.strauss@groupeseche.com
Jaco Swart	Rent-a-drum			cm@rent-a-drum.com.na

During the public participation process some comments were received contributing to the success of the meeting held. Here is a list of the concerns / comments received during the public participation process:

- Dust might be a problem during construction.
- Working hours for the contractor should be restricted to normal hours and not public holidays.
- The Town Council will provide suitable material where required.
- Should blasting take place it will be done very locally.
- Local people need to be employed for the project.
- Process of local employment was discussed.
- Time-frames of the project was discussed.
- Some technical detail regarding the project activities was discussed.

9. ANTICIPATED CONSTRUCTION ACTIVITIES

It is important to understand the gist of any project as to understand the possible environmental impacts associated with such a project. The following activities are generically associated with the construction phase of a bulk infrastructure project such as this. These activities are kept in mind during the environmental impact assessment process.

9.1 Construction of Water Supply Infrastructure

Bulk infrastructure projects in Karibib, as in other urban and peri-urban settings, involve a range of standardized construction activities that support the development of core public services. These activities typically begin with site preparation, which includes vegetation clearing, topsoil stripping, and land levelling to establish a suitable working platform. Earthworks also involve cut-and-fill operations and the compaction of surfaces. This is followed by excavation and trenching for the installation of underground utilities such as sewer and water lines, water mains, and stormwater drains. In areas with hard rock, controlled blasting or mechanical breaking are required.

Installation of infrastructure forms the core of such projects. This includes the placement of pipelines, cable ducts, manholes, valve boxes, and stormwater structures. Concrete works are often required for culverts, headwalls, pump stations, and foundations, while masonry is used for chamber structures or retaining walls. Where surface access is necessary, construction activities also involve the development or upgrading of roads, including gravel or bitumen surfacing, kerbing, and culvert placement.

9.2 Contractors camp establishment

A contractor's camp will be established in a suitably located and approved area. This will accommodate offices, equipment yards, and secure storage for materials and fuels. Temporary ablution facilities and solid waste containers will be provided to maintain hygiene and cleanliness. Utilities such as water,

electricity, and mobile security lighting will be connected or generated on-site. The layout of the camp will take environmental and social factors into account to avoid unnecessary disturbance.

9.3 Transport and Logistics

Throughout the construction phase, a high volume of materials—such as aggregates, pipes, fittings, cement, and reinforcing steel—will be transported to the site. Movement of heavy machinery including excavators, graders, water bowsers, and compactors will occur daily. Equipment refueling and minor servicing will be undertaken within the designated site camp, with fuel and lubricant storage managed under strict safety protocols to avoid spills or soil contamination.

9.4 Waste Management and Environmental Controls

Waste generated during construction will be sorted and managed in accordance with environmental regulations and the project's ESMP. General waste, construction debris, and hazardous materials (such as oil or chemicals) will be stored separately and removed to licensed disposal facilities. Dust suppression measures—such as regular water spraying on roads and cleared areas—will be implemented, especially during dry and windy conditions. Temporary erosion and sediment control structures, including silt fences and stormwater bunds, will be installed to prevent runoff into nearby drainage lines or sensitive areas.

9.5 Health and Safety Implementation

Worker health and safety will be prioritised through structured induction training, on-site supervision, and the mandatory use of personal protective equipment (PPE). All construction staff will be trained in emergency response procedures, including fire safety, first aid, and accident reporting. Appropriate signage, traffic control, and restricted access measures will be implemented to protect both workers and nearby residents from construction-related hazards.

9.6 Mechanical and Electrical Works

Mechanical and electrical works are integral, especially where booster stations are installed. This includes fitting of pumps, control panels, and telemetry systems. Throughout construction, environmental and social management measures are expected to be implemented, including dust suppression, erosion control, noise mitigation, and adherence to health and safety protocols. The attached ESMP describes the required mitigation measures in more detail.

9.7 Decommissioning and Site Rehabilitation

Once primary construction is completed, activities shift to backfilling, compaction, and site rehabilitation. This may include the replacement of topsoil, construction / domestic waste removal, and removal of temporary structures. These standard activities ensure that bulk infrastructure projects are not only functional but also compliant with environmental regulations and suitable for integration into urban planning frameworks.

10. ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

This Environmental Assessment (EA) was conducted in accordance with the Environmental Management Act (No. 7 of 2007) and the associated environmental Regulations (2012). The assessment also aligns with international best practice, notably the International Finance Corporation (IFC) Performance Standards and KfW's Sustainability Guidelines, as the project is donor-funded.

The process involved a site visit, baseline data review, stakeholder consultations, and the identification, prediction and evaluation of environmental and social impacts. An ESMP is also prepared for implementation during construction and operation.

10.1 Impact Assessment Methodology

The methodology followed in this Environmental Assessment (EA) integrates Namibian statutory requirements and international best practice principles. It is designed to systematically identify, predict, and evaluate the likely environmental and social effects of the proposed development, and to inform responsible decision-making.

The methodology includes the following key steps:

- Scoping: Identifying key environmental and social issues based on the project scope, site characteristics, and stakeholder input.
- Baseline Study: Reviewing existing data and conducting site visits to understand the environmental and socio-economic context.
- Impact Identification: Determining potential sources of impact from project activities during construction, operation, and decommissioning phases.
- Impact Prediction and Evaluation: Assessing the magnitude, extent, duration, and probability of potential impacts using a structured qualitative rating system. This includes the use of professional judgment and sensitivity analysis.
- Mitigation and Enhancement: Recommending practical and context-appropriate measures to prevent, reduce, or offset adverse impacts, and enhance positive ones.
- Residual Impact Assessment: Estimating the level of impact expected after mitigation measures are applied.
- Environmental and Social Management Planning: Developing management measures, monitoring protocols, and institutional responsibilities to guide project implementation.

The entire process is iterative, allowing for the refinement of assessment outputs as new information emerges during stakeholder engagement or project design updates.

The following impacts are identified considering the project activities, the baseline conditions, inputs from the public and legal frameworks as mentioned in this report:

Impact	Description	Relevant Standard/Legislation
1. Soil Erosion and Vegetation Loss	Excavation for sewer and water lines and electrical trenching may lead to localized soil erosion and loss of indigenous vegetation.	EMA 2007, IFC PS6, KfW: Biodiversity and soil protection
2. Water Pollution Risk	Improper handling during rehabilitation of oxidation ponds and sewer upgrades may lead to contamination of groundwater or surface water.	Water Resources Management Act 2013, IFC PS3, KfW: Pollution prevention
3. Dust and Air Pollution	Earthworks and construction vehicle movement may increase dust and emissions.	EMA 2007, IFC PS3, KfW: Air quality management
4. Noise Pollution	Construction activities will generate intermittent noise disturbing nearby residents.	IFC PS1 & PS4, KfW: Community health and safety
5. Waste Generation	Construction waste (pipes, rock, packaging) must be managed properly. Domestic waste will be generated and littering may result.	EMA, IFC PS3, KfW: Waste management
6. Visual/Aesthetic Impact	Construction machinery and temporary works may affect the visual landscape. Overhead electrical cables will impact on the aesthetics.	EMA 2007, IFC PS1
7. Occupational Health and Safety Risks	Workers are exposed to risks during excavation and installation.	Labour Act 2007 (Nam), IFC PS2, KfW: Worker safety
8. Community Health and Safety	Open trenches, traffic disruption, and power installations pose safety risks to the public.	IFC PS4, KfW: Community health & safety
9. Economic and Livelihood Impact (Positive)	The project facilitates plot affordability and increases land value in Usab Extension 6.	IFC PS1, KfW: Poverty reduction, inclusive development
10. Improved Sanitation and Public Health (Positive) as well as Potable water	Upgraded sewer systems reduce open defecation and disease risk. Fresh potable water will also contribute to Public Health.	IFC PS4, KfW: Public health
11. Access to Basic Services (Positive)	Bulk electricity, potable water and sewer upgrades improve service delivery.	IFC PS4, KfW: Sustainable infrastructure

Impact	Description	Relevant Standard/Legislation
12. Risk to Archaeological Resources	Excavation in undeveloped land may affect heritage resources.	National Heritage Act 2004, IFC PS8
13. Energy Demand and Emissions	Electricity provision increases energy use but may reduce reliance on unsafe alternatives.	IFC PS3, KfW: Climate and energy efficiency
14. Localised Blasting Impacts	Blasting may generate vibration, noise, and dust; potential risk to nearby infrastructure and communities if not controlled.	Explosives Act 1956, IFC PS1 & PS4, KfW: Community and environmental safety
15. Blasting-Related Ground Instability	Localised blasting may temporarily destabilize subsurface conditions, increasing risk of minor ground subsidence or slope movement.	IFC PS1, KfW: Infrastructure safety, Geotechnical guidelines
16. Blasting-Related Air Overpressure and Flyrock	Improper blasting can cause air overpressure and flyrock, posing safety risks to personnel and property.	Explosives Act 1956, IFC PS4, KfW: Public and worker safety
17. Local Employment Opportunities (Positive)	Construction phase employment benefits local residents by providing income and skills development opportunities.	IFC PS2, KfW: Inclusive employment and social development
18. Stimulation of Local Businesses (Positive)	Improved electricity infrastructure may support growth in local enterprises and small businesses.	IFC PS1 & PS4, KfW: Local economic development and access to infrastructure

10.2 Impact Significance Ratings

The significance of each impact was evaluated using the following criteria:

- Duration (short-term, medium-term, long-term, or permanent);
- Extent (site, local, regional, national);
- Intensity (low, medium, high);
- Probability (unlikely, possible, probable, definite);

Significance Score=Duration×Extent×Intensity×Probability

Table 2: Impact Rating Criteria

Rating	Duration Classification	Extent Classification	Intensity Classification	Probability Classification
1	Days–weeks	Site-specific	Negligible	Rare
2	Weeks–months	Local	Minor	Possible
3	Up to 2 years	Regional	Moderate	Likely
4	Project lifespan	National	High	Very likely
5	Beyond project life	International	Very high	Certain

SIGNIFICANCE RATING:

- 5–25: Low
- 26–50: Medium
- 51–75: High
- 76–100: Critical

The impact significance matrix below summarises the key anticipated environmental and social impacts associated with the Karibib bulk infrastructure project. Each impact is assessed by its characteristics—phase, duration, extent, intensity, and probability—and rated before and after mitigation. This format is aligned with Namibian regulatory expectations and international best practices.

Table 3: Impact significant rating table

Impact No.	Impact	Nature	Phase	Duration	Extent	Intensity	Probability	Reversibility	Rating Before Mitigation	Rating After Mitigation
1	Soil Erosion, contamination and Vegetation Loss	Negative	Construction	Short-term	Local	Medium	Likely	Reversible	Moderate	Low
2	Water Pollution Risk	Negative	Construction	Medium-term	Local	High	Possible	Partially Reversible	High	Moderate
3	Dust and Air Pollution	Negative	Construction	Short-term	Local	Low	Likely	Reversible	Moderate	Low
4	Noise Pollution	Negative	Construction	Short-term	Local	Low	Likely	Reversible	Moderate	Low
5	Waste Generation	Negative	Construction	Short-term	Local	Medium	Likely	Reversible	Moderate	Low
6	Visual/Aesthetic Impact	Negative	Construction	Short-term	Local	Low	Possible	Reversible	Low	Low
7	Occupational Health and Safety Risks	Negative	Construction	Short-term	Local	High	Likely	Partially Reversible	High	Moderate
8	Community Health and Safety	Negative	Construction	Short-term	Local	High	Possible	Partially Reversible	High	Moderate
9	Economic and Livelihood Impact	Positive	Operation	Long-term	Local	High	Certain	Not Applicable	High Positive	High Positive
10	Improved Sanitation and Public Health	Positive	Operation	Long-term	Town-wide	High	Certain	Not Applicable	High Positive	High Positive
11	Access to Basic Services	Positive	Operation	Long-term	Town-wide	High	Certain	Not Applicable	High Positive	High Positive
12	Risk to Archaeological Resources	Negative	Construction	Medium-term	Site-	Medium	Unlikely	Irreversible	Moderate	Low

					specific					
13	Energy Demand and Emissions	Negative	Operation	Long-term	Town-wide	Medium	Likely	Partially Reversible	High	Moderate
14	Localised Blasting Impacts	Negative	Construction	Short	Local	Medium	Likely	Reversible	Moderate	Low
15	Blasting-Related Ground Instability	Negative	Construction	Short	Site	High	Unlikely	Reversible	High	Low
16	Blasting-Related Air Overpressure and Flyrock	Negative	Construction	Immediate	Site	High	Possible	Partially	High	Moderate
17	Local Employment Opportunities (Positive)	Positive	Construction	Medium	Local	Medium	Likely	Reversable	High	High
18	Stimulation of Local Businesses (Positive)	Positive	Post Construction	Long	Local	Medium	Likely	Reversable	High	High

10.3 Cumulative Impact Assessment

Cumulative impacts refer to the incremental and combined effects of the proposed development when considered together with other existing or planned activities in the same geographic area. These impacts may be individually minor but collectively significant, particularly when they affect shared environmental or social receptors over time.

10.3.1 Purpose and Approach

The purpose of this assessment is to evaluate whether the proposed infrastructure activities—namely sewer and water reticulation, trunk line upgrades, oxidation pond rehabilitation, and bulk electricity provision—could contribute to broader environmental or social impacts when combined with:

- Ongoing or planned infrastructure projects by Karibib Town Council (KTC);
- Private sector developments (e.g. housing schemes, mining expansions);
- Long-term urban growth pressures in Karibib.

The assessment is based on the spatial overlap of project footprints, shared resource use, and the sensitivity of environmental and social receptors.

10.3.2 Potential Cumulative Impacts

Receptor / Component	Description of Cumulative Impact	Contributing Activities	Significance	Mitigation Recommendations
Air Quality (Dust, PM)	Elevated dust levels during multiple concurrent construction projects in Karibib could affect respiratory health.	Sewer trenching, road upgrades, housing construction	Moderate	Harmonised construction schedules; enforce dust control protocols town-wide
Surface Water & Groundwater	Potential cumulative risk of groundwater contamination from multiple informal sanitation systems during transition phase.	Delays in plot connections; unregulated pit latrines in unserviced areas	Moderate	Accelerate sanitation rollout; monitor groundwater near ponds and unconnected areas
Traffic Congestion & Safety	Increased construction vehicle movement may cause congestion, road wear, and pedestrian safety concerns.	Construction of DWN infrastructure, KTC roadworks, Navachab Mine logistics	Moderate	Develop town-level traffic management plan; enforce haul routes and speed limits
Noise Levels	Combined noise from several projects can disrupt residential areas and schools.	Sewer works, electrical installations, mining transport	Low–Moderate	Limit construction to daylight hours; notify residents in advance
Labour Influx &	Temporary influx of	Construction	Moderate	Coordinate with KTC on

Receptor / Component	Description of Cumulative Impact	Contributing Activities	Significance	Mitigation Recommendations
Social Pressure	labourers for multiple projects may strain local housing, sanitation, and public services.	workforce from various contractors		worker accommodation and sanitation; implement a worker code of conduct
Biodiversity Pressure	Repeated vegetation clearing for different projects may lead to habitat fragmentation and bush encroachment.	Trenching for sewer lines, road projects, residential expansions	Moderate	Require vegetation re-establishment post-construction; coordinate clearing across departments

10.3.3 Assessment Summary

While the proposed infrastructure works are relatively small in scale, their overlap with other urban development activities in Karibib introduces moderate cumulative risks—particularly in terms of air quality, groundwater contamination, community safety, and ecological pressure.

Most of these risks are manageable through:

- Inter-agency coordination (e.g. between DWN, KTC, private developers);
- Joint scheduling of construction works to reduce peak impacts;
- Standardized mitigation protocols and information sharing.

10.3.4 Recommendation

It is recommended that:

- A Karibib-wide infrastructure coordination forum be established for ongoing project alignment;
- Monitoring data (e.g., dust levels, groundwater quality) be shared between project proponents and the Karibib Town Council;
- The ESMP be updated periodically to reflect new risks from overlapping developments.

11. ANALYSIS OF ALTERNATIVES

This section evaluates potential alternatives to the proposed infrastructure development project in Karibib, including technological, site, design, implementation, and the "no-go" option. The assessment is undertaken in line with the requirements of the Environmental Management Act (2007), IFC Performance Standards, and KfW Sustainability Guidelines.

11.1 Site Alternatives

Alternative Locations for Sewer Infrastructure or Oxidation Ponds:

- The oxidation ponds are already established; relocation would involve significant costs, re-zoning, and technical re-integration into the town's sewer system.
- Alternative locations may pose greater environmental and social risks (e.g., closer proximity to residential areas or sensitive groundwater zones).

Conclusion: Not viable due to engineering and cost limitations.

11.2 Technology Alternatives

Sanitation Options:

- Dry Sanitation (e.g., VIP latrines): Lower cost but unsuitable for urban density and long-term development.
- DEWATS (Decentralized Wastewater Treatment Systems): Environmentally sustainable but capital intensive and maintenance-heavy.
- Conventional Waterborne Sewer: Preferred for compatibility with urban development and hygiene.

Conclusion: Conventional waterborne sewer is the most appropriate solution.

Electricity Supply Technologies:

- Solar Mini-Grids or Hybrids: Environmentally beneficial but technically limited for bulk supply.
- Grid Extension (Current Plan): Scalable, cost-effective, and managed by ErongoRED.

Conclusion: Grid extension remains most feasible.

11.3 Design and Layout Alternatives

- Minor route realignments for sewer and electricity lines can reduce costs, avoid sensitive features, or ease construction.
- Layout optimization is expected as part of the detailed design phase.

Conclusion: Viable and should be incorporated during final design.

11.4 No-Go Alternative

This option assumes that the infrastructure upgrades and servicing are not implemented.

Implications:

- Sanitation: Increases in disease and environmental contamination due to lack of proper sewage handling.
- Potable water: The absense of potable water will impact negatively on community health.
- Electricity: Continued reliance on informal or unsafe electricity sources.
- Urban Development: Stagnation of plot sales and delayed service delivery.
- Socio-Economic: Loss of local employment, increased poverty, and unrealized development potential.

Conclusion: The no-go option would result in significantly negative social and public health outcomes and is not recommended unless overriding environmental risks are discovered.

Recommendation: The preferred alternative remains the implementation of the proposed project with optimized design alignments and standard waterborne sewer, water and grid electricity systems, subject to environmental management and mitigation.

12. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The Environmental and Social Management Program (ESMP) will be implemented during construction. The ESMP is intended to bridge the gap between the Environmental Impact Assessment (EIA) and the implementation of the project, particularly with regard to implementing the mitigation measures recommended in the Environmental Impact Assessment (EIA). Monitoring, auditing and taking corrective actions during implementation are crucial interventions to successfully implant the ESMP.

The ESMP detail actions to ensure compliance with regulatory bodies and that environmental performance is verified through information on impacts as they occur.

ESMP implementation is a cyclical process that converts mitigation measures into actions and through cyclical monitoring, auditing, review and corrective action, ensures conformance with stated ESMP aims and objectives. Through monitoring and auditing, feedback for continual improvement in environmental performance must be provided and corrective action taken to ensure that the ESMP remains effective.

12.1 ESMP Administration

Copies of the ESMP shall be kept at the site office and will be distributed to all senior contract personnel. All senior personnel shall be required to familiarize themselves with the contents of this document.

12.2 Roles and Responsibilities

The implementation of the ESMP requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during each phase.

Engineer's Representative (ER)

The Project Engineer (SMEC) will delegate powers to the Engineer's Representative (ER) on site who would act as the Employer's implementing agent and has the responsibility to ensure that the Employer's responsibilities are executed in compliance with relevant legislation and the ESMP. The Engineer also has the responsibility to approve the appointment of the Environmental Control Officer (ECO).

Any on-site decisions regarding environmental management are ultimately the responsibility of the ER. The ER will have the following responsibilities in terms of the implementation of this ESMP:

- Controlling that the necessary environmental authorizations and permits have been obtained by the Contractor.
- Assisting the Contractor in finding environmentally responsible solutions to problems with input from the ECO (Environmental Control Officer) where necessary.
- Taking appropriate action if the specifications are not followed.
- Ordering the removal of person(s) and/or equipment not complying with the ESMP specifications.
- Recommending and issuing fines for transgressions of site rules and penalties for contravention of the ESMP.
- Advising on the removal of person(s) and/or equipment not complying with the specifications.
- Auditing the implementation of the ESMP and compliance with authorization on a monthly basis.
- Undertaking a continual review of the ESMP and recommending additions and/or changes to the document after completion of the contract.

Environmental Control Officer (ECO)

The Environmental Control Officer (ECO) will be a competent person from the staff of Contractor to implement the on-site environmental management of this ESMP by the Contractor. The ECO shall be on site daily and the ECO's duties will include the following:

- Assisting the ER in ensuring that the necessary environmental authorizations and permits have been obtained.

- Maintaining open and direct lines of communication between the ER, Employer, Contractor and interested and affected parties (I&APs) with regard to environmental matters.
- Convening and facilitating public meetings.
- Regular site inspections of all construction areas with regard to compliance with the ESMP.
- Monitoring and verifying adherence to the ESMP, monitoring and verifying that environmental impacts are kept to a minimum.
- Assisting the Contractor in finding environmentally responsible solutions to problems.
- Monitoring the undertaking by the Contractor of environmental awareness training for all new personnel coming onto site.

12.3 Environmental Awareness Training

Before any work is commenced on the Site, the Contractor shall ensure that adequate environmental awareness training of senior site personnel takes place and that all construction workers receive an induction presentation on the importance and implications of the ESMP. The Contractor shall liaise with the Engineer during establishment phase to fix a date and venue for the training and to agree on the training content.

The Contractor shall provide a suitable venue and ensure that the specified employees attend the course. The Contractor shall ensure that all attendees sign an attendance register, and shall provide the ER with a copy of the attendance register. The presentation shall be conducted, as far as is possible, in the employees' language of choice.

As a minimum, training should include:

- Explanation of the importance of complying with the ESMP.
- Discussion of the potential environmental impacts of construction activities.
- The benefits of improved personal performance.
- Employees' roles and responsibilities, including emergency preparedness.
- Explanation of the mitigation measures that must be implemented when carrying out their activities.
- Explanation of the specifics of this ESMP and its specification (no-go areas, etc.)

- Explanation of the management structure of individuals responsible for matters pertaining to the ESMP.
- The contractor shall keep records of all environmental training sessions, including names, dates and the information presented.

12.4 Public Participation

An on-going process of public participation shall be maintained during construction to ensure the continued involvement of interested and affected parties (I&APs) in a meaningful way. Public meetings to discuss progress and any construction issues that may arise shall be held at least every two months and more regularly if deemed necessary by the ER. These meetings shall be arranged by the ECO but shall be facilitated by the ER. The Contractor shall present a progress report at each public meeting. All I&APs that participated in or were informed during the EIA shall be invited to each of the public meetings.

12.5 Mitigation Measures

This section outlines the proposed mitigation measures aimed at avoiding, minimizing, or offsetting the potential negative environmental and social impacts associated with the DWN infrastructure projects in Karibib. Each measure is linked to a specific identified impact and includes actions to be implemented primarily during the construction and operational phases. The effectiveness of these measures is critical to ensuring that the project remains compliant with national and international environmental and social safeguards, while also enhancing the long-term sustainability and community acceptance of the development.

Key Components and Mitigation Measures

Component	Mitigation Measures	Responsible Party	Monitoring Indicator
Vegetation Clearing	Restrict clearance to surveyed and demarcated areas only. Preserve indigenous and protected species where possible. Do not clear vegetation more than two months in advance of operations Implement progressive clearing and immediate backfilling where applicable.	Contractor / ECO	Site inspection reports; photographic records; rehabilitation completion certificates
Dust Control	Apply water spray at all active construction areas and unpaved roads. Minimise drop heights for materials. Use dust screens near sensitive receptors (e.g. houses, clinics). Avoid excessive speed on haul roads (restrict to 30km/h).	Contractor	Visual inspections; community feedback logs (complaint register with grievance redess mechanism).
Noise Management	Limit noisy activities to between 07:00–18:00. Maintain and service construction machinery regularly. Provide advance notice to communities before high-noise activities. Use silencers/mufflers on generators and compressors. Make sure that noise levels don't exceed 80db in case of equipment or vehicle use.	Contractor / ECO	Noise level meter readings; incident reports; grievance redress mechanism
Soil Erosion	Schedule construction to avoid rainy season where possible. Stabilise stockpiles with coverings. Construct diversion channels, silt traps, and sediment fences around earthworks. Backfill trenches within the quickest possible time. Ensure that topsoil is stripped and stored	Contractor	Slope stability records; erosion features monitored; drainage inspections

Component	Mitigation Measures	Responsible Party	Monitoring Indicator
	properly. Topsoil should not be mixed with subsoil. Topsoil stockpile to be protected from erosion.		
Water Use	Source water from municipal supply where feasible. Apply for abstraction permits where groundwater is needed. Install flow meters on pumps and regularly inspect for leaks (during construction - to determine usage and intercept leaks). Avoid water wastage through efficient usage.	Contractor / KTC	Daily consumption records; valid permits; flow meter readings and records
Water and Soil Pollution Risk	Ensure sealed manholes and proper pond linings. Conduct regular maintenance on machines and storage facilities. Establish emergency response for spills. Align with Water Resources Management Act, IFC PS3. Appropriate and safe storage of fuels, construction materials, wastes and any materials that can cause spills (e.g. batteries from energy generators).	Contractor	Daily inspection records and spill logs.
Waste Management	The Contractor shall develop a Waste Management Plan (WMP) in line with local and international best practices. Separate recyclable, hazardous, and general waste at source. Store waste in clearly labelled containers. Schedule regular removal to licensed disposal or recycling facilities. Prohibit open burning and illegal dumping. Prevent littering by worker awareness.	Contractor	Waste transfer records; ECO audits Toolbox talks

Component	Mitigation Measures	Responsible Party	Monitoring Indicator
Visual Impact	Use screening and buffers to hide temporary infrastructure. Rehabilitate disturbed areas post-construction. Address in line with IFC PS1 and local planning policies.	Contractor	Visual inspections and reporting.
Health and Safety	Establish and enforce a comprehensive Health and Safety Plan. Comply with the Labour Act, 2007 dealing with health and safety which are Sections 39 to 41 under Chapter 4. Conduct risk assessments prior to each task. Provide and maintain adequate PPE for all personnel. Conduct routine toolbox talks and emergency response drills. Ensure availability of trained first aiders and stocked first aid kits on-site. Install visible hazard signage. Ensure all H&S related incidents (e.g. observations, accidents) on site are recorded and followed up properly. Ensure minimum first aid provisions on site (suitably stocked first-aid kits; a person, respectively an adequate number of first-aid helpers and ensure that staff and workers are informed about first-aid arrangements)	Contractor	Safety incident records; attendance logs
Community health and safety	Fence off hazardous areas, use traffic signage, provide community awareness and emergency response plan. Align with IFC PS4, KfW community safety protocols.	Contractor	HSE checklist on a daily basis.
Economic and Livelyhood	Include clauses in tender documents requiring local hiring. Set minimum targets for local labour engagement. Publicly post job openings within the	Contractor / KTC	Employment registers; grievance log

Component	Mitigation Measures	Responsible Party	Monitoring Indicator
	community. Ensure equal opportunity and fair treatment as required by the Namibian Labour Law. Conduct skills development sessions to enhance employability.		
Improved Sanitation and Public Health	Maintain functional sewerage systems, promote hygiene awareness, monitor health indicators. Aligns with IFC PS4 public health goals.	Karibib TC	Monthly monitoring
Construction Traffic	Establish designated haul routes; avoid school and pedestrian zones. Implement speed limits and traffic signage (30km/h). Assign flag people at road crossings used by construction vehicles.	Contractor / ECO	Traffic incident records; signage audits; grievance redress mechanism – monthly reporting
Increased Workforce Presence	Provide adequate site facilities (toilets, mobile toilets, water, shelter); enforce strict code of conduct. Implement community interaction protocols and awareness training. This includes a Community Liason Officer (CLO) from the contractor.	Contractor / KTC	Worker conduct logs; grievance redress mechanism; facility inspection reports – monthly reporting
Risk to Archaeological Resources	Halt work if artifacts are found, engage National Heritage Council. Comply with Heritage Act and IFC PS8.	Contractor	Immediate reporting to the ER and contact the Heritage Council of Namibia.
Soil Contamination	Store hazardous materials on bunded surfaces; provide drip trays for stationary equipment; train workers in spill response. Monitor for leaks or accidental releases. And visual inspections of high risk areas.	Contractor / ECO	Spill log; hazardous storage inspections; incident reports – ad hoc
Localised Blasting Impacts	Conduct risk assessment before blasting. Notify communities by using notification boards and local meadia at leat 7 days	Contractor, Blasting Subcontractor	Vibration data; blast logs; community feedback

	before commencement. Use controlled blasting techniques. Schedule blasting during low-activity times.		
Blasting-Related Air Overpressure and Flyrock	Maintain safety buffers as per Blasting contractor specifications. Use blast mats where applicable. Brief all staff, evacuate nearby personnel and coordinate with regulators.	Contractor, Blasting Subcontractor	Incident reports; buffer zone adherence.
Local Employment Opportunities (Positive)	Recruit from Karibib and surrounding areas; advertise positions locally; monitor labour records.	DWN, Contractor	% Local hires; training provided – monthly feedback.
Stimulation of Local Businesses (Positive)	Prioritise local procurement; include SMEs in contracts; track expenditure on local services.	DWN, Contractor	Local supplier expenditure; SME participation – monthly feedback.

Appendix A at the end of this document has an Action Table and"To-Do" and "Not – To – Do" list which form part of this ESMP and the measures should be implemented as such.

12.6 Non-Compliance

A) Procedures

The Contractor shall comply with the environmental and social specifications and requirements on an on-going basis and any failure on his part to do so will entitle the ER to impose a penalty. In the event of non-compliance the following recommended process shall be followed:

- The ER shall issue a notice of non-compliance to the Contractor through the ECO, stating the nature and magnitude of the contravention.
- The Contractor shall act to correct the non-conformance within 24 hours of receipt of the notice, or within a period that may be specified within the notice.
- The Contractor, through the ECO, shall provide the ER with a written statement describing the actions to be taken to discontinue the non-conformance, the actions taken to mitigate its effects and the expected results of the actions.
- In the case of the Contractor failing to remedy the situation within the predetermined time frame, the Engineer shall impose a monetary penalty based on the conditions of contract.
- In the case of non-compliance giving rise to physical environmental damage or destruction, the Engineer shall be entitled to undertake or to cause to be undertaken such remedial works as may be required to make good such damage and to recover from the Contractor the full costs incurred in doing so.
- In the event of a dispute, difference of opinion, etc. between any parties with regard to or arising out of interpretation of the conditions of the ESMP, disagreement regarding the implementation or method of implementation of conditions of the ESMP, etc. any party shall be entitled to require that the issue be referred to specialists for determination.
- The Engineer shall at all times have the right to stop work and/or certain activities on site in the case of non-compliance or failure to implement remedial measures.

B) Offenses and Penalties

Where the Contractor inflicts non-repairable damage upon the environment or fails to comply with any of the environmental specifications, he shall be liable to pay a penalty fine over and above any other contractual consequence.

The Contractor is deemed NOT to have complied with this Specification if:

a. within the boundaries of the site, site extensions and haul/access roads there is evidence of contravention of the Specification;

b. environmental or human damage due to negligence;

c. the Contractor fails to comply with corrective or other instructions issued by the ER within a specific time;

d. the Contractor fails to respond adequately to complaints from the public.

Penalties for the activities detailed below, will be imposed by the ER on the Contractor and/or his Subcontractors:

a.	Actions leading to erosion	A penalty equivalent in value to the cost of rehabilitation plus 20%
b.	Oil spills	A penalty equivalent in value to the cost of clean-up operation plus a N$ 3000 fine per occurance.
c.	Damage to indigenous vegetation	A penalty equivalent in value to the cost of restoration plus N$ 15 000
d.	Damage to sensitive environments	A penalty equivalent in value to the cost of restoration plus N$ 15 000
e.	Damage to cultural sites	A penalty to a maximum of N$100 000 shall be paid for any damage to any cultural/ historical sites
f.	Damage to trees	A penalty to a maximum of N$15 000 shall be paid for each tree removed without prior permission, or a maximum of N$5 000 for damage to any tree, which is to be retained on site.
g.	Damage to natural fauna	A penalty to a maximum of N$15 000 for damages to any natural occurring animals.
h.	Any persons, vehicles, plant, or thing related to the Contractors operations within the designated boundaries of a "no-go" area	N$5,000
j.	Litter on site	N$5,000
k.	Deliberate lighting of illegal fires on site	N$ 5,000
l.	Any person, vehicle, item of plant, or anything related to the Contractors	N$5,000

operations causing a public nuisance

m. Sewage leaks from any toilet or sewage drain /tank - N$10,000

- Penalties may be issued per incident at the discretion of the Engineer. The Engineer will inform the Contractor of the contravention and the amount of the fine, and will deduct the amount from monies due under the Contract.
- For each subsequent similar offense the fine may, at the discretion of the ER, be doubled in value to a maximum value of N$10, 000.
- Payment of any fines in terms of the contract shall not absolve the offender from being liable from prosecution in terms of any law.
- In the case of a dispute in terms of this section, the Engineer shall determine as to what constitutes a transgression in terms of this document.

12.7 Grievance Mechanisms and Processes

A grievance is a concern or complaint raised by an individual or a group within communities affected by activities related to the operations of an organization. Such impacts could be from activities on implementation of a particular project by public or private entity. A grievance is raised because of the uncomfortable and unacceptable state perceived will occur or actual by an Individual or group or a community, result of an introduced event to a particular area.

A grievance mechanism is described as a project instrument that aims to give stakeholders or interested and affected parties (I&APs) the right to report all project-related inadequacies, the right to denounce any kind of human rights violation or detrimental event of the project and to request redress or cessation of the detrimental event.

The instrument when implemented allows resolving grievances of affected individuals or communities at earliest localized level or within project's immediate domain, preventing escalation to unmanageable levels. This will resultantly benefit the aggrieved parties and the proposed project implementors.

The Contractor shall draft such a document indicating the process towards seeking redressal of grievances at different scales of operation. The following is a framework for such a document:

Table 4: Grievance Regress Nethodology

Step	Action	Responsibility
1	**Grievance Submission** – Complaints can be submitted verbally, in writing, or anonymously.	Community member / IAP
2	**Grievance Logging** – All grievances are entered into a formal grievance register.	Environmental Control Officer
3	**Acknowledgement** – Grievance receipt is acknowledged within 5 working days.	Environmental Control Officer
4	**Assessment & Investigation** – Complaint is reviewed, investigated, and solution proposed.	Project Management / ECO
5	**Resolution & Response** – Response is communicated to the complainant within 15 working days.	Project Manager / DWN
6	**Closure & Documentation** – If resolved, grievance is closed with written confirmation.	ECO / Grievance Committee
7	**Escalation** – If not resolved, grievance is referred to the Karibib Town Council or MEFT.	Grievance Committee

- Grievances can be submitted at on-site complaint boxes, municipal offices, DWN offices or via email/telephone;
- The process will accommodate illiterate, elderly, and marginalized persons through oral submissions;
- All information related to the GRS will be made available in local languages (e.g. Afrikaans, Damara/Nama).

It is important to note that the **GRIEVANCE REDRESS MECHANISM (GRM) (2023-2025)** is attached as Appendix C of this report and shall be used by the contractor as guideline for implementing the mechanism.

12.8 Environmental Auditing

Environmental audits should be conducted at least once every three months during construction. Benefits derived from the audit process might include:

- identification of environmental risk;
- development or improvement of the environmental management system;
- avoidance of financial loss;

- avoidance of legal sanctions;
- increase in staff awareness;
- identify potential cost savings;
- improve dealings with employees, environmental groups, the community, regulators, media, shareholders, or insurance & finance institutions; and
- establish a history of environmentally responsible operations, e.g. through environmental incident reports, environmental monitoring & recording, & reporting to committees or Authorities.

Commonly, the environmental audit of a site will cover all management procedures, operational activities & systems, and environmental issues. The environmental audit will be compiled objectively and be conducted by an independent, competent entity.

12.9 Monitoring Obligations and Cost Overview

In line with Namibian environmental legislation (Environmental Management Act, 2007), as well as international best practices prescribed under the IFC Performance Standards and KfW Sustainability Guidelines, an Environmental and Social Monitoring Plan (ESMP) has been developed for the DWN infrastructure projects in Karibib.

The purpose of this monitoring plan is to ensure that all identified impacts are systematically tracked, that mitigation measures are effectively implemented, and that any deviations or non-compliance can be addressed in a timely and cost-effective manner. Monitoring also provides a basis for adaptive management and continuous improvement throughout the project lifecycle. Each impact is associated with specific monitoring actions, assigned responsibilities, and a recommended frequency. Monitoring activities will be overseen by the Environmental Control Officer (ECO) in collaboration with contractors, Karibib Town Council, DWN and relevant technical personnel. The plan includes routine site inspections, environmental audits, stakeholder feedback mechanisms, and reporting obligations.

It is imperative that the contractor are aware of the cost associated with the implementation of this monitoring plan. These costs cover labour, equipment, audits, reporting, and capacity support to ensure environmental and social compliance across all five infrastructure components. The following table summarises some of the meassures that require a cost estimation and the contractor shall take into account these costs during the bidding phase:

Table 5: Monitoring Cost Framework

Impact No.	Impact	Monitoring Actions	Frequency	Responsible Party	Estimated Annual Cost (N$)
1	Soil Erosion and Vegetation Loss	Weekly inspection of disturbed areas; ensure rehabilitation and erosion controls are in place.	Weekly	Contractor / Environmental Control Officer (ECO)	
2	Water Pollution Risk	Monthly inspection of pond integrity, manholes, and potential leaks/spills.	Monthly	ECO / Municipal Engineer	
3	Dust and Air Pollution	Daily visual inspections for dust; verify use of water spray and equipment maintenance.	Daily	Contractor / Site Supervisor	

4	Noise Pollution	Monitor noise levels during construction; ensure compliance with permitted hours.	Weekly	Contractor / ECO		
5	Waste Generation	Track volume and disposal records of construction waste weekly; inspect waste storage areas.	Weekly	Contractor / ECO		
6	Visual/Aesthetic Impact	Photographic records before and after construction; community feedback surveys.	Monthly	ECO / Design Consultant		
7	Occupational Health and Safety Risks	Daily safety briefings; weekly audits of PPE use, trench supports, and signage.	Weekly	Contractor / Safety Officer		
8	Community Health and Safety	Weekly inspection of fencing, signage; document public complaints and incidents.	Weekly	Contractor / ECO		
9	Economic and Livelihood Impact	Quarterly review of job creation and local labour use; maintain employment records.	Quarterly	DWN / Town Council		
10	Improved Sanitation and Public Health	Monthly checks of sanitation functionality; liaise with local clinics on public health trends.	Monthly	DWN / Health Inspector		
11	Access to Basic Services	Monthly progress reports on service installation and connection rates.	Monthly	Contractor / DWN		
13	Risk to Archaeological Resources	Archaeological watching brief during excavation; immediate halt on discovery.	During excavation	Contractor / Heritage Monitor		
	Job creation for local unskilled labour	Hire locally and ensure fair labor practices.	Before commencement	Construction phase		
	Skills development and training	Provide onsite training and promote skill development.	Before commencement	Construction phase		
				Total Annual Cost	**XXXXX**	

13. CONCLUSION AND RECOMMENDATIONS

The proposed infrastructure development project in Karibib, encompassing sewer and water reticulation, bulk sewer upgrades, rehabilitation of oxidation ponds, and the installation of bulk electricity infrastructure, presents a clear and well-justified response to the town's pressing service delivery and urban development challenges.

The environmental and social assessment has identified several potential negative impacts, including temporary soil erosion, dust generation, noise, waste generation, and safety risks to both workers and the surrounding community. However, these impacts are generally localized, short-term, and manageable with well-defined mitigation measures aligned with national legislation and international standards such as the IFC Performance Standards and KfW Sustainability Guidelines. After implementation of these mitigation measures, the residual impacts are expected to be of low to medium significance.

Conversely, the project presents several significant long-term positive impacts, including improved sanitation and public health, safer and more reliable electricity supply, increased affordability of serviced land for low-income households, and enhanced urban planning capacity. These benefits strongly support Namibia's Vision 2030, the Harambee Prosperity Plan, and local development goals of the Karibib Town Council.

Importantly, the "no-go" alternative was considered and found to be environmentally and socially less desirable, as it would perpetuate existing service delivery backlogs, health vulnerabilities, and urban

inequities. The preferred project alternative—carefully designed and situated within existing townland boundaries—offers a practical and sustainable solution with minimal ecological disruption.

Given the net positive social and environmental outcomes, and the feasibility of proposed mitigation measures and monitoring efforts, it is recommended that the project proceed subject to the following conditions:

- Implementation of the Environmental and Social Management Plan (ESMP) and Monitoring Plan in full;
- The Contractor appoint a qualified Environmental Control Officer (ECO) to oversee compliance;
- Ongoing stakeholder engagement to ensure transparency, especially with affected residents;
- Timely application for and approval of an Environmental Clearance Certificate (ECC) under the EMA.

In conclusion, the Environmental Assessment Scoping Report finds that the proposed project is environmentally acceptable and socially beneficial, provided that the mitigation and monitoring measures outlined in this report are fully implemented and that environmental management remains an ongoing priority during the life of the project. It is recommended that the Ministry of Environment, Forestry and Tourism (MEFT) grant an Environmental Clearance Certificate (ECC), subject to strict adherence to the approved ESMP and the continued involvement of stakeholders through public consultation and grievance redress mechanisms.

14. REFERENCES

- AQI.in. (2024). Air Quality Index (AQI) for Karibib, Namibia. Retrieved April 30, 2025, from https://www.aqi.in/dashboard/namibia
- Atlas of Namibia. (n.d.). Namibian Soils and Agriculture. Retrieved from https://atlasofnamibia.online/chapter-5/namibian-soils-and-agriculture
- Christelis, G., & Struckmeier, W. (2001). Groundwater in Namibia: An explanation to the Hydrogeological Map. Ministry of Agriculture, Water and Rural Development.
- City-Facts. (2024). Karibib Population Characteristics. Retrieved from https://www.city-facts.com/karibib/population
- CityPopulation.de. (2024). Karibib Constituency Population Data. Retrieved from https://www.citypopulation.de/en/namibia/admin/erongo/09KA__karibib/
- De Klerk, J. N. (2004). Bush Encroachment in Namibia: Report on Phase 1 of the Bush Encroachment Research, Monitoring and Management Project. Ministry of Environment and Tourism.
- DFC. (n.d.). ESIA Report for Karibib Lithium Project. Retrieved from https://www3.dfc.gov/environment/eia/karibib/ESIA_Mine_Site.pdf
- DFC. (n.d.). Vertebrate Fauna and Flora Associated with the Karibib Project Helikon. Retrieved from https://www3.dfc.gov/environment/eia/karibib/Updated_Fauna_Flora_Report.pdf
- eBird. (n.d.). Bird List - Karibib (town), Erongo, Namibia. Retrieved from https://ebird.org/region/L4587865/bird-list
- ERC. (2024). Namibia Agriculture and Livelihoods. Retrieved from https://www.erc.com.na/economy/agriculture/
- Giess, W. (1998). A preliminary vegetation map of Namibia. Dinteria 4: 1–112.
- GIZ. (2022). Innovations in Namibian Agriculture. Retrieved from https://www.giz.de/en/downloads/giz2022-en-namibia-agriculture.pdf
- IFC. (2012). *Performance Standards on Environmental and Social Sustainability*. International Finance Corporation.
- iNaturalist. (n.d.). Karibib Check List. Retrieved from https://uk.inaturalist.org/check_lists/19709-Karibib-Check-List
- Kinahan, J. (2001). *Pastoral Nomads of the Central Namib Desert: The People History Forgot*. Namibia Archaeological Trust.
- Mendelsohn, J., Jarvis, A., Roberts, C., & Robertson, T. (2002). Atlas of Namibia: A Portrait of the Land and its People. David Philip Publishers.
- Namibia Meteorological Service. (2020). Climate Data and Annual Reports. Windhoek, Namibia.
- Namibia Statistics Agency (NSA). (2024). Census Regional Profiles: Erongo Region. Retrieved from https://nsa.org.na

- National Heritage Council (NHC). (2024). *Heritage Protection Guidelines and Reporting Protocols*. Windhoek: Ministry of Education, Arts and Culture.
- Osino Resources Corp. (2019). Technical Report for the Karibib Gold Project in Namibia. Retrieved from https://osinoresources.com/wp-content/uploads/2021/06/20191015_Osino-Technical-Report.pdf
- Swakoppoort Dam. (2025). In Wikipedia. Retrieved April 30, 2025, from https://en.wikipedia.org/wiki/Swakoppoort_Dam
- Topographic-Map.com. (2024). Elevation Map of Karibib, Namibia. Retrieved from https://en-gb.topographic-map.com/map-4zzg1h/Karibib/
- WeatherSpark. (2024). Average Weather in Karibib, Namibia Year Round. Retrieved April 30, 2025, from https://weatherspark.com/y/78286/Average-Weather-in-Karibib-Namibia-Year-Round
- Wikipedia. (2024). Karibib. Retrieved from https://en.wikipedia.org/wiki/Karibib
- Wikipedia. (2024). Navachab Gold Mine. Retrieved from https://en.wikipedia.org/wiki/Navachab_Gold_Mine

15. APPENDIX A

THE ESMP CHECKLIST AND THE “TO DO” LIST AS PART OF THE ESMP

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN CHECKLIST

This document outlines the key elements of an Environmental and Social Management Plan (ESMP) Action Table, capturing the mitigation measures that need to be implemented in the context of the Project activities. The ESMP includes measures derived from the KfW standard bidding documents

Development Workshop Namibia (DWN) together with the contractor - shall use this template as guidance and amend it to the Project specifications, characteristics and risks as identified through the Site Assessment Tool. The ESMP Actions Table The ESMP Actions Table is structured as follows:

A – General requirements for ESHS Management,
B – Protection of Environment
C – Workers Health & Safety
D – Labour and Relations with Local Communities

This ESMP Action Table shall complement the **ESMP Report** prepared for the Project. The “Do and Don’t Table” (Appendix 1) provides guidance on general best practices to be used during (construction) works. These recommendations are to be used regardless of the content of the ESMP.

This checklist is a working document and should be reviewed / updated as required.

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
A: General Requirements for ESHS Management				
A1[1]. Responsibilities and Liabilities[2]	Ensure that all workers, suppliers and possible subcontractors are familiar and comply with the ESHS requirements and specifications of this ESMP.	Induction training performed and recorded for new and temporary employees. Contracts with subcontractors and suppliers	Contractor DWN	Review of induction / training records Review of Contracts to ensure that Project requirements are included
A4. Resources allocated to ESHS Management	Assign ESHS responsible staff[3] and define the requirements and responsibilities. Define person(s) responsible for contact with stakeholders (Relations officer or Community Liaison officer)	Document assigned responsibilities. Inform the relevant authorities/stakeholders about the ESHS responsible staff.	Contractor/ DWN	Review assignment of ESHS responsibilities. Records of notification to stakeholders
A6. Reporting	Reporting of progress and incidents, accidents, observations, near misses. These reports be submitted monthly to DW and included non-complience summaries.	Final Project-specific ESMP (note monitoring and reporting requirements) Records of ESHS and incident reporting	Contractor/ DWN	Review E&S Monitoring Checklist E&S audits
A7. Code of Conduct	Establish a Code of Conduct taking into consideration legislation, safety rules, substance abuse, environmental sensitivity, communicable diseases, gender issues (sexual harassment), respect for local beliefs and customs, community interactions etc.	Code of Conduct in place and rules shared with personnel. COC activities shall form part of the "Toolbox Talks" topics and recorded in the Environmental File.	Contractor/ DWN	Review of Code of Conduct induction records Review of reported punishable or misconduct behaviour Review of grievance records

[1] Numbering is not continuous because it refers to the items of KfW standard bidding documents

[2] Reminder: Bold and underlined ESMP items are always to be considered, regardless of the results of the Site Assessment.

[3] Note: in many legislations an ESHS manager is required on sites employing 50 workers or more

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
A: General Requirements for ESHS Management				
A8. ESHS Training	Provide induction and training and awareness to the workforce regarding ESHS risks and mitigation measures (including indirect workers) tailored to Project scope. Refer to Section 12.3 of the Environmental Assessment Report. **ESHS Training**: Include **refreshers every 6 months** and note that training must be documented with attendance registers.	Training performed and recorded Attendance registers	Contractor/ DWN	Review of ESHS induction and training records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
B. Protection of the Environment				
B10. Protection of adjacent areas	Ensure to keep the buffer distances from permanent water course and outside of floodable areas; sensitive urban services and buildings (health centre, school, water supply for populations); any housing;	Marking the borders of works site boundaries in line with given limits and usage of warning signs	Contractor/ DWN	Site inspection prior to commencement of activities.
	Ensure that work site boundaries and limits are in accordance with plans agreed upon in advance. All construction activities should be carried out within boundaries.	Marking the borders of works site boundaries and usage of warning signs	Contractor/ DWN	Site inspection prior to commencement of activities.

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
B. Protection of the Environment				
	Ensure that means of protection are in place to avoid or minimise adverse effects on vegetation, soils, groundwater and surface water, biodiversity, natural drainage and the water quality in areas within the works area. Construction methods to minimise impacts to the extent possible.	No impacts identified in the adjacent environment	Contractor/ DWN	Site assessment prior to site selection. Site inspection prior to commencement of activities. Regular monitoring of adjacent natural resources.
	Protect excavation works with cut off ditches to prevent water from entering excavations.	No water entering excavations	Contractor/ DWN	Site inspection
	Restrict excavation activities during periods of intense rainfall. Use temporary bunding to reduce the risk of sediment, oil or chemical spills to the receiving waters.	No excavation during intense rainfall	Contractor/ DWN	Check weather forecast and inspect the site conditions prior to excavation.
	Minimise visual impacts by good house-keeping and erecting screens if required	Visual inspection and comparison with adjacent undisturbed areas.	Contractor/ DWN	Site inspection
	After construction, form reshaped land so that it is inherently stable, adequately drained and suitable for the desired long-term land use and allows natural regeneration of vegetation	Visual inspection and comparison with adjacent undisturbed areas.	Contractor/ DWN	Site inspection at completion
B11. Selection of borrow areas, backfill material stockpile sites and access road	Select areas to be excavated, backfill material stockpile locations and access roads if applicable to the project.	Designated areas selected	Contractor/ DWN	Once during site selection
	Locate stockpile areas in areas where trees can act as buffers to prevent dust pollution	Designated areas selected	Contractor/ DWN	Once during site selection
	Deposit any excess material in areas approved by local authorities	Designated areas selected	Contractor/ DWN	Once during site selection

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
B. Protection of the Environment				
	Locate disposal site on low value land.	Designated areas selected	Contractor/ DWN	Once during site selection
B12. Pollution prevention	Ensure all works carried out minimise pollution risk (e.g. liquid effluents, air emissions, noise and vibration management, vehicle and equipment maintenance and selection, fuel, oil and chemical storage and handling) including the whole duration of the Project. Monitor for leaks or accidental releases.	Ensure that potential pollutants are not stored and handled within 50 m of sensitive receptors (particularly watercourses). Visual inspections is required to identify leaks	Contractor/ DWN	Regular site inspection Review of grievance records
B13. Effluents	Ensure appropriate containment and storage of construction wastewater, including sanitary water. No untreated effluent is discharged. Maintain functional sewerage systems, promote hygiene awareness, monitor health indicators. Aligns with IFC PS4 public health goals.	No untreated wastewater discharge Documentation and control measures of disposed sewage	Contractor/ DWN Contractor/ DWN	Regular site inspection Review of grievance records Review disposal records
B14. Emissions and dust	Use to the extent possible, vehicles in appropriate technical conditions. Provide emissions control equipment where applicable (e.g. filters).	Technical Specification Sheet	Contractor/ DWN	Prior to commencement of works and each time new equipment/vehicle is used at the site. Review of grievance records Visual inspection on regular basis
	Use low sulphur content fuels, in line with legal provisions in force as well as local availability.	Technical Specification Sheet	Contractor/ DWN	Regular documentation inspection
	Ensure vehicles are switched off when not in use.	Engines switched off	Contractor/ DWN	Driver training Regular site inspection

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
B. Protection of the Environment				
	Best practice to ensure minimisation of dust emissions (e.g. proper stockpiling, watering etc.) during dry and windy conditions and transportation.	Watering conducted, no dust emissions are observed, no workers' grievances	Contractor/ DWN	Regular site inspection Review of grievance records
	Ensure speed limits (30km/h) on site and when passing local receptor areas. Sensitise drivers. Minimise drop heights for materials.	Speed signs installed Training performed and recorded Accident/incident reports	Contractor/ DWN	Random site inspection Review of grievance records Review of accident/incident records Review of training records
B15. Noise and vibration	Avoid operations and vehicle movements at night.	Limit noisy activities to between 07:00–18:00.	Contractor/ DWN	Random site inspection Review of grievance records Review of accident/incident records Review of training records
	Locate stationary equipment (such as power generators) as far as possible from nearby receptors (e.g. worker resting areas, populated areas and environmentally sensitive areas). Make sure that noise levels don't exceed 80db in case of equipment or vehicle use. Maintain and service construction machinery regularly. Provide advance notice to communities before high-noise activities such as blasting.	Distances between equipment and receptors are kept Maintenance records	Contractor/ DWN	Review of grievance records Monitor noise levels in case of complaints

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
B. Protection of the Environment				
B16. Waste Management	Identify waste management facilities and waste management contractors. Ensure disposal through waste contractors licensed for treatment/removal/recycling of each of the waste types.	Waste management through licensed contractors, if feasible Waste management contracts Waste transfer notes	Contractor/ DWN	Inspect waste management facilities Proof of contractors' certifications Review of waste transfer records
	The Contractor shall develop a Waste Management Plan (WMP) in line with local and international best practices. Conduct monthly waste audits and include KPIs such as % of waste recycled or reused.	WMP approval and monitoring.	DWN	Review of WMP every 6 months.
	Ensure that all wastes produced are properly collected, segregated, stored, transported and treated	Waste collection areas existent, waste inventories Waste transfer notes	Contractor/ DWN	Regular site inspection Review of waste inventories Review of waste transfer records
	Minimise the waste production to the extent possible.	Records of waste production are kept Waste Management Plan Training performed and recorded	Contractor/ DWN	Monitor (e.g. monthly) the amount of waste produced Review of training records
	Document all waste related operations (type of wastes, quantities produced etc.).	Storage, transport and treatment of waste is documented Waste transfer notes Waste inventories	Contractor/ DWN	Review of waste transfer records Review of waste inventories
	Prohibit open burning of waste and illegal dumping.	Visual inspection for fire remains	DWN	Regular site inspection

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
B. Protection of the Environment				
	Prevent littering by worker awareness.	Visual inspection	Contractor/ DWN	Regular site inspection Toolbox Talks records on littering awareness
	Water pollution prevention in line with the Water Resources Management Act, IFC PS3	Permitting and licensing Pollution Control Obligations Monitoring and enforcement	Contractor/ DWN	Review of permits Site inspection
	Appropriate and safe storage of fuels, construction materials, wastes and any materials that can cause spills. Store hazardous materials on bunded surfaces with impermeable floors (either concrete or thick plastic liners) Provide drip trays for stationary equipment Train workers in spill response.	Safe storage of materials Spill response procedure Spill response and remediation equipment in place.	Contractor/ DWN	Regular site inspection
B17. Vegetation clearing	Limit vegetation clearing to areas within the site boundary where it is strictly necessary. Bio-diversity walk through survey is required before work commencement.	Vegetation clearing minimal Marking the borders of works site boundaries	Contractor/ DWN	Site inspection prior to commencement of activities.
	Ensure that no chemicals/pesticides are used, burning of vegetation is restricted etc. Do not clear vegetation more than two months in advance of operations	No use of fires or chemicals on site Marking the borders of works site boundaries Usage of warning signs	Contractor/ DWN	Site inspection prior to commencement of activities. Site inspection during site clearance

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
B. Protection of the Environment				
	Implement progressive clearing and immediate backfilling where applicable.	Visual inspection	Contractor/ DWN	Site inspection
	Avoid clearing mature trees and endangered species.	No mature trees cleared	Contractor/ DWN	Site inspection prior to commencement of activities.
B18. Biodiversity	Avoid to the extent possible areas of ecological value.	Areas of ecological value avoided	Contractor/ DWN	Site assessment prior to site selection.
	Avoid natural habitat disturbance outside construction area.	No habitats disturbed outside construction area	Contractor/ DWN	Regular site inspection
	Relocate any slow moving fauna before activities commence.	Visual inspections.	Contractor / ECO and DWN	Site inspection before commencement
B19. Erosion control measures	If construction takes place on inclined surfaces/slopes, ensure preventive erosion control measures are applied (e.g. plan to retain trees and other vegetation, use of natural contours for roads and drainage networks, excavated drainage channels).	Preventive temporary and permanent erosion control measures in place Landscape and bio-restoration plan in place	Contractor/ DWN	Random site inspection to check if measures where applied
	Ensure that topsoil is stripped and stored properly. Topsoil should not be mixed with subsoil. Topsoil stockpile to be protected from erosion.	Topsoil salvaged and stored. Stockpile height limited	Contractor/ DWN	Monitor if topsoil is properly stripped and stored
	Schedule construction to avoid rainy season.	Mayor earthworks need to be concluded during the dry season	Contractor	Regular site inspection
	Backfill trenches within the quickest possible time.	Avoid long periods storage of excavated material	Contractor/ DWN	Regular site inspection

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
B. Protection of the Environment				
	After construction, topsoil to be used for restoration of the area.	Topsoil re-used for restoration	Contractor/ DWN	Site inspection at completion
B20. Site rehabilitation	Ensure that rehabilitated areas don't pose health and safety risks (such as holes, ponds).	Reinstatement completed	Contractor/ DWN	Site inspection at completion Inspection after heavy rainfalls
	Reinstatement of construction working area to the best possible after construction activities are completed.	Reinstatement completed	Contractor/ DWN	Site inspection at completion Inspection after heavy rainfalls
	Rehabilitate borrow areas, backfill material stockpile sites and access roads, where applicable.	Rehabilitation completed	Contractor/ DWN	Site inspection at completion
	Photo documentation (before and after) as part of verification.	Rehabilitation / Decommissioning	Contractor/ DWN	Monitoring process

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
C. Health and Safety				
C22. Health and Safety Plan	Develop a Health and Safety Plan to provide for a safe and healthy work environment, taking into account the ESHS impacts and risks level of the works. Fence off hazardous areas, use traffic signage, provide community awareness and emergency response plan. Align with IFC PS4, KfW community safety protocols.	H&S Plan in place Hazardous identification	Contractor/ DWN Contractor	Review of H&S Plan Site inspection and reporting Review of grievance records
C24. Accident reporting	Ensure all H&S related incidents (e.g. observations, accidents) on site are recorded and followed up properly.	Incident recording process in place	Contractor/ DWN	Check incident/accident records
C28. Personal protective equipment	Ensure the provision of Personal Protective Equipment (PPE) for workers **i. Eye and Face Protection** Safety glasses or face shields are worn any time work operations can cause foreign objects to get in the eye. For example, during welding, cutting, grinding, nailing (or when working with concrete and/or harmful chemicals or when exposed to flying particles). Wear when exposed to any electrical hazards, including working on energized electrical systems. Eye and face protectors – select based on anticipated hazards.	PPE used by everyone on-site Training performed and recorded	Contractor/Site Manager	Random site inspection Review training records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
C. Health and Safety				
	ii. Foot Protection Construction workers should wear work shoes or boots with slip-resistant and puncture-resistant soles. Safety-toed footwear is worn to prevent crushed toes when working around heavy equipment or falling objects. **iii. Hand Protection** Gloves should fit snugly. Workers should wear the right gloves for the job (examples: heavy-duty rubber gloves for concrete work; welding gloves for welding; insulated gloves and sleeves when exposed to electrical hazards). **iv. Head Protection** Wear hard hats where there is a potential for objects falling from above, bumps to the head from fixed objects, or of accidental head contact with electrical hazards. Hard hats – routinely inspect them for dents, cracks or deterioration; replace after a heavy blow or electrical shock; maintain in good condition.			

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
C. Health and Safety				
	v. Hearing Protection Use earplugs/earmuffs in high noise work areas where chainsaws or heavy equipment are used; clean or replace earplugs regularly.			
C31. Emergency scenarios prevention	Ensure immediate cleaning of any spills and remediation of contaminated areas after construction.	Workers trained. Emergency Response Team (ERT) is in place	Contractor/ DWN	Random site inspection after spill events One-time inspection after construction Review of training records Review of ERT
	Provide necessary prevention equipment and teams on site in line with applicable regulations to respond to emergency scenarios e.g. fire, explosion, floods, natural hazards etc.	Prevention equipment and team is in place Training performed and recorded	Contractor/ DWN	Regular site inspection Review list of equipment Review of ERT Review of training records
	Maintain high standard in housekeeping on site. Construction materials and equipment should be stored properly.	Visual verification of good housekeeping on-site	Contractor/ DWN	Random site inspection
	Ensure that all blasting areas are clear before blasting. Obtain a siren and sound the siren for audio warning before blasting activities.	Safety personel shall be on site to verify impelementation.	Blasting contractor	Verify before blasting.

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
C. Health and Safety				
C33. First-aid	Ensure minimum first aid provisions on site (suitably stocked first-aid kits; a person, respectively an adequate number of first-aid helpers and ensure that staff and workers are informed about first-aid arrangements)	Suitable first aid kits on site Ensure the presence of first aid helpers in all shifts First aid certificates	Contractor/ DWN	Regular monitoring of first aid kits Review of first aider certificates Review of number of first aiders required by local legislation
C37. Access to health care	In case more than 35 workers are present on site, ensure that a hospital, medical clinic or a health centre can be reached within a period of 45 minutes.	Medical centres in the proximity of the site.	Contractor/ DWN	Medical centres in the proximity of the site identified once prior the commencement of works
C40. Hygiene, accommodation and food	Ensure provision of Health and Safety (H&S) and hygienic and sanitary facilities at the site, including shaded welfare areas, bathrooms, changing rooms and potable water. Ensure toilets and changing rooms are separated between male and female employees.	Appropriate H&S and sanitary facilities provided at site	Contractor/ DWN	Campsite inspection prior to accommodation of the workers. Regular inspection Review of grievance records
	Ensure the provision of adequate space, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, fire and disease-carrying animals, adequate sanitary and washing facilities, adequate lighting, and basic medical services, in accordance with all applicable health and safety regulations and norms.	Appropriate conditions for workers on site	Contractor/ DWN	Campsite inspection prior to accommodation of the workers. Regular inspection Review of grievance records
	Report any occurrence of any communicable diseases amongst the workforce (STD, HIV/AIDS, TB, malaria and Hepatitis B and C). Sensitise workers.	Communicable Diseases Register Training performed and recorded	Contractor/ DWN	Review of diseases register and disease prevention programme if available. Review of training records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
D. Labour and relations with local communities				
D42. Labour conditions	Ensure minimum legal labour standards as per ILO regulations (child/forced labour, sexual assault, no discrimination, equal opportunities, working hours, minimum wages) are met.	Grievance Mechanism Records, Training performed and recorded	Contractor/ DWN	Review of Inspection reports (also from labour authorities), Review of grievance records Review of training records
	Ensure that all direct and indirect workers have access to and are aware about the Grievance Mechanism were they can raise workplace relevant complaints anonymously.	Grievance Mechanism in place and grievances recorded Training performed and recorded	Contractor/ DWN	Review of grievance register Review of training records
	Ensure all workers have the same rights and are treated equally.	Non-discrimination policy in place	Contractor/ DWN	Random site inspection Review of grievance register
D43. Local recruitment	Ensure local communities are preferred for the supply of goods and services to the Project and Project personnel, where appropriate.	Local Procurement and Employment Records	Contractor/ DWN	Review procurement and employment rules and records Review of grievance register
D44. Transport	Organise carpools/buses for worker transportation where needed. Ensure safe transportation is available for workers.	Carpools/ buses used	Contractor/ DWN	Review of grievance register
D47. Community interaction **Section 12.4 of the EA Report**	Engage/ communicate/inform communities regarding blasting and construction activities through the Contractors apponted CLO. Ensure consultations with the local authorities and communities regarding the construction and blasting. Obtain local knowledge regarding archaeological chance finds of and land acquisition matters.	Minutes of Meetings Grievance Mechanism – Section 12.7 of the Environmental Report	Contractor/ DWN	Review of grievance register Minutes of consultation meetings

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
D. Labour and relations with local communities				
	Initiate an efficient Grievance Mechanism to allow potentially affected individuals to raise their concerns	Grievance Mechanism in place. Grievances recorded	Contractor/ DWN	Review of grievance register
	Engage with the local community and potential affected households to understand their needs and identify the risk of damage to their livelihood basis through the Project (e.g. take of pasture land, lack of access to water). This is also important before blasting activities. Should land acquisition be inevitable, a timely and fair compensation should be given to all affected persons?	Minutes of Meetings Grievance Mechanism records Management Plan for Land Acquisition and Compensation if needed	Contractor/ DWN	Review of grievance register and meeting minutes
D48. Damage to people and property	Ensure all contractors implement Codes of Conduct concerning employment and workforce behavior (including but not limited to safety rules, zero tolerance for substance abuse, environmental sensitivity of the area, gender equality and sexual harassment, respect for the beliefs and customs of the populations and community relations in general).	Code of Conduct attached Grievance Mechanism records	Contractor/ DWN	Worker interviews, Review of grievance register
	Ensure that site areas are provided with appropriate security, fencing, signage and lighting. Use hazard notices/signs/barriers to protect children and other vulnerable people from harm and prevent access to non-workers.	H&S planning of construction site done, items installed	Contractor/ DWN	Inspection prior to the activities. Regular site inspection Review of grievance register

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
D. Labour and relations with local communities				
D49.Land acquisition and land take	Engage with the local community to understand the land ownership and land use. Avoid to the extent possible land take of both formal and informal land owners/land users. If land take is inevitable, no forced eviction should take place. Owners should be compensated prior to access to land.	Grievance Mechanism Management Plan for Land Acquisition and Compensation if needed	Contractor/ DWN	Once during site selection Review of grievance log Follow up of land acquisition/compensation process
D50. Traffic management	Ensure safe driving by Project personnel (e.g. through training/induction).	Driver Training Records as part of Induction training	Contractor/ DWN	Review of training records Review of grievance register
	Establish designated haul routes; avoid school and pedestrian zones.	Driver Training Records as part of Induction training	Contractor/ DWN	Review of training records Review of grievance register
	Assign flag people at road crossings used by construction vehicles.	Visual inspection	Contractor/ DWN	Review of training records Review of grievance register Visual inspection
	Target signage and outreach activities to improve public awareness of traffic changes and potential hazards for high-risk sections of public roads, including near the site and laydown areas.	Warning signs Minutes of Meetings	Contractor/ DWN	Inspection if traffic routes, Review of grievance register

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
D. Labour and relations with local communities				
D51. Fossils/ Archaeological Chance Finds	Establish specific procedures to manage the protection of archaeological and historical sites, chance finds and fossils. Halt work if artifacts are found, engage National Heritage Council. Comply with Heritage Act and IFC PS8.	Chance Finds Procedure Notification records to relevant authority Training records, Records about chance finds	Contractor/ DWN	Site inspection Review records of chance finds

This List was supplied by DWN and forms part of the ESMP mitigation measures for this project:

Topic	DO	DON'T
Land Use	• Prefer already disturbed areas for workers' accommodation, storage, workshop and the worksite. • Clearly mark "No-go" areas (cultivated lands or fruit trees, wetlands, grave sites or any sensitive environment or social site/area). • Avoid proximity to schools, health posts and households with vulnerable families. • Clean up the worksite and rehabilitate the site to its original condition. • Rehabilitate all temporary access tracks, haul roads and any other disturbed areas outside of the approved working areas to their original condition.	• Do not enter any worksites and areas without permissions and approvals. • Do not damage any households and associated structures, cultivated lands, fruit trees or any other potential source of income. • Do not undertake any activity and park your vehicles outside of the working area borders.
Noise	• Limit working hours for noisy activities working hours close to schools, hospitals, residents, religious buildings, etc. • Turn off vehicle engines if not required. • Keep the noise level to acceptable limits.	• Do not undertake any noisy activity during night time.
Dust and Air	• Minimize traffic wherever possible and drive slowly. • Spray the unpaved roads with water if you're working close to schools, hospitals, residential areas, etc. • Revegetate the disturbed areas as soon as activity is completed. • Drive slowly not to generate dust.	• Do not store cement, sand, excavated material without cover sheets or shelters. • Do not clear the vegetation cover if it's not required.
Water	• Refuel the vehicles at least 30 m away water courses. • Fence the construction site adjacent to the sensitive areas such as natural water courses, ponds, drains. • Divert the runoff / water the construction sites or disturbed areas, using ditches.	• Do not use any natural water resources to supply water (e.g. springs, streams, lakes without approval of relevant authorities, local leaders. • Do not discharge of hazardous substances, chemicals, construction material and wastes d into water courses, ponds, drainage systems. • Do not block the water flow.

Topic	DO	DON'T
Waste	• Keep the working site clean and tidy. • Store hazardous waste using secondary containment and restrict access to hazardous waste storage area to prevent harm to construction staff, environment and public. • Perform on site sorting to separate liquid, organic, demolition, hazardous, recyclables waste streams and identity the disposal pathway for each of them. • Use waste containers without any damages and leakages. • Reuse the excavated soil as much as possible for backfilling, landscaping and for other project areas where excavation material is required. • Collaborate with local authorities to transport and dispose waste in accordance with legal requirements.	• Do not burn any type of waste. • Do not dump waste at any unpermitted area and especially near watercourses. • Do not leave any sharp or dangerous objects (knives, box cutters, scissors, broken glass, etc.) that may attract children's attention living close to the construction site.
Employment and Labour Rights	• Implement a fair and transparent employment process. • Provide workers with clear and understandable information regarding rights via contract documents in local language.	• Do not discriminate any workers or job applicants on the basis of their gender, marital status, nationality, ethnicity, age, religion or sexual orientation. • Do not recruit children (under 18 years old) or use forced labour.
Code of Conduct	• Establish a Code of Conduct for worker-community interaction and on-site behavior. Oblige workers to adhere to code of conduct.	
Grievances	• Establish and maintain grievance mechanism accessible for workers.	**1.** Do not ignore community complaints

Topic	DO	DON'T
Community Safety	• Establish and maintain grievance mechanism for local communities adjacent to construction sites. • Secure worksites (temporary bridges, traffic controls, barricades, signs and warning lights). • Demarcate open trenches with high visible temporary fencing, undertake monitoring after rainfall, and prevent flooding of trenches. • Inform relevant authorities immediately in case of damages on utilities such as underground and aboveground electricity lines, water lines, gas lines, oil pipelines, etc. • Establish appropriate site boundary and access controls near settlements to prevent unauthorized entry to construction or activity sites especially by children (e.g. fencing of construction section in the vicinity of settlements or communities).	• Do not leave any holes and openings without secure fencing provided with fixed, clearly marked covers. • Do not exceed the speed limits.
Traffic Management	• Implement speed limits for all Project vehicles. • Equip vehicles with reverse signals. Ensure that truck drivers are accompanied by a flagman or watchman while reversing, unloading and loading. • Train all drivers on safety provisions. • Avoid routes with blind curves, blind intersections and very narrow roads alongside steep slopes. • Avoid routes that are frequently used by locals. • Use local traffic signage and collaborate with the responsible local authorities and communities. • Keep access roads in good condition and free from deposits, waste, construction material. • Use flagmen where appropriate and install clear and visible signage. • Avoid vehicle traffic during hours that children are travelling to and from school.	• Do not drive without a valid driver's license. • Do not use cell phones while driving.

Topic	DO	DON'T
Occupational Health and Safety	• Provide health and safety training to all Project employees and familiarize workers with the risks related with their activities. • Conduct risk assessment and define mitigation measures for each activity. • Record and report any workplace hazards or any incidents or injuries. • Provide the right PPE and make sure that all employees use them. • Keep PPEs in good condition and change them in case they are damaged. • Prohibit usage of alcohol or illegal drugs. • Use the right tool for the activity. • Use undamaged ladders if you need to climb up. • Implement good housekeeping to prevent trips, slips and falls. • Conduct daily tool-box talks / conversations on health and safety issues before starting works. • Conduct medical examination for all personnel before the activities start. • Provide sufficient drinking water for workforce. • Provide and maintain toilet facilities for workforce separately for female and male workers. • Provide one trained first aiders per 25 employees and adequate amount of first aid kits on site.	• Do not try to repair any broken equipment and machinery if you are not authorized. • Do not use of metal ladders close to overhead power lines? • Do not work without PPE. • Do not work alone or isolated.
Housekeeping	• Keep working areas clean and tidy. • Secure loose materials that have the potential to fall. • Keep aisles, stairways, passageways, ladders, etc. free of obstructions, materials, cables, chords, hoses, etc. • Keep materials away from the edge of excavations, trenches, roofs, etc. • Cover and secure open trenches, holes and other openings Avoid pools of stagnant water in working areas. • Undertake daily clean-up of activity area.	

Topic	DO	DON'T
Hazardous Material Management	• Store fuels, oils, chemicals and other hazardous materials on a suitably sized impervious and bunded base. • Label the containers clearly with content, handling, storage, expiration, and health and safety information. • Use drip trays during fueling and maintenance (e.g. changing oil) of equipment. • Install proper warning signs at hazardous material storage yards, lock gates and restrict access to authorized personnel. • Store hazardous waste using secondary containment and restrict access to hazardous waste storage area to prevent harm to construction staff, environment and public.	• Do not smoke close to hazardous materials. • Do not dispose of Hazardous Material inappropriately
Fire Prevention and Control	• Take all reasonable and precautionary steps to ensure that fires are not started as a consequence of Project activities on site. • Provide basic fire-fighting equipment available on site (including but not limited to, rubber beaters when working in grass/bush areas, at least one fire extinguisher of the appropriate type when welding or other 'hot' activities are undertaken). • Store flammable materials under conditions that will limit the potential for ignition and the spread of fires. • Train all employees on the fire risks and how to deal with any fires in case one occurs.	• Do not light fire for any reason, incl. waste burning. • Do not throw your cigarette butts on the ground.

16. APPENDIX B

GRIEVANCE MECHANISMS AND PROCESSES

17 APPENDIX C

PUBLIC PARTICIPATION PROCESS

This section of the document reflects all the information applicabel to the Public Participation Process that was followed for this project. This is the notice that was placed in the various newspapers and notice boards:

Notice of Environmental Impact Assessment

The KfW appointed ***SMEC*** to perform the consulting services for the following project:

DW Bulk Infrastructure Projects:
Rundu and Karibib

Enviro Management Consultants Namibia is appointed to conduct the Environmental Impact Assessment and develop an Environmental Management Plan as required by the Environmental Management Act No 7 (2007) and associated Environmental Regulations and further submit the application to the Environmental Commissioner for consideration.

All Interested and Affected Parties (I&AP's) are hereby invited to register in terms of the environmental assessment process and to give input, comments or opinions regarding the intended road upgrade before the 23rd of April 2025.

Public Consultation Meetings:

Rundu
Tuesday, 15 April 2025
Time: 09:00 – 11:00
Venue: Rundu Trade Fair Hall

Karibib
Wednesday,16 April 2025
Time: 11:00 – 13:00
Venue: Karibib Town Hall

For further information, and to register as an I&AP please contact:

Enviro Management Consultants Namibia
Contact: Ms. Maike Prickett or Mr. Rian du Toit
Fax: 088 626968 | Email: maike@enviromcn.com

Proof of placement of the Notices in the various newspapers:

Newspaper Adverts
2 April 2025

MITTWOCH, 2. APRIL 2025

AZ Allgemeine Zeitung

AKTUELL MITTENDRIN FÜR DICH

Ab ins All

Unlauter

Doch Europa

Das Wetter

Windhoek 14°|24°

Walvis Bay 15°|22°

Alte Feste-Umgestaltung beginnt

• Renovierung soll neue Ära für das kulturelle Erbe Namibias einläuten

nary gem awaits. Windhoek Sky Restaurant, more than just a restaurant, blends fine dining, creating a unique experience in the heart of the capital.

MICHELLINE NAWATISES

Notice of Environmental Impact Assessment

DW Bulk Infrastructure Projects:

Rundu and Karibib

Public Consultation Meetings

Rundu

Karibib

osmec

DW KFW

Blending architecture with culinary excellence

Challenges and Triumphs in the industry

Every meal is prepared to perfection, ensuring that guests receive exactly what they ordered.

Sky Restaurant prioritises a calm and serene setting.

A key player in Windhoek's property landscape

Woensdag 2 April 2025

Republikein

N$9

Jou land. Jou mense. Jou nuus.

» **Ministerie waarsku** leerlinge kan honger ly

Koshuise: 'Hofgeskille pootjie kosverskaffing'

Die Verkrygingsraad se tendertoekennings wat herhaaldelik uitgedaag word, bring koshuise se voedselprogramme tot stilstand.

JONGSTE UITDAGING

Die Ruacana-waterval is skouspelagtig mooi.

...nary gem awaits. Windhoek Sky Restaurant, more than just a restaurant, blends fine dining, creating a unique experience in the heart of the capital.

MICHELLINE HAWATISES

Blending architecture with culinary excellence

Every meal is prepared to perfection, ensuring that guests receive exactly what they ordered.

Sky Restaurant prioritises a calm and serene setting.

A key player in Windhoek's property landscape

Challenges and Triumphs in the Industry

The choice of interior colours plays a crucial role in shaping the restaurant's ambience. A blend of grey and green was deliberately chosen, symbolising a fresh and welcoming environment.

TODAY | SUPREME COURT LIMITS POCA SEIZURES - PAGE 3

Namibian Sun

Tells it all

Mother blames trauma for son's murder 3

Kavango East governor vows to revive green schemes 7

Grade 2: Week 7-12

WEDNESDAY

• CURRENT SUPPLIERS DON'T QUALIFY FOR FURTHER EXTENSIONS

Learners face hunger amid catering tender feud

The volatile situation is one of the key reasons government is pushing for the establishment of a dedicated procurement court to handle disputes that could endanger lives.

Endjala in the frame for Swapo school rector's job

TODAY'S SUPPLEMENTS

96 Pages content

nary gem awaits. Windhoek Sky Restaurant, more than just a restaurant, blends fine dining, creating a unique experience in the heart of the capital.

MICHELLINE NAWATISES

Blending architecture with culinary excellence

Every meal is prepared to perfection, ensuring that guests receive exactly what they ordered.

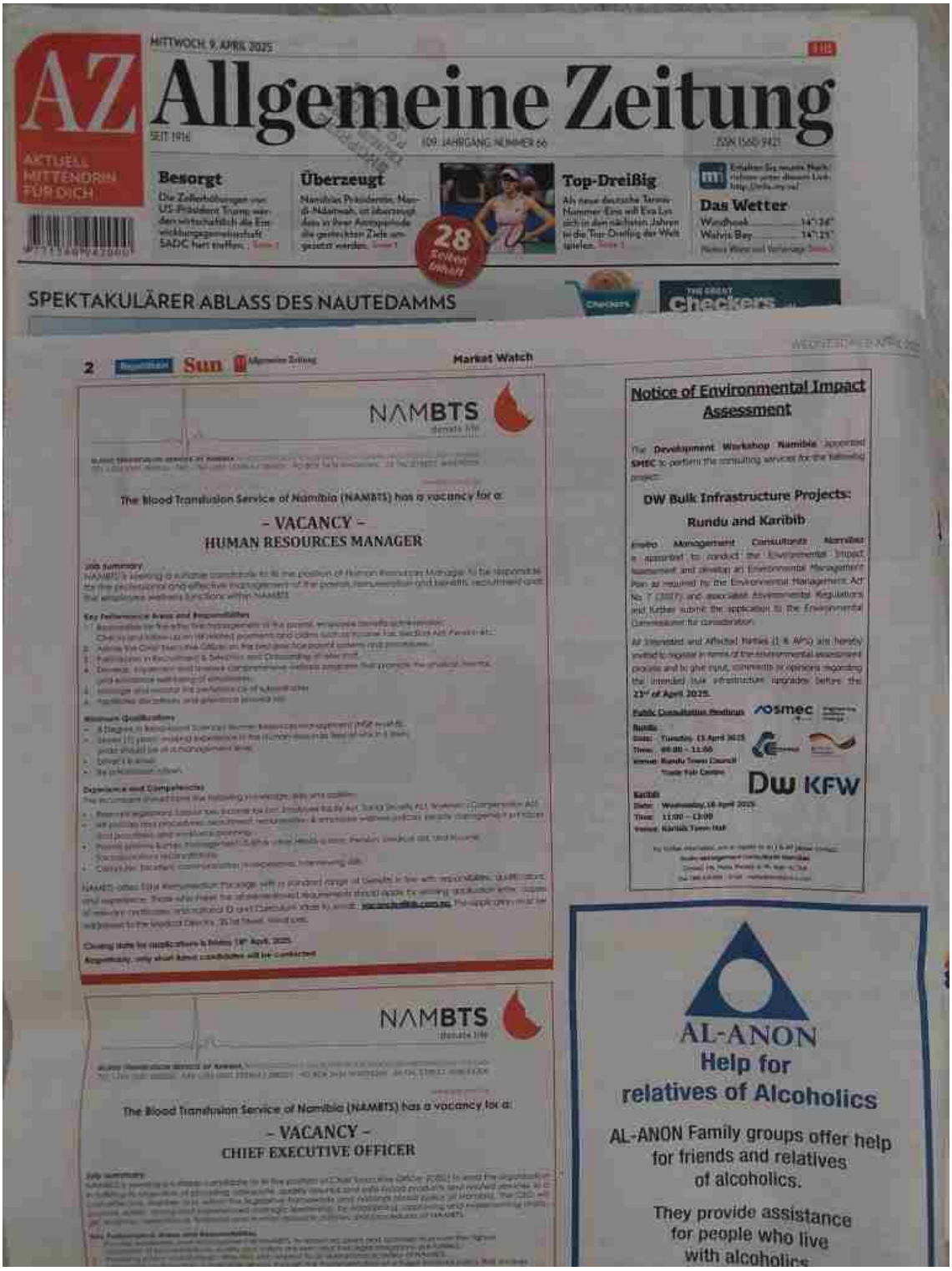
Sky Restaurant prioritises a calm and serene setting.

A key player in Windhoek's property landscape

Challenges and Triumphs in the Industry

The choice of interior colours plays a crucial role in shaping the restaurant's ambience. A blend of grey and green was deliberately chosen, symbolising a fresh and welcoming environment.

Newspaper Adverts
9 April 2025



AZ Allgemeine Zeitung

MITTWOCH, 9. APRIL 2025

SEIT 1916

AKTUELL MITTENDRIN FÜR DICH

Besorgt

Überzeugt

Top-Dreißig

Das Wetter

SPEKTAKULÄRER ABLASS DES NAUTEDAMMS

Market Watch

NAMBTS

The Blood Transfusion Service of Namibia (NAMBTS) has a vacancy for a:

– VACANCY –

HUMAN RESOURCES MANAGER

Notice of Environmental Impact Assessment

DW Bulk Infrastructure Projects:

Rundu and Karibib

NAMBTS

The Blood Transfusion Service of Namibia (NAMBTS) has a vacancy for a:

– VACANCY –

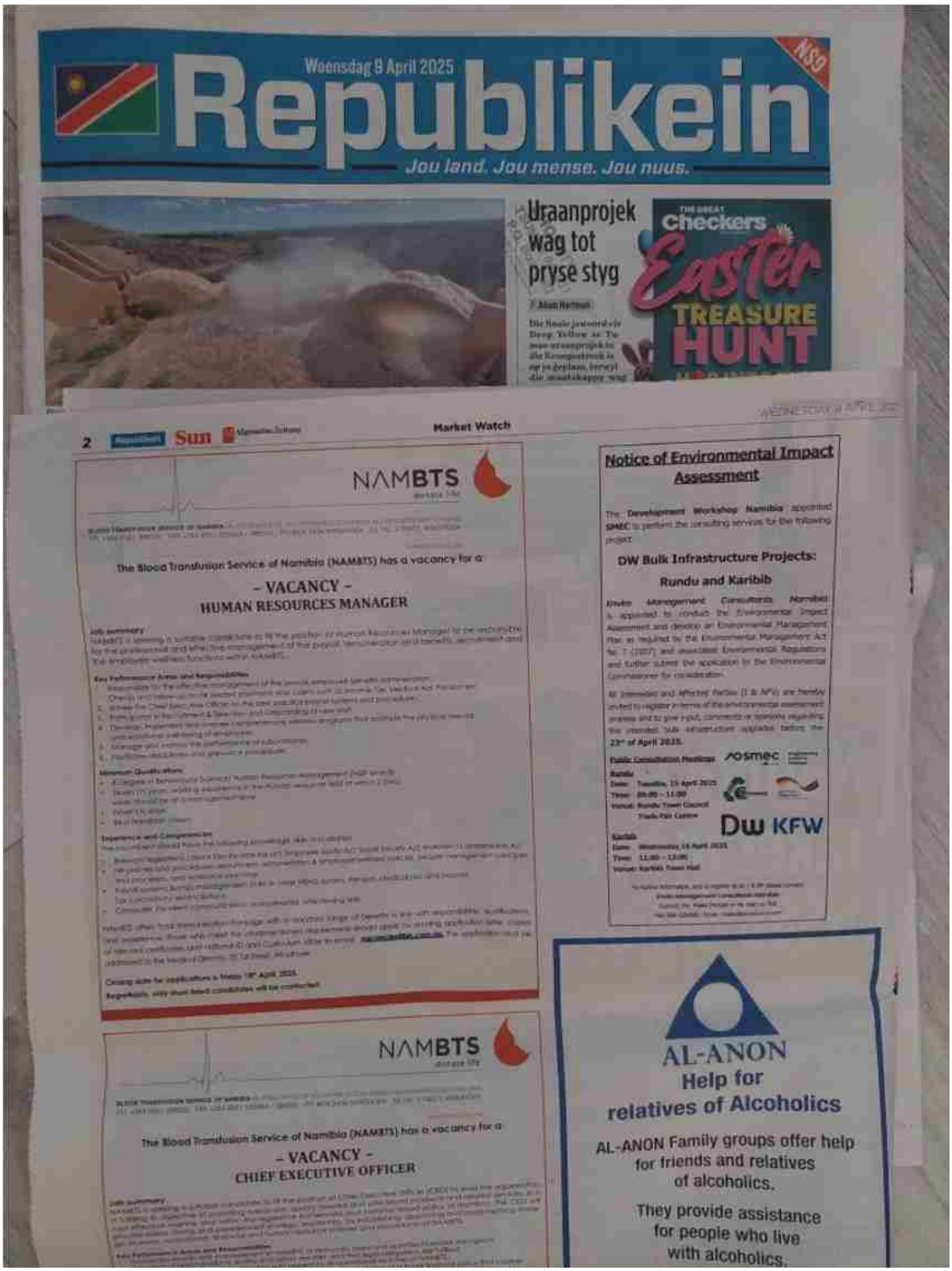
CHIEF EXECUTIVE OFFICER

AL-ANON

Help for relatives of Alcoholics

AL-ANON Family groups offer help for friends and relatives of alcoholics.

They provide assistance for people who live with alcoholics



Woensdag 9 April 2025

Republikein

NS9

Jou land. Jou mense. Jou nuus.

Uraanprojek wag tot pryse styg

Checkers Easter TREASURE HUNT

2 Market Watch

NAMBTS

The Blood Transfusion Service of Namibia (NAMBTS) has a vacancy for a

– VACANCY –

HUMAN RESOURCES MANAGER

Notice of Environmental Impact Assessment

DW Bulk Infrastructure Projects:

Rundu and Karibib

AL-ANON

Help for relatives of Alcoholics

AL-ANON Family groups offer help for friends and relatives of alcoholics.

They provide assistance for people who live with alcoholics.

NAMBTS

The Blood Transfusion Service of Namibia (NAMBTS) has a vacancy for a

– VACANCY –

CHIEF EXECUTIVE OFFICER

TODAY | BRAZILIAN DOCTOR'S CASE POSTPONED TO MAY - PAGE 4
Namibian
Sun
Tells it all
Trees, shacks as classrooms at Rundu govt school
3
Kavango West farmers face dire seed shortage
5
Grade 3 - Week 7-12
WEDNESDAY
'College loan' saga: Accused granted N$100 000 bail each
N$7
SHOPRITE
2
Sun
Market Watch
NAMBTS
The Blood Transfusion Service of Namibia (NAMBTS) has a vacancy for a
- VACANCY -
HUMAN RESOURCES MANAGER
Notice of Environmental Impact Assessment
DW Bulk Infrastructure Projects:
Rundu and Karibib
23rd of April 2025.
smec
DW KFW
NAMBTS
The Blood Transfusion Service of Namibia (NAMBTS) has a vacancy for a
- VACANCY -
CHIEF EXECUTIVE OFFICER
AL-ANON
Help for
relatives of Alcoholics
AL-ANON Family groups offer help
for friends and relatives
of alcoholics.
They provide assistance
for people who live
with alcoholics.

Poster Notices placed at various places:

Karibib Town Council Reception

Town Council Technical Department

Minutes of the meeting as well as Attendance Register.

Karibib - Meeting Minutes

Type of Meeting:	Public Consultation Meeting
Venue:	Karibib Town Hall
Date:	16 April 2025
Time:	11:15 – 12:30

Agenda

- Welcome – Mr Rian du Toit
- Project and Project Team Introduction – Mr Rian du Toit
- EIA Discussion – Mr Rian du Toit
- Technical Discussion – Mr Nicolaas Tromp
- Presentation grievance mechanism – Mr Nicolaas Tromp
- Q&A – all attendees
- Conclusion – Mr Rian du Toit

1. Welcome

Mr Rian du Toit, EMC

Mr du Toit welcomed the attendees and thanked everyone for making their time available to be present today.

2. Project and Project Team Introduction

Mr Rian du Toit, EMC

Enviro Management Consultants (EMC) – Mr Rian du Toit & Ms Maike Prickett
SMEC – Mr Nicolaas Tromp

3. EIA Discussion

Mr Rian du Toit, EMC

The environment is defined as bio-physical (water, soil, plants, etc), social, monetary and legislation.
For development projects there is a need for environmental investigations and management, we look at the environmental requirements and make sure that the project complies with the environmental legislation, we look at the following aspects:

- *The environment*
- *The construction*
- *Environmental Impact Assessment (EIA)*
- *Environmental Social Management Plan (ESMP)*
- Rules and Regulations/Legislation:
-

Constitution of Namibia

Article 95 (l) of the Constitution of Namibia states that "The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the … "maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future….

Environmental Management Act No.7 (2007)

Namibia's Environmental Management Act was passed in parliament in December 2007 and sets out the principles of environmental management.

Before we can proceed with a development project, we must consult the Ministry of Environment, Forestry and Tourism (MEFT) and obtain an Environmental Clearance Certificate (ECC).

Development proposals are classified according to their impacts, based on that classification it is determined what level of impact assessment needs to be conducted.

The EIA process is as follows:

Determine if the project is a "listed activity"

Conduct the EIA process:

- *Submission of project to MEFT*
- *Register project with MEFT*
- *Develop a proposal (this includes stakeholder consultation)*
  - *Consult the public/stakeholders to give their input (comments and concerns)*
  - *Consider the negative and positive impacts of projects*
  - *Present and submit EIA and application for Environmental Clearance Certificate (ECC)*
- *Classification of proposal*
- *Environmental Assessment (if significant impacts are identified) OR*
- *No formal assessment (if no significant impacts are identified)*
- *Conditions of approval from MEFT*
- *Record of decision by MEFT*
- *Appeal (in case of rejection)*
- *Implementation of proposal (upon approval of ECC)*
- *Monitoring of project (by environmentalist)*
- *Auditing of project (by environmentalist)*
-

ECC has conditions of approval and is valid for 3 years.

- Impacts – what we do and how that changes the environment (cause and affect).
- *E.g. building a road: what is needed to build the road (layer works, materials), how does that change the environment, during operation what are the positive or negative effects of the road on the environment*
- Environmental Impact Assessment defined: "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant aspects of development proposals prior to major decisions being taken and commitments made".

The purpose of the environmental impact assessment is to ensure that decision makers consider the environmental impacts when deciding whether or not to proceed with a project.

Project Activities – What We Do

- *Site Clearing and Preparation*
- *Surveying and Setting Out*
- *Excavation and Trenching*
- *Installation of Underground Services*
- *Roadworks and Paving*
- *Concrete Works and Foundations*
- *Mechanical and Electrical Installations*
- *Traffic and Pedestrian Management*

Possible impacts during construction

- *Soil Erosion and Sedimentation*
- *Loss of Vegetation and Habitat*
- *Air Pollution*
- *Water Pollution*
- *Noise Pollution*
- *Groundwater Depletion or Contamination*
- *Increased Surface Runoff and Flood Risk*
- *Waste Generation*
- *Visual Intrusion and Aesthetic Degradation*
- *Health and Safety of Workers and Public*

4. The Environmental and Social Management Plan (ESMP) – (tells us how we are going to manage the environment):

- *The ESMP is a contractual agreement between the Proponent and the Contractor (including the sub-contractors / SMEs) and is conditional to the applicable Environmental Clearance Certificate.*
- *The ESMP intends to bridge the gap between the EIA findings and the implementation of the project.*
- *The ESMP detail actions to ensure compliance with regulatory bodies and further ensures that environmental performance is increased through mitigation measures on impacts as they occur.*
- *Monitoring, auditing and taking corrective actions during implementation are crucial interventions to successfully implement the ESMP.*

ESMP Principles

Avoidance and Minimisation of Impacts

- Design infrastructure layouts to avoid sensitive areas (e.g., wetlands, heritage sites, schools).
- Minimise the footprint of construction to reduce vegetation loss and disruption to residents.

Compliance with Environmental and Legal Requirements

- Adhere to national legislation (e.g., Environmental Management Act, Water Act) and

- municipal by-laws.
- Ensure all contractors are aware of and comply with permit conditions (ECC and ESMP).

Stakeholder Engagement and Communication

Maintain open communication channels with affected communities.

- Provide prior notification of disruptive activities such as road closures or water interruptions.

Pollution Prevention and Waste Management

- Implement dust suppression, noise control, and spill prevention measures.
- Manage construction waste through segregation, reuse, and safe disposal at approved facilities.

Health, Safety, and Environmental (HSE) Monitoring

- Regularly monitor construction activities for compliance with HSE standards.
- Ensure workers are trained in occupational safety and provided with necessary PPE (Personal Protective Equipment).

The objective of an EIA is to maintain sustainability - a balance between development and conservation.

5. Technical Presentation Mr Nicolaas Tromp (SMEC)

The SMEC project team is based in Swakopmund and Windhoek.

The Karibib Bulk Infrastructure Project entails sewer and electrical reticulation. The project is currently in the preliminary design stage and entails upgrades to existing sewer lines and a new line next to the existing sewer line to service Usab Extension 6, called DWN project area.

Electricity line connected to ErongoRED will feed extension 6 and 7.

Upgrade of gravitational pipeline from 160mm to 450mm from the residential area to the treatment plant, about 500m of the pipeline will be upgraded, the main reason is to alleviate the blockages that are experienced there.

The project involves upgrades to the manholes and screening facility. A new 600mm pipeline is planned, which correlates with the town planning and census data. There are 6 existing oxidation ponds of which only 2 are in operation, while the other 4 are empty and their concrete linings are damaged. The project is looking at the rehabilitation of the ponds as well.

The fence around the pond is a health and safety concern, most of it has been stolen. We would like to propose the construction of a new fence; however, security is an issue, and the fence will have to be guarded.

We are doing sewer connections only; water is not included under our scope.

The inclusion of erf connections is our proposal/recommendation to the Development Workshop Namibia (DWN). Due to the hard material found on site, it would be advisable to do the erf connections while bulk infrastructure services are being established, to avoid having to do blasting or using jackhammers once houses have been constructed.

Roads that are being crossed by the project will be reinstated.

Proposed timelines for the implementation of the project:

- Preliminary design to be completed – end June 2025
- Design to be completed – July 2025
- Tender process to be completed – November 2025
- Construction to commence – January 2026
- The project has a 12-month construction period
-

6. Presentation grievance mechanism Mr Nicolaas Tromp (SMEC)

Development Workshop Infrastructure - Grievance Redress Mechanism (GRM):

Rationale for the GRM

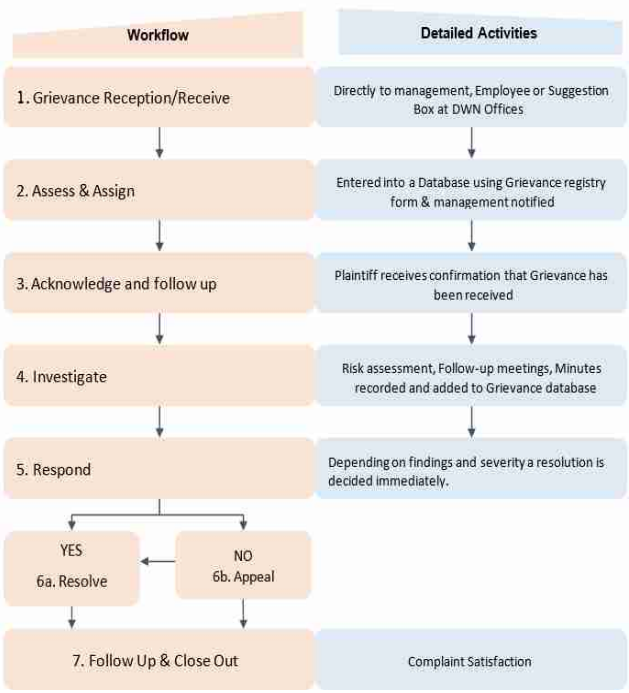
- Dispute resolution
- Receipt and processing of complaints from individuals or groups affected by the project
- Assess and respond to concerns from Interested and Affected Parties (I&APs)
- Confidentiality will be respected and DWN will take all reasonable steps to protect parties to the process from retaliation

GRM Structure

- **First Level of Redress**
  - **Who**: Contractor, SMEC, GFA, DWN
  - **What**: register the complaint, investigate and recommend an action
  - **How**: writing, verbally, over the phone, by fax, email and online
  - **Outcome**: the resolution at the first level will be done within 10 working days and notified to the concerned

- **Second Level of Redress**
  - **When**: after 10 days or if asked by complainant
  - **Who**: grievance-handling committee
  - **What**: register the complaint, investigate and recommend an action
  - **How**: writing, verbally, over the phone, by fax, email and online
  - **Outcome**: the resolution at the first level will be done within 10 working days and notified to the concerned

GRM Process



Confidentiality

- Duty of **Confidentiality**
- **Personal Data**: deleted or modified afterwards
- **Conflicts of Interest**: to be avoided
- Protection from **retaliation**
- Performance **Monitoring and Reporting**

The inclusion of a Community Liaison Officer (CLO) may be important to provide community members with a person that they trust and feel comfortable with to address their grievances, who in turn provides the link to DWN, the consultant or the contractor.

Questions & Answers

Q1. Ms Emely Tjombumbi
Will you be doing the environmental auditing?

***Response* (Mr Rian du Toit):** *Yes.*

Q2. Mr Edgard Goreseb
Will the contractors work during holidays and on Sundays?

***Response* (Mr Rian du Toit):** *Unlikely if they can maintain their schedule.*

What about dust suppression, how is that going to be done?

***Response* (Mr Rian du Toit):** *We will do a site assessment and determine the receptors and based on that mitigation measures have to be implemented where required.*

Q3. Mr Rian du Toit
You mentioned blasting, why is that?

***Response* (Mr Nicolaas Tromp):** *The sewer artisan mentioned a lot of blasting and while doing a site visit, we drove over a lot of rocks. We spoke to the contractor currently on site and they confirmed that about 90% of the area around the site is rock.*

Q4. Mr Nicolaas Tromp
New material needs to be brought in. Do the Town Council (TC) representatives know of any existing borrow pits that could be used?

***Response* (Town Council):** *None.*

***Response* (Mr Rian du Toit):** *What happens to the rock that is blasted and has to be removed?*

***Response* (Mr Nicolaas Tromp):** *The TC needs to advise us if there is a dumpsite to discard the rock or they can be used for beautification along the project area. Specifications will have to be given to the contractor.*

Q5. Mr Edgard Goreseb
The redundant pipes should be brought back to the TC.

***Response* (Mr Nicolaas Tromp):** *Agree, if material can be reused it should be returned to the Town Council. However, at this stage the existing pipes will remain, and new pipes are connected to them. The Town Council and contractor would have to sign off on materials being returned to the TC.*

Q6. Mr Edgard Goreseb
How will the trenches be compacted?

***Response* (Mr Nicolaas Tromp):** *The bottom layer will be compacted, then pipes will be laid within a blanket and then we will backfill in layers. The shaping and finishing is part of the contract.*

Q7. Ms Bianca Foelscher
I am a community representative/activist. Are there employment opportunities for local people? There are a lot of people looking for work. People do not worry about meetings anymore; they just want work.

***Response* (Mr Nicolaas Tromp):** *There are opportunities. Skilled labour might be brought from outside, but semi-and unskilled labour is to be employed from the area. According to the scope of works a Community Liasion Officer (CLO) needs to be employed. On this project it is estimated that approximately 60 employment opportunities will be presented to the*

communities. Although SME employment is not a requirement from the funding agency, it should be discussed at the bid opening.

Q8. Mr Edgard Goreseb

The office of the CEO has lists of CVs of local community members.

***Response* (Mr Nicolaas Tromp):** *A CLO will play an important role in the employment of local community members.*

***Response* (Mr Rian du Toit):** *The KfW are very focussed on local empowerment and community upliftment.*

Q9. Mr Nicolaas Tromp

The contractor will have to supply their own water and must engage with the TC.

Q6. Mr Edgard Goreseb

Can construction commence earlier?

***Response* (Mr Nicolaas Tromp):** *The review processes take time and so does the tender process and the appointment of a contractor. This is the most realistic timeframe taking the builders holidays into consideration. However, some of the works will be done in parallel to each other, this might speed up the construction program.*

Q6. Ms Selma Mutua

Was there another stakeholder meeting held?

***Response* (Mr Rian du Toit):** *No, only this one. This is the start of the project, there will be further stakeholder engagements.*

***Response* (Ms Selma Mutua):** *I would like to suggest that the next meeting be held at Usab.*

***Response* (Mr Rian du Toit):** *Noted.*

***Response* (Mr Nicolaas Tromp):** *There will be stakeholder engagements, the contractor will have meetings with the community and so will the DWN representative, together with the project CLO. These will be especially important considering that blasting will be done on site.*

Conclusion

Mr Rian du Toit, EMC

Mr Rian du Toit thanked everyone for availing their time to attend this meeting. He further emphasized that this was only the beginning of the project, and that further public participation will occur during the course of the project.

End of meeting 12:30

Figure 1: Mr Rian du Toit addressing stakeholders

Figure 2: Mr. Rian Du Toit addressing stakeholders

smec engineering positive change | KFW | Dw | german cooperation | Enviro

Attendance Register

Venue: Karibib Town Hall **Date:** 16/04/25

Project: DW Karibib Bulk Infrastructure Project

Name & Surname	*Organisation*	*Designation*	*Cellphone*	*Email*	*Signature*
Rian du Toit	EMC	Environmentalist			[signature]
Niki Tromp	SMEC	ENGINEER	0812793599	nicolaas.tromp@smec.com	[signature]
Maike Prickett	EMC	GIS Consultant	081 271 6144	maike@environmcn.com	[signature]
Bianca Foelscher	Activist	Accountant	(064)550109		[signature]
Emely Tjombumbi	KTC	Manager Technical	0645500 20	techmanager@karibibtown.org	[signature]
Benhard G	KTC	Artisan Water	0813009274	bravotalohsle@gmail.com	[signature]
Edward GORESEB	KTC	Artisan Roads and Sewer	0818022845	Naterque2311@gmail.com	[signature]
Melody Gontes	K.T.C	LED officer	0852025786	ledofficer@karibibtown.org	[signature]
Sean Flenberg	KTC	PL VOLUNTEER	081 6289609	PLVKARIBIB@gmail	[signature]
Selma Mutota	KTC	Town Planner	064550030	townplanner@karibibtown.org	[signature]